GEER 2023

Greater Everglades Ecosystem Restoration

Data Synthesis, Integration, and Innovation

April 17-20, 2023 | Coral Springs, Florida

USGS science for a changing world

NATIONAL PARK SERVICE

U.S. FISH & WILDLIFE SERVICE

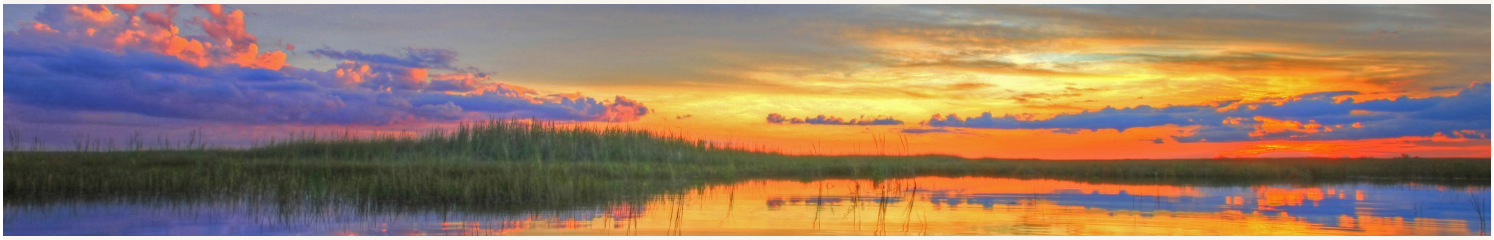
UF IFAS UNIVERSITY of FLORIDA

GEER 2023

Greater Everglades Ecosystem Restoration

Data Synthesis, Integration, and Innovation

April 17-20, 2023 | Coral Springs, Florida



MEETING LOCATOR

Registration & A/V Download
- Grand Floridian Foyer

Plenary Session
- Great Cypress & Royal Poinciana

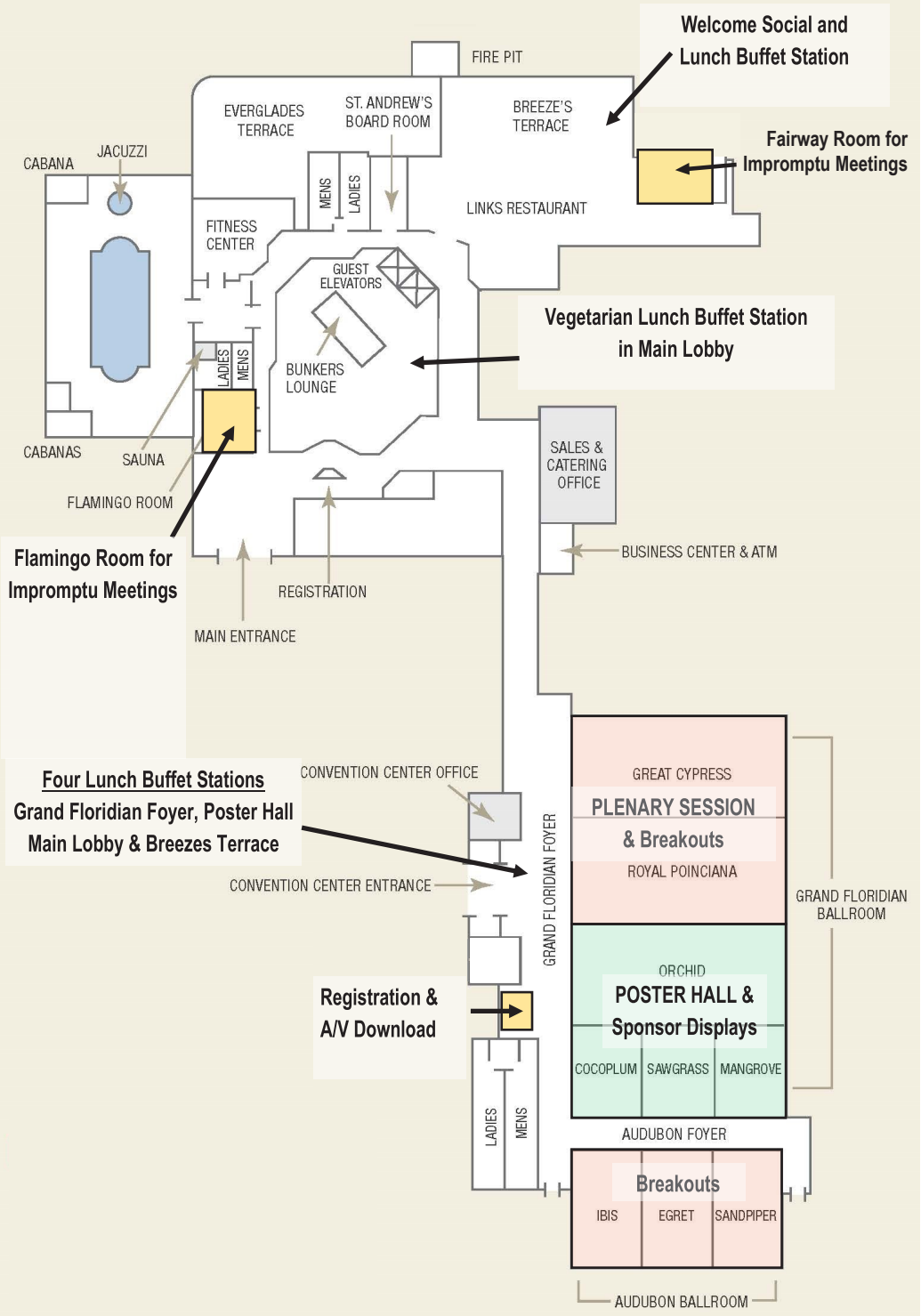
Breakout Sessions
- Great Cypress
- Royal Poinciana
- Ibis
- Egret
- Sandpiper

Posters, Sponsor Displays & Refreshments
- Orchid, Cocoplum, Sawgrass & Mangrove

Lunch Buffet Locations
- Poster Hall
- Ballroom Foyer
- Breeze's Terrace
- Main Lobby *(vegetarian station)*

Impromptu Meetings
- Flamingo Room

UF IFAS UNIVERSITY of FLORIDA



GEER 2023

Greater Everglades Ecosystem Restoration

Data Synthesis, Integration, and Innovation

April 17-20, 2023

Coral Springs, Florida

WiFi: Marriott_CONF | Password: GEER2023

conference.ifas.ufl.edu/geer

All conference documents are available electronically on the GEER website: **conference.ifas.ufl.edu/geer**

Scan these QR codes for quick access:

Agenda (PDF)

Posters (PDF)

Abstracts (PDF)

Program (PDF)

Session Recordings & Poster PDFs

GEER 2023 sessions are being recorded. Recordings will be made posted as links on a private, password protected virtual platform by **June 2**. Registrants will be sent instructions how to log-in and view session recordings and poster PDFs.

TABLE OF CONTENTS

Name Badge

Your name badge serves as your admission to all networking functions while attending GEER 2023, so be sure to wear it throughout the conference.

Guests must be registered in order to attend networking functions and also wear their name badges for entry into functions that are included with the guest fee. The guest fee allows guests 16 years of age and older to attend the Welcome Social on Monday evening and the Poster Session Networking Receptions on Tuesday and Wednesday. Please be sure to register all guests and pay the applicable registration fee.

In honor of

MAGGY RENO HURCHALLA

(1940 – 2022)

Maggy's impact on Florida's conservation movement cannot be overstated. She's the reason developers can't fill in wetlands in Martin County, and the reason I-95 bends away from Stuart. During her 20 years as a Martin County commissioner, she helped craft development rules that made the community a leader in the state for environmental preservation. Her advocacy was fueled by a deep love for Florida's wilderness. She kayaked as often as she could, and spoke about the Everglades to anyone who would listen.

Those of us who had the honor of joining Maggy for a paddle gained a new appreciation for the magic of mangrove tunnels, and we were often treated to a recitation of poetry. She was inspiringly irreverent, and she left a mark on our community that will not be forgotten.

Maggy worked as an advocate until her final days. She sat on Friends of the Everglades Policy & Science Committee, always offering insightful context. She was an eternal optimist, and a generous heart. Maggy also served five terms as County Commissioner in Martin County, Florida, where she was a driving force behind the creation of the county's highly regarded Comprehensive Growth Management Plan, which is arguably the best in the state for its environmental protections. Her efforts are reflected today in the low-density model Martin County enjoys, unique among its neighbors in South Florida. Maggy served on numerous commissions and committees at the regional and state level including Governor Askew's Blue Ribbon Transportation Committee, the State Comprehensive Plan Committee, Governor Chiles' Growth Management Task Force, and was Chairperson of the original Treasure Coast Regional Planning Council.

Among the many awards she received for defending our natural resources are the Martin County Conservation Alliance lifetime award, the Audubon of the Everglades Conservation Award, Florida Association of Environmental Regulators-Environmentalist of the Year 1994, the Everglades Coalition "George Barley Conservationist of the Year Award" 2002, the 2003 National Wetlands Award for Volunteer Leadership, the Everglades Coalition Hall of Fame Award, and the Marjory Stoneman Douglas Defender of the Everglades Award. Her work on wetlands conservation in Florida earned her national recognition as an expert on Florida's wetlands. She continued to serve on advisory councils such as the Governor's Commission for a Sustainable South Florida even after leaving office and remained involved in the battle for Everglades restoration until her death in 2022.

Maggy led an incredible life of adventure outside of her advocacy for the Everglades, frequently traveling and kayaking the waters she worked so hard to protect. Most of all, Maggy brought people together around one very central idea, that we are all connected by water.

Looking for a special place to remember Maggy Hurchalla?

Visit Maggy's Hammock at 3854 SE Kubin Ave, Stuart, FL 34997

Continue Maggy's legacy by donating:

https://www.everglades.org/maggy-hurchalla-opportunity-fund/

Photo: Maggy Reno Hurchalla kayaks through magrove tunnels

Friends of the Everglades

Tribute generously shared by Friends of the Everglades

In honor of

ROBERT (ROB) EDWIN BENNETTS

(1953 – 2022)

Rob Bennetts is most well known for his contribution to understanding the ecology and conservation of the endangered Florida Snail Kite. Although he left Florida in 2003, his influence is recognized 20 years later based on his identifying and quantifying the interconnectedness between Snail Kites, apple snails, wetland plant communities, and hydrology. Protocols for monitoring Snail Kites, and ideas on how to monitor and conduct research on kites and snails, are still being applied in 2023.

Rob started working on Snail Kites in 1986, and was subsequently first author on a comprehensive report on Snail Kite nesting in the Everglades (Bennetts, Collopy, and Beissinger 1988). At that point in his career he had earned his Bachelor's degree from the University of Montana. In that 1988 report, Rob (again, with a Bachelor's degree) put in writing several hypotheses about what influenced Snail Kite foraging success and reproduction, many of which resulted in funded grants in the 1990s and 2000s that created empirical data that supported his ideas from the 1980s. He left Florida and began work on his Master's degree in 1988 at Colorado State University (thesis advisor Dr. Gary White); this is where he began his long career emphasis on quantitative aspects of wildlife movements and demography and habitat quality assessment.

Rob returned to Florida in 1991 to pursue a PhD at the University of Florida with Dr. Wiley Kitchens as his advisor. They designed and executed one of the largest projects, in terms of scale and scope, on a single species in Florida. The radio-tracking data obtained revealed novel information on the extensive movements, exploratory behavior, and survival patterns of Snail Kites, and created a new perspective on the scale at which kites successfully navigate wetlands spread out over 8,000 square miles. Rob et al. produced 22 published manuscripts on kites, three book chapters, and five manuscripts on snails, on which he was first author or co-author. Rob was generous in his sharing of data to include first-authorship for students and field staff as he mentored their careers.

As great an influence as Dr. Bennetts had on our understanding of Snail Kites in Florida, he had just as much influence, if not more so, once he left Florida to lead, as a quantitative ecologist, monitoring and adaptive management programs for the National Park Service out west. He worked at Grand Teton and Yellowstone National Parks, but in the last 10 years of his career he cherished his work on lesser known parks such as Sand Creek Massacre National Historic Site, Fort Union National Monument, Bent's Old Fort National Historic Site, and Washita Battlefield National Historic Site.

Rob's protocols for monitoring Snail Kites, and ideas on how to monitor and conduct research on kites and snails, are still being applied in 2023.

Photo: Robert (Rob) Edwin Bennetts operating an airboat through a river of grass

GEER 2023

Greater Everglades Ecosystem Restoration

Data Synthesis, Integration, and Innovation

Welcome back to Coral Springs for GEER 2023 - the Greater Everglades Ecosystem Restoration (GEER) Science Conference and the first in-person event since GEER 2019!

Initiated by the University of Florida-IFAS and the U.S. Geological Survey and its Greater Everglades Priority Ecosystem Sciences Program, GEER has become the preeminent Everglades science conference. The GEER 2023 theme is "Data synthesis, integration, and innovation", highlighting the importance of big data, how we compile and analyze large amounts of data, and how we use those data for innovation as we provide science in support of Everglades restoration.

High quality science remains a major pillar of effective restoration. We have again faced severe tropical storms such as Hurricane Ian, and the Everglades restoration continues to be challenged by other natural and human-caused stressors and threats. GEER showcases the science behind recent advances in restoration that helps insure that our restoration efforts promote ecosystem resilience and sustainability, along with how we respond to significant restoration challenges: altered hydrology, degraded water quality, invasions by non-native plants and animals, human development placing pressure on our remaining natural systems, and climate change.

Despite these challenges, there has been amazing progress in our restoration program. The U.S. Army Corps of Engineers is in the final steps of completing the Lake Okeechobee System Operating Manual – the policy that will give us the next rule book on how to operate the lake and send its water throughout the system. Progress is being made on the next steps in planning restoration, including the Western Everglades Restoration Project, to help restore, reconnect, and maintain areas in the western Everglades. Work has begun on the Biscayne Bay and Southeastern Everglades Restoration Project to restore parts Biscayne Bay's coastal wetlands and subtidal areas. Work continues on the South Florida Water Management District's Restoration Strategies Program to improve water quality flowing into the Everglades. Cutting edge science is being conducted on better understanding the ecology of the highly invasive Burmese python and examining ways to control that ever-expanding population, and that of other invasive animals and plants. Science is at the forefront of all of these efforts and many more, and GEER 2023 is where you will hear the latest and greatest about these research, monitoring, and modeling studies.

Attended by scientists, engineers, managers, and regulators, GEER gives us an opportunity to showcase and communicate the latest scientific developments, and to facilitate information exchange that builds shared understanding among federal, state, local, and tribal scientists, as well as decision-makers, academia, nongovernmental organizations, the private sector, and private citizens. The program

agenda features five concurrent sessions with 230 oral presentations, two evening poster sessions highlighting 90 posters on Tuesday and Wednesday, an opening plenary session Tuesday morning, our well-known DIG talks on Wednesday morning, and a closing keynote address by Assistant Secretary of Fish and Wildlife and Parks, Ms. Shannon Estenoz on Thursday afternoon. We encourage you to stay until the very end. You won't want to miss these presentations!

"GEER gives us an opportunity to showcase and communicate the latest scientific developments, and to facilitate information exchange that builds shared understanding..."

It takes the effort of many to make a conference of this scope and size come to fruition. We wish to thank the members of the Program Committee and the Dedicated Session Organizers who spent considerable time developing the GEER scientific program, seeking individuals to speak, organizing individually submitted abstracts, and providing overall guidance to the conference. We also appreciate the time and effort of those who submitted abstracts for posters and talks, building presentations to share their work. We appreciate your commitment to GEER, and thank each and every one of you for making time in your schedule to be here, and for using GEER as a tool to network and engage with colleagues.

We also would like to express our deepest appreciation to our valued sponsors. Without their generosity and financial support, it would be impossible to have a conference of this caliber. Please join us in thanking our Gold Level Sponsors, the U.S. Geological Survey, the National Park Service, and the U.S. Fish and Wildlife Service; our Silver Sponsors, the Everglades Foundation, Florida International University's Institute of the Environment, the South Florida Water Management District, and the Miccosukee Tribe of Indians of Florida; and our Bronze Sponsors, Audubon of Florida, Stantec, Florida Atlantic University's Center for Environmental Studies, Eureka Water Probes, the U.S. Department of the Interior, In Situ, and the U.S. Army Corps of Engineers.

Last but not least, join us in thanking the UF/IFAS Office of Conferences and Institutes (OCI) for its diligence and superb management of conference logistics and details. Visit their web site at conference.ifas.ufl.edu/ to meet the team working tirelessly to make this and many other educational and scientific conferences possible. The exceptional quality of their work is why GEER is a much-anticipated feature in south Florida's science community.

We trust you will take advantage of every opportunity to view all of the posters, visit with exhibiting sponsors, attend program sessions, and step outside your comfort zone to make new connections. As Conference Co-Chairs and on behalf of the Program Committee and the Executive Committee, we welcome you to GEER 2023. *We're glad you could join us!*

Nicholas G. Aumen

Conference Chair

Regional Science Advisor - South Florida
U.S. Geological Survey
Loxahatchee, FL

K. Ramesh Reddy

Conference Co-Chair

Graduate Research Professor
Distance Education Coordinator
UF/IFAS Soil and Water Sciences
Gainesville, FL

ABOUT GEER

Science is the foundational element for Everglades restoration and management and GEER is the premier showcase for Everglades science.

Sessions will feature presentations by the best and brightest working in the Everglades, addressing the most pressing and complex science issues that we face now and into the future of restoration – a future that includes a changing climate, threats from invasive species, altered hydrology, development pressure, and degraded water quality. Sound science relevant to these challenges and the restoration efforts is required to provide resource managers and policy-makers with the best information possible.

High-quality science has supported new restoration projects, including:

- the ecological and hydrological effects of new CERP projects and a revised Lake Okeechobee operating schedule
- investigating invasive species such as the Burmese python and the Argentine black and white tegu, and how we can better detect and control them in the future
- providing advanced and easy-to-use scientific tools for restoration managers
- studying how to best achieve balance between restoration goals and endangered species protection
- assessing how a degraded Everglades will respond to restored sheet flow

LOOKING TO THE FUTURE

Scientists are using innovative approaches – think molecular biology, ecosystem modeling, artificial intelligence, advanced remote sensing -- to provide more data for restoration planning and decision-making. As we progress, we look for opportunities to integrate these innovative data with measurements from the ground, such as, integrating satellite-derived Lidar ground elevation data and water-level surfaces with EDEN. This example is just one that shows that how collaboration can take advantage of innovation to lead to integration, and ultimately synthesis. For GEER 2023, speakers are asked to consider where we are now, and what is possible by sharing data, collaborating, and synthesizing to build consensus and provide a vision for the future.

GEER will continue its legacy of providing a valuable forum for scientists and engineers to showcase and communicate the latest scientific developments, and to facilitate information exchange that builds shared understanding among federal, state, local, and tribal scientists and decision-makers, academia, non-governmental organizations, the private sector, and private citizens.

Thank you for joining us and participating in GEER 2023's dialogue to better understand and inform Everglades restoration!

COMMITTEE RECOGNITION

Executive Committee

Becky Allenbach, U.S. Environmental Protection Agency, Atlanta, GA
Nick Aumen, *Conference Chair*, U.S. Geological Survey, Loxahatchee, FL
Amy Castaneda, Miccosukee Tribe of Indians of Florida, Miami, FL
Steve Davis, Everglades Foundation, Palmetto Bay, FL
James Erskine, Florida Fish and Wildlife Conservation Commission, West Palm Beach, FL
Evelyn Gaiser, Florida International University, Miami, FL
Lawrence Glenn, South Florida Water Management District, West Palm Beach, FL
Melodie Naja, Everglades National Park, Homestead, FL
Rolf Olson, A.R.M. Loxahatchee National Wildlife Refuge, Boynton Beach, FL
Lt. Col. Todd Polk, U.S. Army Corps of Engineers, West Palm Beach, FL
Colin Polsky, Florida Atlantic University, Davie, FL
Bob Progulske, U.S. Fish and Wildlife Service, Vero Beach, FL
Pedro Ramos, Everglades National Park, Homestead, FL
K. Ramesh Reddy, *Conference Co-Chair*, UF/IFAS, Gainesville, FL
Larry Williams, U.S. Fish and Wildlife Service, Vero Beach, FL

Program Committee

Nick Aumen, *Conference Chair*, U.S. Geological Survey, Loxahatchee, FL
Steve Davis, Everglades Foundation, Palmetto Bay, FL
Howie Gonzalez, U.S. Army Corps of Engineers, Jacksonville, FL
Melissa Martin, U.S. Department of Agriculture, Natural Resource Conservation Service, Washington DC
Beth Miller-Tipton, *Conference Coordinator*, UF/IFAS Office of Conferences & Institutes, Gainesville, FL
K. Ramesh Reddy, *Conference Co-Chair*, UF/IFAS Soil & Water Sciences Department, Gainesville, FL
Stephanie Romañach, U.S. Geological Survey, Gainesville, FL
Dave Rudnick, Retired, Gainesville, FL
Dan Scheidt, USEPA Region 4 Water Division, Athens, Georgia
Fred Sklar, South Florida Water Management District, West Palm Beach, FL
Joel Trexler, Florida State University, Tallahassee, FL
Matt Whiles, UF/IFAS Soil & Water Sciences Department, Gainesville, FL

THANK YOU TO OUR SPONSORS

Without their generous support, this conference would not be possible.

GOLD SPONSORS

USGS science for a changing world

NATIONAL PARK SERVICE

U.S. FISH & WILDLIFE SERVICE

SILVER SPONSORS

EVERGLADES FOUNDATION

FIU Institute of Environment

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

MICCOSUKEE TRIBE OF INDIANS OF FLORIDA

BRONZE SPONSORS

Audubon FLORIDA

eureka water probes

U.S. DEPARTMENT OF THE INTERIOR MARCH 3, 1849

US Army Corps of Engineers®

Stantec

FAU FLORIDA CENTER FOR ENVIRONMENTAL STUDIES
Charles E. Schmidt College of Science
Florida Atlantic University

In-Situ YOUR EYES IN THE FIELD

SPONSOR DESCRIPTIONS

GOLD SPONSORS

National Park Service

nps.gov

Since 1916, the National Park Service has been entrusted with the care of our national parks. With the help of volunteers and partners, we safeguard these special places and share their stories with more than 318 million visitors every year. But our work doesn't stop there. We are proud that tribes, local governments, nonprofit organizations, businesses, and individual citizens ask for our help in revitalizing their communities, preserving local history, celebrating local heritage, and creating close-to-home opportunities for kids and families to get outside, be active, and have fun. Approximately 20,000 strong, the uncommon men and women of the National Park Service share a common trait: a passion for caring for the nation's special places and sharing their stories. The National Park Service preserves the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations. The Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

U.S. Geological Survey

usgs.gov

USGS serves the Nation by providing reliable scientific information to describe and understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life. USGS employs the best and the brightest experts who bring a range of earth and life science disciplines to bear on problems. By integrating diverse scientific expertise, USGS is able to understand complex natural science phenomena and provide scientific products that lead to solutions. Every day the 10,000 scientists, technicians, and support staff of USGS are working for you in more than 400 locations throughout the United States. As the Nation's largest water, earth, and biological science and civilian mapping agency, USGS collects, monitors, analyzes, and provides scientific understanding about natural resource conditions, issues, and problems.

U.S. Fish and Wildlife Service

fws.gov

The U.S. Fish and Wildlife Service helps ensure a healthy environment for people by providing opportunities for Americans to enjoy the outdoors and our shared natural heritage. We offer a number of services to the public, companies, and local government agencies including agriculture, communication, consultation and technical assistance, duck stamps, entrance passes, fish stocking, importing and exporting, invasive and injurious species, investigational new animal drugs, species management, as well as land management and conservation assistance. With more than 560 National Wildlife Refuges, 70 national fish hatcheries, numerous regional and field offices across the country and thousands of active conservation projects, U.S. Fish and Wildlife Service employs more than 8,400+ individuals dedicated to our mission to conserve, protect and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people. We are the only federal government agency whose primary responsibility is to manage fish and wildlife resources in the public trust for people today and future generations.

continued on next page

SILVER SPONSORS

Everglades Foundation
evergladesfoundation.org

Driven by science since 1993, The Everglades Foundation works to restore and protect America's Everglades. Our renowned scientists are dedicated to unearthing the facts and conducting practical analysis to help local, state, and national leaders make well-informed decisions. By coupling sound science with policy expertise, the Foundation is positioned as one of the most influential players in the fight to preserve and restore one of the world's most unique wetlands.

Florida International University/ Institute of Environment
environment.fiu.edu

The FIU Institute of Environment represents one of the largest and most impactful environmental research programs in the world. We carry over 25 years of experience in water quality research and monitoring, water management and Everglades restoration. Our pioneering research in the Everglades contributes to science-backed solutions for some of the ecosystem's most critical threats, like sea-level rise and saltwater intrusion, biodiversity loss, pollution and contamination, and climate change.

The Miccosukee Tribe of Indians of Florida
miccosukee.com

The Miccosukee Tribe of Indians of Florida (Tribe) is a federally recognized Tribe under the Indian Reorganization Act (1934), as amended, with use and occupancy rights in over 1,000,000 acres of Tribal Lands located within the Everglades and Big Cypress. The Tribe is a named partner and key stakeholder in Everglades restoration. The Tribe's dedication to protecting the Everglades is a matter of primary cultural significance, and Everglades protection is codified in the Tribe's Constitution.

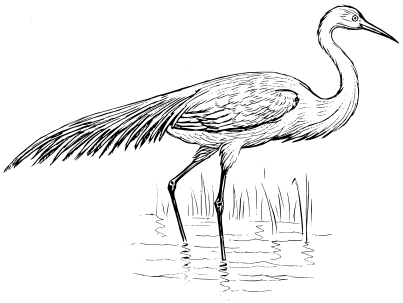
South Florida Water Management District
sfwmd.gov

The South Florida Water Management District's mission is to manage and protect water resources of the region by balancing and improving flood control, water supply, water quality and natural systems. They are a regional governmental agency that manages the water resources in the southern half of Florida, covering 16 counties from Orlando to the Florida Keys and serving a population of 8.1 million residents. A key initiative is restoration of the Everglades – the largest environmental restoration.

BRONZE SPONSORS

Audubon Florida
fl.audubon.org

At Audubon Florida, we focus on using sound science to advocate for common sense solutions to challenges facing the Sunshine State. From clean water to clean energy, natural landscapes to special places, we are here to protect Floridians' prosperity and quality of life. Conservation is good for the environment - and our economy too. We are biologists, policy experts, educators, community members, and volunteers. Audubon Florida protects birds and the places they need, today and tomorrow.



(Bronze Sponsors continued)

Eureka Water Probes

waterprobes.com

Eureka Water Probes manufactures multiparameter water quality sondes for surface and ground water monitoring. Manta+ probes may be used for spot checking, as self-powered dataloggers, or for remote continuous real-time monitoring with cellular or satellite telemetry stations. Manta sondes are easy to use, reliable and operate in the toughest field conditions!

FAU's Florida Center for Environmental Studies & FAU's Environmental Science Program

ces.fau.edu

science.fau.edu/envirosci

FAU's Center for Environmental Studies mission is to conduct research, education, and community engagement activities related to coastal resilience, wetlands ecology, and energy sustainability, including developing community-wide strategies for adapting to social and environmental changes and best practices for coastal cities and land management in urban ecosystems.

In-Situ Inc.

in-situ.com/us

In-Situ Inc. has been creating industry-leading environmental monitoring instrumentation for over 40 years. Specializing in multiparameter water quality sondes, water level pressure transducers, dataloggers, ultrasonic flow meters, and telemetry with a focus on great design, usability, and high reliability in harsh conditions. In-Situ offers a turn-key solution for delivery of decision-quality data via easy integration with telemetry and data services with best-in-class mobile and cloud software.

Stantec Inc.

stantec.com/en

Communities are fundamental. Whether around the corner or across the globe, they provide a foundation--a sense of place and belonging. That is why at Stantec, we are always working to improve our communities. We are scientists, engineers, architects and designers, innovating together at the intersection of community, creativity, and client relationships, all while working passionately to make this a better world. Visit us at stantec.com or on social media.

U.S. Army Corps of Engineers - Jacksonville District

saj.usace.army.mil

The United States Army Corps of Engineers (USACE) Jacksonville District was established in 1884 and is the second largest civil works district in the U.S. Army Corps of Engineers, with an area of responsibility that encompasses Florida and the Caribbean. They provide quality planning, engineering, construction while leading the Corps' single largest ecosystem restoration project – the restoration of America's Everglades.

U.S. Department of the Interior, Office of Everglades Restoration Initiatives

evergladesrestoration.gov

The OERI, under the leadership of the Assistant Secretary for Fish, Wildlife and Parks, serves as the south Florida liaison for the Secretary in coordinating departmental and bureau-level Everglades restoration activities, projects, and programs. The DOI manages nearly 2.5 million acres of land and water resources in the Everglades, has regulatory responsibility for 93 listed species in the Everglades, and produces much of the science that serves as the road map for the restoration program.

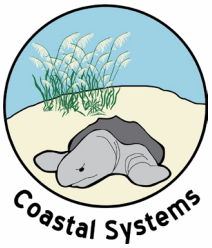
The Florida Master Naturalist Program

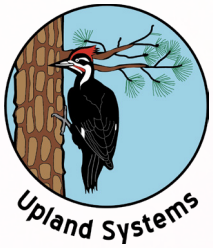
A Natural History Training Program

The Florida Master Naturalist Program (FMNP) is a UF/IFAS Extension environmental education program for adult audiences. FMNP courses are provided by Certified Instructors throughout the state of Florida at Extension offices and other environmental education organizations.

The goal of FMNP is to promote awareness, understanding, and respect of Florida's natural world. FMNP graduates share their knowledge through formal and informal training programs. FMNP consists of three tracks of courses: ***Core, Land Steward, and Restoration!***

Core Courses





Land Steward Courses

Restoration Courses

FMNP Outreach Opportunities

Are you interested in becoming an FMNP instructor or guest speaker? Scan the code below to find out how!

Scan me!

https://bit.ly/3LZtj4q

Hands-on Learning

Explore our Wildlife

UF IFAS
UNIVERSITY of FLORIDA

Florida Master Naturalist Program

www.MasterNaturalist.org

CONFERENCE CHAIRS

Nicholas G. Aumen

Conference Chair

Regional Science Advisor - South Florida
U.S. Geological Survey
Loxahatchee, FL

Nick Aumen is Regional Science Advisor for the U.S. Geological Survey (Southeast Region), overseeing the Greater Everglades Priority Ecosystem Sciences program. This program, involving USGS scientists nationwide, provides high quality science in support of Everglades restoration. Nick was an aquatic ecologist for 15 years with Everglades National Park, leading an interagency team of scientists tracking restoration progress. Prior to his National Park Service position, Nick was the Research Director at the South Florida Water Management District, directing a team of 120-plus scientists conducting research in support of ecosystem restoration. Nick received his B.S. and M.S. in biology at the University of West Florida, and his Ph.D. in microbial ecology at Oregon State University. He was a faculty member in the Biology Department at the University of Mississippi, and was a tenured Associate Professor of Biology when he returned to Florida. Nick presently is an affiliate faculty member at Florida Atlantic University (Department of Geosciences), and at the University of Florida (Soil and Water Science Department). He also served five years on the national Board of Directors of the Sierra Club, a 120-yr-old environmental organization with more than 750,000 members, and served two terms as its Vice-President and one as Treasurer.

K. Ramesh Reddy

Conference Co-chair

Graduate Research Professor, Distance Education Coordinator
UF/IFAS Soil and Water Sciences
Gainesville, FL

Dr. K. Ramesh Reddy is the Director of the UF/IFAS School of Natural Resources and Environment and a Graduate Research Professor of the UF/IFAS Soil, Water, and Ecosystem Sciences Department. He holds a Ph.D. in soil science with specialization in biogeochemistry from Louisiana State University. He conducts research on coupled biogeochemical cycling of nutrients and other contaminants in wetlands and aquatic systems, as related to water quality, coupled biogeochemical cycling, ecosystem productivity, and restoration. He has worked on Florida's wetlands and aquatic systems for more than 45 years. Dr. Reddy established an interdisciplinary program on biogeochemistry of wetlands and aquatic systems, through the Wetland Biogeochemistry Laboratory (WBL) established within the SWSD. Since its establishment in 1987, the WBL has provided a home for graduate students from various disciplines, postdoctoral associates and visiting scientists. He has served on numerous advisory committees at state, national, and international levels. He has served on the National Research Council Committee on Soil Science and the Committee on Independent Scientific Review of Everglades Restoration Progress. He also served on several U.S. Environmental Protection Agency committees including the Science Advisory Board Ecological Effects Committee, Wetland Connectivity Panel, and Lake Erie Phosphorus Objective Panel.

WELCOME REMARKS

J. Scott Angle

Senior Vice President of Agriculture and Natural Resources
University of Florida
Gainesville, FL

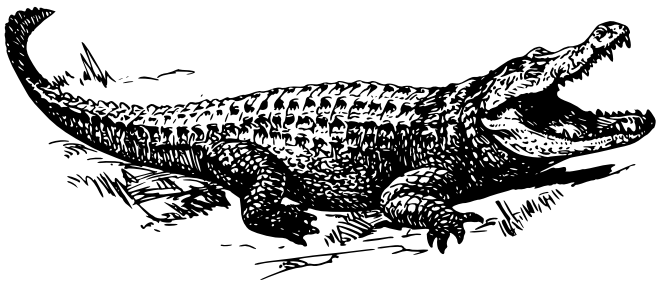
Dr. J. Scott Angle is the University of Florida's Senior Vice President for Agriculture and Natural Resources and leader of UF/IFAS. As chief executive of the agriculture and environmental sciences arm of a leading land-grant university, he champions public science as a path to improve lives and reduce human suffering. Dr. Angle leads nearly 2,300 employees who work in all 67 Florida counties. UF/IFAS encompasses the College of Agricultural and Life Sciences, the Florida Cooperative Extension Service, and the Florida Agricultural Experiment Station.

Dr. Angle previously served as the Director of the National Institute of Food and Agriculture (NIFA) from October 2018 to July 2020. Prior to that, Angle worked for 24 years as a Professor of Soil Science and Associate Director of the Maryland Agricultural Experiment Station and Maryland Cooperative Extension at the University of Maryland. His early work focused on the study of losses of nutrients from agro-ecosystems and their impact on the Chesapeake Bay. He also studied the impact of heavy metals on the food chain with the goal of protecting our food supply from these harmful elements. Later, he concentrated his research on phytoremediation, the use of plants for extraction of heavy metals from soil. In 2005, he moved to Athens, Georgia, where he served as Dean and Director of the College of Agricultural and Environmental Sciences at the University of Georgia for 10 years.

A frequently published author, Angle is a fellow in the American Society of Agronomy and the Soil Science Society of America. He is also a Fulbright Fellow, having worked at Rothamsted Research in the UK.

Angle served as President and CEO of the International Fertilizer Development Center (IFDC) from 2015 to 2018, where he oversaw a staff of more than 800 and coordinated development projects in diverse regions of the world. IFDC provides solutions to alleviate global hunger and poverty through the promotion of economic development and self-sufficiency.

Angle earned his B.S. and M.S. at the University of Maryland in Agronomy and Soil Science, respectively. He earned his Ph.D. from the University of Missouri with an emphasis on Soil Microbiology.



OPENING KEYNOTE SPEAKER

Tuesday, April 18, 2023 | 8:30am – 10:00am

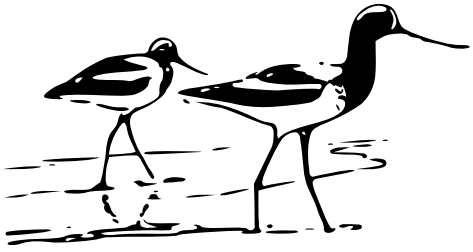
David Krabbenhoft

Senior Scientist (Emeritus)
U.S. Geological Survey, Mercury Research Lab
Madison, WI

Dr. David Krabbenhoft is a Senior Research Scientist (emeritus) with the U.S. Geological Survey (USGS) Mercury Research Lab, located in Madison, Wisconsin. Dave began working on environmental mercury sources and cycling in 1987, and since that time the topic has consumed his professional life. In 1993, Dave established the USGS's Mercury Research Laboratory (MRL), which includes a team of multi-disciplinary mercury scientists and a state-of-the-art analytical facility strictly dedicated to low-level speciation and isotope analysis of mercury in all environmental media. Since its inception, the MRL as conducted mercury research projects that span environments as far ranging as the each of the world's oceans, and freshwater systems from Alaska to Florida, California to New England, and more recently across the entire Great Lakes ecosystem.

While environmental mercury research has been his focus, the specifics of his research are wide ranging, including: atmospheric mercury sources and transport at local-to-global scales; cycling and fluxes of mercury in aquatic and terrestrial ecosystems; biogeochemical controls on the bioavailability of mercury to methylation; and, human epidemiology studies. Over his career, Dave served on a large number of national and international level committees and panels regarding mercury pollution of the environment and has given testimony to the U.S. Congress on several occasions.

In 2006, he served as the co-host for the International Conference on Mercury as a Global Pollutant, which was attended by over 1,200 researchers representing 54 countries across the globe. Since 1990, he has authored or coauthored over 190 papers on mercury in the environment. In 2015, Dave was promoted by USGS, Department of the Interior to Senior Research Scientist (ST), the highest level attainable by a scientist in the federal government system.



CLOSING KEYNOTE SPEAKER

Thursday, April 20, 2023 | 3:30pm–4:30pm

Shannon A. Estenoz

Assistant Secretary for Fish and Wildlife and Parks
U.S. Department of the Interior
Washington, DC

As Assistant Secretary for Fish and Wildlife and Parks, Shannon oversees the U.S. Fish and Wildlife Service, the National Park Service, and the Office of Everglades Restoration Initiatives. Confirmed by the United States Senate in June of 2021, Shannon is a member of the Secretary's leadership team, and an advisor to the Department and the Administration on a wide variety of regulatory, policy, restoration, and management matters that fall under her authority and responsibility. She is also a member of the Department's Infrastructure Executive Board and Climate Change Task Force. Shannon's responsibilities include a broad range of policy and regulatory domains including for example, historic preservation, park and refuge management, resource and species protection, grant administration, tribal trust, land acquisition, and the implementation of dozens of regulatory programs across the U.S. Fish and Wildlife Service and National Park Service.

Shannon's career in landscape scale conservation, restoration, public policy, and management spans 26 years including more than seven years as the U.S. Department of the Interior's Director of Everglades Restoration Initiatives and the Executive Director of the South Florida Ecosystem Restoration Task Force. In the Everglades, Shannon engaged as an advocate, a state water manager and a federal policy expert as the regulatory and policy frameworks of Everglades restoration took shape over two decades. She has served on every major stakeholder and decision-making body in the Everglades over the same period. In her role as the Director of Everglades Restoration Initiatives, Shannon was also a leader on the implementation teams for the largest Everglades restoration projects including the Central Everglades Planning Project, and the Modified Water Deliveries, Western Everglades and Tamiami Trail Next Steps projects.

Shannon's previous professional roles include Chief Operating Officer of the Everglades Foundation, Sun Coast Regional Director of the National Parks Conservation Association, Everglades Program Director of the World Wildlife Fund, Executive Director of the Environmental and Land Use Law Center, and three terms as the National Co-Chair of the Everglades Coalition. Shannon's public service includes appointments by four gubernatorial administrations since 1997 including to the Governor's Commission for a Sustainable South Florida, the Governor's Commission for the Everglades, the Governing Board of the South Florida Water Management District, and the M-CORES Task Force. Shannon also chaired the SFWMD Water Resources Advisory Commission and the Broward County Water Resources Task Force. Shannon has received numerous awards for her work in conservation including from Friends of the Everglades, Audubon of Florida, the Everglades Coalition, the Florida Wildlife Federation, the Environmental Law Institute, and the Ecological Society of America.

Shannon is a fifth generation native of Key West, Florida. She holds degrees in International Affairs and Civil Engineering from Florida State University.

"DIG" PLENARY SESSION SPEAKERS

Design, Innovation & Governance (DIG)

Wednesday, April 19, 2023 | 8:30am–10:00am

Fred Sklar

DIG Organizer

Director of the Everglades Systems Assessment Section
South Florida Water Management District
West Palm Beach, FL

Fred H. Sklar has a Masters in Oceanography and a Ph.D. in Wetland Ecology. He is currently the Director of the Everglades Systems Assessment Section of the South Florida Water Management District (SFWMD) in West Palm Beach. Dr. Sklar has published over 100 articles on the hydrology, soil, plant, and animal processes associated with both the degradation and restoration of wetland and coastal ecosystems. He is an Associate Editor for the ESA journal: Frontiers in Ecology; an executive member of the steering committee for the Florida Coastal Ecosystem LTER Program and a RECOVER Executive Committee member for the Restoration of the Everglades. Past memberships include the National Environmental Advisory Board to the Chief of the USACE; the Science and Engineering Advisory Committee for the Louisiana Water Institute of the Gulf; and scientific coordinator for the North Inlet Long-Term Ecological Research (LTER) program at the University of South Carolina.

Jeremy Conrad

"The Future Needs To Be R.A.D.ical"

Coastal Ecologist
U.S. Fish and Wildlife Service
Sanibel Island, FL

Jeremy Conrad is a coastal ecologist with the United States Fish and Wildlife Service in the branch of Inventory and Monitoring providing natural resource program support for thirty National Wildlife Refuges throughout Florida and the Caribbean. Jeremy is a native of South Florida and spent much of his free time as a youth at the beach or in the Everglades. His passion for the outdoors and conservation led him to earn a M.S. in Marine Ecology and a Ph.D. in Coastal/Estuarine Ecology focused on Everglade's watershed management and the eutrophication of estuarine ecosystems. He has worked for the USFWS for over 15 years focusing on land management for federal trust species in Florida's Everglades, Estuaries and Barrier Island systems. His experience and interest include wetland ecology with a focus on coastal wetland resiliency to large disturbance events and rising sea levels, disturbance ecology, climate change and ecological transformation, and non-native invasive species management.

Lawrence Glenn

"Rapid Data Synthesis Can be HABit Forming"

Director, Water Resources Division
South Florida Water Management District
West Palm Beach, FL

Lawrence serves as Director of the Water Resources Division of the South Florida Water Management District. Glenn manages the Water Supply, Water Quality, and Applied Sciences Bureaus at the District. He supervises the water quality monitoring conducted across the District, updating of regional water supply plans, rulemaking for Minimum Flow and Levels and Water Reservations, and scientific monitoring to evaluate ecological conditions in the District's lakes, rivers, estuaries, and Greater Everglades including Florida Bay. He is a 25-year veteran of participation in large-scale ecosystem restoration projects across the central and south Florida Landscape. He also serves as the Chairman of the South Florida Environmental Restoration Task Force Science Coordination Group and serves on the RECOVER Leadership Group.

John Stephen Kominoski

"Hurricane Trends: Is it all Doom and Gloom?"

Associate Professor
Florida International University
Miami, FL

John Kominoski is an Associate Professor in the Institute of Environment and Department of Biological Sciences at Florida International University. He is the Lead Principal Investigator of the Florida Coastal Everglades Long Term Ecological Research program, which is funded by the National Science Foundation (NSF). His research focuses on biogeochemistry and ecosystem ecology, especially on organic matter processing and the dynamic role of disturbances on spatiotemporal patterns of carbon and nutrients in coastal ecosystems. John's research spans streams, wetlands, and coastal marshes and mangroves. He has conducted research for over 10 years in the Florida Everglades. John collaborates broadly and incorporates both ecological theory and application in his research. He is co-leading an NSF-funded Research Coordination Network called "Hurricane Ecosystem Response Synthesis" that compares storm characteristics and ecosystem responses across subtropical and tropical ecosystems. John has published more than 100 peer-reviewed articles, been awarded grants that have totaled over $15 million, and advised 9 Ph.D. and M.S. students. In 2022, he was honored as a Fellow by the Association for the Sciences of Limnology and Oceanography for his advances to aquatic ecology.

continued on next page

Denise J. Reed

"How Many Eggs do you Crack to Save a Coastal Wetland?"

Professor of Research GRATIS
University of New Orleans
New Orleans, LA

Denise J. Reed is an expert in coastal marsh sustainability and the role of human activities in modifying coastal systems with over 35 years of experience studying coastal issues in the United States and abroad. She has been involved in restoration and resilience planning in coastal Louisiana for over three decades, as well as in the California Bay-Delta, San Francisco Bay and Puget Sound, and has published extensively on the effects of sea-level rise on coastal marshes. Dr. Reed has served as a Distinguished Research Professor at the University of New Orleans and spent five years as Chief Scientist at The Water Institute of the Gulf. She has served on numerous boards and panels addressing the effects of human alterations on coastal environments and the role of science in guiding restoration including the NOAA Science Advisory Board, the Chief of Engineers Environmental Advisory Board, and a number of National Academies' committees including USACE planning, Everglades restoration and the protection of sheltered shorelines. Dr. Reed received her B.S. degree in Geography from Sidney Sussex College, Cambridge and her M.A. and Ph.D. degrees from University of Cambridge, UK.

Stephanie Romañach

"Who's Afraid of Climate Change?"

Research Ecologist
U.S. Geological Survey's Wetland and Aquatic Research Center
Fort Lauderdale, FL

Stephanie Romañach is a Research Ecologist with the U.S. Geological Survey's Wetland and Aquatic Research Center. Stephanie leads Joint Ecosystem Modeling (JEM), focused on developing predictive ecological models and decision support tools that help decision makers explore potential ecological impacts from ecosystem restoration and climate change. In addition to her work on Everglades restoration and conservation planning in Florida, she also works on natural resources conservation in Africa and Asia. She earned her Ph.D. and M.A. in Ecology from the University of California at Santa Barbara, and her B.S. in Zoology from the University of Florida.

G. Lynn Wingard

"The Future is Behind Us"

Research Geologist
Florence Bascom Geoscience Center, U.S. Geological Survey
Reston, VA

Lynn Wingard has been a Research Geologist with the U.S. Geological Survey since 1991 and is Project Chief of two Everglades projects. The majority of her work over the last 25 years has been in support of Everglades Restoration. Her research focuses on analyzing estuarine sediment cores to determine changes in coastal environments over the last 100-5000 years. Lynn's combination of paleontological and modern data has provided Everglades resource managers with information on changes to freshwater flow into the estuaries, changes in habitats and species in the coastal environments, and long-term trends in sea level and climate. Her examination of centennial to millennial scale changes provides a long-term perspective on the impacts of drivers on the ecosystem. She has served on numerous scientific panels, is an associate editor of two journals, and is adjunct faculty at two universities. Lynn has served on several RECOVER Project Delivery Teams, most recently the Biscayne Bay Southeast Everglades Restoration PDT. She received her B.S. degree in geology from the College of William & Mary, Williamsburg, VA, and her M.S. and Ph.D. degrees from George Washington University, Washington, DC.

THANK YOU TO OUR DIG COACH

Jezra Kaye

"Teaching you how to SPEAK LIKE YOURSELF...NO, REALLY!"

Public speaking coach and speechwriter
Speak Up for Success
Brooklyn, New York

DIG speakers were coached by Jezra Kaye, President of Speak Up for Success. Jezra, who's based in Brooklyn, New York, is an acclaimed public speaking coach who has created and delivered hundreds of public speaking workshops and training sessions. Jezra coaches private clients from all backgrounds and industries, in person and via Skype. She is also the author or co-author of six books on business, fundraising, and public speaking.

SESSION ORGANIZERS & MODERATORS

Join us in thanking the following individuals for their efforts organizing and moderating sessions:

1 ..... **Jill King**, SFWMD, West Palm Beach, FL

2 ..... **Amanda Kahn**, SFWMD, West Palm Beach, FL

3 ..... **Tyler Beck**, Florida Fish and Wildlife Conservation Commission, Tequesta, FL

4 ..... **Anna Wachnicka**, SFWMD, West Palm Beach, FL

5 ..... **Mike Duever**, Natural Ecosystems, Naples, FL

6 ..... **Jacob Dombrowski**, SFWMD, West Palm Beach, FL

7 ..... **Gina Ralph**, U.S. Army Corps of Engineers, Jacksonville, FL

8 ..... **Victoria Garcia**, USFWS, Vero Beach, FL

9 ..... **David Rudnick**, National Park Service & SFWMD (ret.), Gainesville, FL

10 ..... **Mahadev Bhat**, Florida International University, Miami, FL

11 ..... **Patrick Inglett**, UF/IFAS Soil, Water, and Ecosystem Sciences Department, Gainesville, FL

12 ..... **Stacie Flood**, SFWMD, West Palm Beach, FL

13 ..... **Elizabeth Boughton**, Archbold Biological Station, Venus, FL

14 ..... **Shimelis Setegn**, SFWMD, West Palm Beach, FL

15 ..... **Grace Kahmann**, Coastal Carolina University, Conway, SC

16 ..... **Mike Jerauld**, DB Environmental, Rockledge, FL

17 ..... **Evelyn Gaiser** and **Paige Kleindl**, Florida International University, Miami, FL

18 ..... **Fahmida Khatun**, Restoration Sciences Branch, South Florida Natural Resources Center Division, National Park Service, and Interagency Modeling Center (IMC), Boynton Beach, FL

19 ..... **Brett Poulin**, University of California Davis, Davis, CA

20 ..... **Nathan Dorn**, Florida International University, Miami, FL

21 ..... **Kathleen Pietro**, SFWMD, West Palm Beach, FL

22 .....**Evelyn Gaiser** and **Paige Kleindl**, Florida International University, Miami, FL

23 .....**Steve Bousquin**, SFWMD, West Palm Beach, FL

24 ..... **Fred Sklar**, SFWMD, West Palm Beach, FL

25 .....**Mark Cook**, SFWMD, West Palm Beach, FL

26 .....**Richard James**, SFWMD, West Palm Beach, FL

27 .....**Cassondra Armstrong**, SFWMD, West Palm Beach, FL

28 .....**Shawn Clem**, Audubon Florida, Naples, FL

29 ..... **John Stamm**, U.S. Geological Survey, Lutz, FL

30 ..... **Barclay Shoemaker**, U.S. Geological Survey, Davie, FL

31 ..... **Ana Carolina Coelho Maran**, SFWMD, West Palm Beach, FL

32 ..... **Kristen Hart**, U.S. Geological Survey, Davie, FL

33 .....**Fahmida Khatun**, Restoration Sciences Branch, South Florida Natural Resources Center Division, National Park Service, and Interagency Modeling Center (IMC), Boynton Beach, FL

34 .....**Judson Harvey**, U.S. Geological Survey, Reston, VA

35 .....**Donatto Surratt**, Everglades National Park - National Park Service, Boynton Beach, FL

36 ..... **Anna Springston**, Ardurra Group, Inc., Metairie, LA

37 ..... **Kristen Hart**, U.S. Geological Survey, Davie, FL

38 .....**Sharon Ewe**, Stantec Inc., St. Petersburg, FL

39 .....**Theresa Strazisar** and **Chris Madden**, SFWMD, West Palm Beach, FL

40 .....**Matahel Ansar** and **Seyed Hajimirzaie**, SFWMD, West Palm Beach, FL

41 .....**Stephanie Johnson**, National Academies of Sciences, Engineering, and Medicine, Washington, DC

42 ..... **Stephanie Romañach**, U.S. Geological Survey, Fort Lauderdale, FL

43 .....**Sharon Ewe**, Stantec Inc., St. Petersburg, FL

44 ..... **Saira Haider**, U.S. Geological Survey, Fort Lauderdale, FL

45 .....**Randall Parkinson**, Florida International University, Melbourne, FL

CONCURRENT SESSION DESCRIPTIONS

The following descriptions provide an overview of each session topic, and why the subject matter is timely and how it is relevant to Everglades ecosystem restoration.

Day	8:30am - 10:00am	10:30am - 12:00pm	1:30pm - 3:00pm	3:30pm - 5:00pm
Tues., April 18	Opening Plenary	Sessions 1-5	Sessions 5-10	Sessions 11-15
Wed., April 19	DIG Plenary	Sessions 16-20	Sessions 21-25	Sessions 26-30
Thur., April 20	Sessions 31-35	Sessions 36-40	Sessions 41-45	Closing Plenary

SESSION 1

STAs 101: The Story of the Everglades Stormwater Treatment Areas

This session will provide an overview of how the Stormwater Treatment Areas (STAs) were developed, how they operate, along with the science and management that goes into ensuring phosphorus removal efficiency to achieve the mandated water quality based effluent limit. STA-5/6 will be highlighted as a case study of lessons learned in the management of these important systems. The session will also provide a history and operation of the Northern STAs that help improve water quality to Lake Okeechobee and the St. Lucie Estuary.

SESSION 2

How RECOVER Science Informs Comprehensive Everglades Restoration Project Planning

This session provides specific examples of how data collected through RECOVER's Monitoring and Assessment Plan informs CERP project planning. It is vital to utilize the best available monitoring data, scientific analyses, and predictive models to inform Performance Measures utilized in project evaluation and the most current modeling tools to address effects of uncertainties on restoration project goals. This session would be of interest to engineers, researchers, modelers, and agency managers.

SESSION 3

Environmental Factors Influencing Apple Snails and Snail Kites

Declines in native apple snails, the expansion of non-native apple snails, and changes in habitat and hydrology have contributed to shifting patterns in Everglade snail kite nesting. Understanding these patterns can aid in snail kite recovery and Everglades ecosystem restoration efforts in Florida. In this session we will examine how environmental factors affect apple snails and snail kites, and how these could explain current trends in snail kite population size and distribution.

SESSION 4

Monitoring, Forecasting and Mitigating Harmful Algal Blooms in Lake Okeechobee and Adjacent Ecosystems

Lake Okeechobee experiences annually extensive and often toxic HABs. Discharges of this HAB- and nutrient-rich water may thus adversely affect downstream ecosystem restoration efforts. The purpose of this session is to highlight the latest research into spatial and temporal HAB dynamics, bloom drivers, and newly developed forecasting models. The session topic targets agency managers, researchers, modelers, and other stakeholders with an interest in regional ecosystem operational decision-making.

SESSION 5

Six Year Post-Restoration Picayune Strand Restoration Project Monitoring Results – Is IT working?

This session will present the first meaningful post-restoration Picayune monitoring data for hydrology, plant communities, and aquatic fauna showing changes resulting from plugging Picayune canals and removing impediments to natural overland flow. We have repeatedly been asked by engineers, modelers, hydrologists, researchers, agency managers, etc. whether the restoration is working. Based on our monitoring data the answer is yes, but also no due to some influences beyond the control of the project.

SESSION 6

STA Vegetation, a Growing Body of Knowledge

An overview of the latest vegetation research in the Everglades Stormwater Treatment Areas (STAs) with a focus on vegetation resilience, phosphorus (P) removal capacity, and management implications. Past efforts have provided invaluable guidance for STA managers, though questions remain regarding the P removal capacity of vegetation communities and how to enhance their sustainability. Maintaining thriving communities remains a key goal for providing low P water to the Everglades protection area.

SESSION 7

How RECOVER Science Informs Comprehensive Everglades Restoration Project Design and Implementation

This session will provide specific examples of how data collected through RECOVER's Monitoring and Assessment Plan informs CERP project design and implementation. As CERP pivots from planning to the design, construction and operation phases, it is imperative that the latest technical data and scientific information is applied to achieve specific project restoration goals and improve system-wide performance. This session would be of interest to engineers, researchers, and agency managers.

SESSION 8

Status and Dynamics of Snail Kite and Apple Snail Populations

Long-term studies of apple snails and snail kites provide critical insight into conservation and management of these species and their responses to Everglades ecosystem restoration. This session will explore factors affecting the status, distribution, and dynamics of apple snails and snail kites, and delve into the current status and likely future of snail kites. This session will be of interest to water and habitat managers, hydrologists, researchers, planners, and agency personnel.

SESSION 9

Long-term Everglades Datasets and Processes

One distinguishing feature of the Everglades science enterprise is the number of years that science in support of restoration has been conducted, and the huge amounts of long-term data that exist. The amount of data collected here and the time period over which those data were collected may be greater than almost any other location anywhere. These talks address various aspects of these data, including TP, fish production, estuarine infauna, fire history, and vegetation patterns.

SESSION 10

Social Science Research in the Everglades Ecosystem and Implications for Restoration

Ecosystem services (ES) of the Everglades, as perceived by stakeholders, influence restoration and infrastructure development decisions. There is a growing interest in knowing how monetary values of ES such as carbon and recreation can be appropriated through payment for ES, infrastructure risk rating, and conservation finance. This session will explore if such emerging market-based programs can boost long-term restoration efforts. This will be of interest to agencies, investors, and academia.

continued on next page

SESSION 11

Dissolved Organic Matter in the STAs: Composition, Transformation and Role in P Transport and Fate

Dissolved organic matter includes a significant portion of the P loads to the Everglades system. Despite this fact, the properties, origins, and fate of this P source remains uncertain. This session is devoted to recent studies directed at better identifying the sources and types of dissolved organic matter and P compounds, as well as the key biotic and abiotic processes affecting their transformation and fate in the watersheds of the Stormwater Treatment Area wetlands.

SESSION 12

Leveraging Next Generation Remote Sensing to Monitor Cyanobacteria Blooms- from Drones to Satellites

South Florida has a history of experiencing potentially toxic harmful algal blooms (HABs). This session will bring together a panel of government and academic groups expert in developing HAB-specific tools to monitor large regional areas using multi- and hyperspectral imagery at multiple scales. This discussion will empower aquatic resource managers to evaluate HAB imagery products for their applicability for monitoring efforts, model development or as inputs for machine-learning applications.

SESSION 13

Development and Assessment of Payment for Water Service Programs on Ranchlands in the Northern Everglades

The session will present lessons learned over 11 years since the Northern Everglades Payment-for-Environmental (NEPES) program began. The introduction will summarize NEPES, a form of Dispersed Water Management (DWM). Presentations will address: 1) Program history; 2) Project performance; 3) Co-benefits and trade-offs; 4) Programmatic perspective; and 5) A rancher perspective on DWM. Of broad interest, this session will increase knowledge on the effectiveness of ranchland DWM projects.

SESSION 14

Hydrological and Hydrodynamic Modeling for Environmental Management in the Everglades and Estuaries

This proposed session introduces an integrated modeling system applied in the everglades, estuaries, and coastal ecosystems. It focuses on the use of models as decision support tool to implement alternative management strategies for water resources allocation, flood and environmental pollution control, re-evaluation of MFL and development of BMAP & TMDL, and Everglades and estuary ecosystem restoration. This session will interest scientists, modelers, hydrologists, engineers, and decision makers.This session will interest scientists, modelers, hydrologists, engineers, and decision makers.

SESSION 15

Multiple Invasive Species in the Everglades

Although Burmese pythons are the focus of a lot of invasive species research, other significant animal invaders threaten the Everglades. These include the invasive apple snail, peacock eel, New Guinea flatworm, and Argentine black and white tegu. These talks highlight important, management-relevant research including their diet, impact on soil microbial communities, population trends, and effects on native species.

SESSION 16

Legacy Phosphorus in the STAs: Challenges at the Frontier of Treatment Wetland Performance

Like elite athletes, the Everglades Stormwater Treatment Areas (STAs) Everglades are highly tuned treatment wetlands, pushing the limits of phosphorus (P) removal. At the ultra-low concentrations required by regulatory targets, STA performance becomes sensitive to factors obscured in higher-P systems. Lab, mesocosm, full-scale and model experiments reveal that legacy P in the underlying soil, when accessed by plants, creates an “internal P load” that hampers maximum achievable STA performance.

SESSION 17

(Part 1 of 2) Student Stewards of the Everglades: Contributions to Federally Funded Research and Collaborations

The substantial involvement of students in Everglades research is federally supported through the South Florida Caribbean Cooperative Ecosystem Studies Unit (SFC-CESU), which provides researchers opportunities to make and communicate scientific advances and promote institution and federal agency collaboration. This session focuses on student contributions to SFC-CESU projects and highlights student engagement opportunities in science-based Everglades management and across institution synthesis.

SESSION 18

Role of Modeling toward the Biscayne Bay and Southeastern Everglades Ecosystem Restoration Efforts

This session will showcase the implementation of a suite of modeling tools to find effective solutions toward Biscayne Bay and Southeastern Everglades Ecosystem Restoration. Historically, natural freshwater produced a distinctive salinity gradient to nurture the diverse habitats, but the current water management system poses environmental challenges. Modeling can suggest ways to restore the ecosystem. This session will benefit engineers, modelers, hydrologists, researchers, and agency managers.

SESSION 19

Multidisciplinary Science to Understand and Forecast Mercury Cycling in the Everglades Ecosystem

Restoration actions and climate drivers are simultaneously altering the hydrology of the Florida Everglades ecosystem, and consequently influencing the biogeochemical cycling of major (e.g., carbon, sulfur) and trace elements (e.g., mercury). This session will present a set of multidisciplinary studies that highlight the state-of-the-science of mercury research in freshwater and coastal portions of the Florida Everglades, highlighting both “lessons learned” and current science needs.

SESSION 20

(Part 1of 2) Updating our Knowledge of Trophic Interactions and Prey Production in the Everglades

Producing prey for large predators like wading birds, alligators and gamefish is a function of the Everglades that is important for restoration scientists to be able to both understand and evaluate in spatiotemporal, historical and restoration contexts. New research on both predators and their prey populations are providing important insights into hydrology-prey-predator relationships across the landscape that could have large implications for restoration scientists, managers, and planners.

SESSION 21

Innovative Research in the Everglades STAs to Understand Internal Wetland Processes

Understanding the transformation and impact of organic and particulate materials within STAs is intrinsic to achieving and sustaining the legally mandated nutrient removal performance in these created systems. This session will present some of the latest research in the fate and turnover of organic material and the influence of fish, sediment, and microbial activity on water quality.

SESSION 22

(Part 2 of 2) Student Stewards of the Everglades: Contributions to Federally Funded Research and Collaborations

The substantial involvement of students in Everglades research is federally supported through the South Florida Caribbean Cooperative Ecosystem Studies Unit (SFC-CESU), which provides researchers opportunities to make and communicate scientific advances and promote institution and federal agency collaboration. This session focuses on student contributions to SFC-CESU projects and highlights student engagement opportunities in science-based Everglades management and across institution synthesis.

continued on next page

SESSION 23

Kissimmee River Restoration: Progress and Challenges

This session will provide an update on the status of the Kissimmee River Restoration Project which completed construction in 2021 but awaits a new regulation schedule to reestablish the pre-channelization flow regime to the river. The session will emphasize monitoring results for hydrology, geomorphology, dissolved oxygen and floodplain vegetation, all of which are being monitored as indicators of the status and success of the restoration project.

SESSION 24

Decompartmentalization Physical Model

The Decompartmentalization Physical Model (DPM) is an adaptive management (AM) experiment assessing benefits of sheet flow and canal filling. DPM also includes experimental herbicide applications and other active marsh improvement efforts. Talks highlight how to best scale-up flow, optimize flow and loads, and reduce harmful canal flow impacts relevant to (and within) the CEPP-S footprint.

SESSION 25

(Part 2 of 2) Updating Our Knowledge of Trophic Interactions and Prey Production in the Everglades

This is a continuation of a two-part session on trophic interactions and prey production. Producing prey for large predators like wading birds, alligators and gamefish is a function of the Everglades that is important for restoration scientists to be able to both understand and evaluate in spatiotemporal, historical and restoration contexts. New research on both predators and their prey populations are providing important insights into hydrology-prey-predator relationships across the landscape that could have large implications for restoration scientists, managers, and planners.

SESSION 26

Integrating Stormwater Treatment Area Research with Simulation Models

Simulation models have been applied to the Everglades Stormwater Treatment areas for decades to support management decisions on sizing and operations. Until recently, these models were relatively simple, evaluating few interactions among the water column, plants and soils. The Restoration Strategies Science Plan (RSSP), a framework to coordinate research on phosphorus cycling in the Everglades Stormwater Treatment Areas, has provided a tremendous amount of information that allows the development and parameterization of more realistic models. This session will present the value of the very simple and relatively complex models and how they can be used to support Restoration Strategies.

SESSION 27

Novel Approaches to CyanoHAB Monitoring in Turbid Inland Waters

Harmful algal blooms have become increasingly prevalent in South Florida ecosystems. Much effort has been put into monitoring and assessment of these blooms and pushing current technologies to meet these needs. This session will discuss several technologies, from satellites to sondes, that have proven useful but not full proof in their ability to collect accurate and timely data. Target audience includes water managers, water quality samplers, harmful algal bloom scientists.

SESSION 28

Combating the Shrubification of Florida's Freshwater Wetlands

Expansion of Carolina willow and other native shrubs in Florida's herbaceous wetlands is increasingly creating management challenges throughout state and resulting in altered wetland function and loss of critical wildlife habitat. Advances in our understanding of willow ecology and development of effective removal and control strategies is allowing some land managers to combat succession by restoring and maintaining herbaceous habitats.

SESSION 29

High-resolution Models and Datasets for Historical and Projected Climate of Southern Florida

The climate setting of Florida is unique in that it is surrounded by oceans and has large areas with surface water, such as the Everglades. Small-scale weather processes such as sea breezes and convection play an important role in controlling rainfall. Models need to be developed that are specific to the scale of processes in Florida. This session provides a forum to discuss the needs for high-resolution climate/ocean models and datasets specifically for southern Florida and the Everglades.

SESSION 30

Water, Energy, and Biogeochemical Cycling in the Everglades – From Fluxes to Disturbances, Synthesis and Innovations

Water, solar energy, and biogeochemical (WEB) cycles have shaped the ecology of the Everglades for millennia. However, these critical cycles are increasingly being impacted by climate change, land use change, and accelerated sea-level rise. This session calls for abstracts that investigate historic, current, and future changes in WEB cycles, including disturbances, innovative approaches, and synthesis. Abstracts could include application of machine learning to map greenhouse gas and evapotranspiration exchanges, soil carbon accumulation and loss, as well as synthesis of multiple sources of data. Through a broad range of submissions, we hope to identify research priorities and emerging issues while promoting collaborative science between the private sector, government agencies and academia.

SESSION 31

(Part 1 of 2) Building Resiliency on Flood Protection in South Florida Region

The session is designed to bring together modelers, engineers, policy makers, planners and partners actively involved in or affected by all aspects of building resiliency in flood protection level of service in planning for future sea level rise, extreme rainfall condition, landuse change, etc. Participants will interact in an interdisciplinary setting to summarize and review best-in-class approach in modeling, planning, management activities and science in building resiliency in Flood Protection level of service. The Flood Protection Level of Service Program of the South Florida Water Management District allows the agency to evaluate the effectiveness of its flood control assets including canals, structures and pump stations to determine their ability to meet and continue to meet the flood protection needs of the region. With an ageing system with many assets approaching end of design life, it is critical to implement this program to inform decisions on flood control infrastructure needs of the region and achieve resiliency for flood protection level of service.

SESSION 32

(Part 1 of 2) Python Science in the Greater Everglades

This two-part session will kick off with a summary of the new Burmese python Science Synthesis, a peer-reviewed summary of python scientific publications through August 2022. The remaining presentations will showcase active python projects throughout the Greater Everglades, to update the audience on the scope and scale of current work on this damaging invader. Managers, scientists, graduate students, and other researchers will be interested in this session.

SESSION 33

Modeling Efforts to Address Challenges in Greater Everglades Ecosystem

The ecosystem restoration challenges in Greater Everglades are multi-faced (such as sea-level rise, conveyance issues, need for operational optimization, water quality etc.) This session will showcase the application of a suite of modeling tools to propose solutions to issues in Northern Everglades (Kissimmee River, Lake Okeechobee areas), Western and Southern Everglades (Florida Bay and Biscayne Bay areas). This session will benefit engineers, modelers, hydrologists, researchers, and agency managers.

continued on next page

SESSION 34

Getting the Water Right – Revisited

This session discusses an evolving challenge of Everglades restoration - as levees are breached and basins reconnected the wetland vegetation becomes the dominant roughness factor controlling water depth in a “free-flowing” Everglades. New research aimed at anticipating outcomes of high-flow restoration is presented, with the goal to help agencies and managers anticipate future changes in water storage, flood conveyance, restoration of deepwater sloughs, and overall ecological health.

SESSION 35

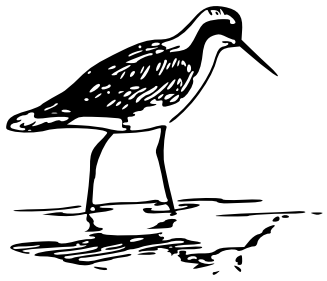
Water Quality Implication for Restoration

The session reviews water quality restoration and explores ecosystem responses we are observing through Everglades restoration. With only a few years remaining before completion of the State-led Restorations Strategies project, it is appropriate to review the capacity of the water management system to improve water quality for southern Everglades. The session is broad, ranging from regional perspectives to location specific analyses concerning water quality improvements and ecosystem response.

SESSION 36

(Part 2 of 2) Building Resiliency on Flood Protection in South Florida Region

This is a continuation of a two-part session Building resiliency for flood protection using high quality integrated modeling tools and pragmatic in its implementation through collaborative with partners and stakeholders with responsibility for the secondary and tertiary flood control systems in the search for the best course of action to mitigate identified deficiencies in flood protection.



SESSION 37

(Part 2 of 2) Python Science in the Greater Everglades

This is a continuation of a two-part session that kicks off with a summary of the new Burmese python Science Synthesis, a peer-reviewed summary of python scientific publications through August 2022. Remaining presentations showcase active python projects throughout the Greater Everglades, to update the audience on the scope and scale of current work on this damaging invader. Managers, scientists, graduate students, and other researchers will be interested in this session.

SESSION 38

Resiliency and Recovery of Tree Islands: Successes from Restoration and Mitigation Efforts

Tree islands have been affected by hydrology and other factors. However, measures such as levee degradation/canal backfilling, restoration of wildlife habitat, control/elimination of invasive species and adaptive management have helped improve tree island resiliency and persistence. Tree island recovery and conservation is critical given hydrologic management and sea-level rise in South Florida. This session will be of interest to Everglades ecologists, hydrologists, and restoration managers.

SESSION 39

Florida Bay Connections: Cross-boundary Integration and Synthesis in the Southern Everglades

In the Everglades, multiple connections across systems and boundaries exist, such as geographic regions, spatio-temporal scales, trophic levels, hydrologic linkages, and the human-nature interface. Studies advancing our understanding of Everglades complexity through integration and synthesis of these connections are important to support CERP with uncertainty in future conditions. This session highlights innovative research on connections within the Everglades southern estuaries and Florida Bay.

SESSION 40

Role of Computational Fluid Dynamics (CFD) in Everglades Restoration

The purpose of this session is to highlight the key role that Computational Fluid Dynamics (CFD) plays in Everglades Restoration. CFD is the science of predicting fluid flow, heat and mass transfer, chemical reactions, and related phenomena by solving a set of numerical governing mathematical equations including conservation of mass, conservation of momentum, and conservation of energy. At SFWMD, CFD has been used to support the hydraulic design and assess performance of project features in several Everglades Restoration projects including C43 Reservoir, L-8 FEB, A-1 FEB, S333 Expansion, S332B and C replacement, S356 pump station, and STAs.

SESSION 41

National Academies' 2022 Review of Everglades Restoration Progress

This session discusses the findings of the congressionally mandated National Academies' 2022 biennial review of Everglades restoration progress]. Committee members will present their evaluation of recent restoration progress, including in depth analysis of stormwater treatment areas and their linkage to CERP progress, restoration in the context of climate change, and science to support decision making. The committee's findings should be of interest to researchers, managers, and modelers.

SESSION 42

Cape Sable Seaside Sparrow Science

The goal of this session is to provide a forum for managers and scientists to learn about recent science on the endangered Cape Sable seaside sparrow. The session will feature new science on sparrow population trends, genetics, vegetation dynamics within sparrow habitat, and impacts of mercury on sparrow breeding.

SESSION 43

Restoring Biscayne Bay: Stepping Back from the Tipping Point?

The ecological health of Biscayne Bay is integral to the economy and vitality of Florida. The Bay has been degraded for many decades, but concerted efforts are now being led by local, state and federal government agencies, universities, businesses and community advocacy groups, to implement monitoring, restoration and management solutions. The science, restoration, socio-economics and policy will be of interest to restoration/ecosystem ecologists, modelers, economists, and land managers.

SESSION 44

Innovative Developments, Applications, and Next Steps: The Everglades Depth Estimation Network (EDEN)

This session brings together scientists, data users, water managers, and researchers that use the Everglades Depth Estimation Network (EDEN) as a support tool, information repository, and ecosystem indicator. Presentations will showcase features and innovative applications of EDEN, and we'll end with a discussion and brainstorming session to guide and develop future advances in EDEN.

SESSION 45

South Florida Coastal Wetland Responses to Climate Change and Hydrologic Restoration

The response of South Florida coastal wetlands to climate change and hydrologic restoration is uncertain. This session will describe ongoing investigations designed to fill knowledge gaps that have historically limited our capacity to forecast South Florida coastal wetland resiliency. Discussion topics include (1) ecology, (2) geochemistry, (3) hydrogeology, (4) sediment accumulation and accretion, and (5) tropical cyclones.

AGENDA-AT-A-GLANCE

Monday, April 17, 2023	
4:00pm–7:00pm	Main Conference Registration Officially Opens
4:00pm–6:00pm	Exhibiting Sponsors Move-in Displays and Session One Poster Presenters Set up Posters
5:00pm–7:00pm	Welcome Networking Social
10:00am–5:30pm	Impromptu Meetings: Take advantage of having multiple colleagues in one location to hold a private meeting. Two rooms are available on a first-come, first-served basis throughout GEER. A sign-up sheet is posted on the MESSAGE BOARD in the pre-function area.
Tuesday, April 18, 2023	
7:30am–8:30am	Early Morning Refreshments in Poster & Sponsor Display Area
8:30am–10:00am	Opening Plenary
10:30am–5:00pm	Concurrent Sessions
12:00pm–1:30pm	Lunch Buffet Provided
5:00pm–7:30pm	Poster Session One and Networking Reception
Wednesday, April 19, 2023	
7:30am–8:30am	Early Morning Refreshments in Poster & Sponsor Display Area
8:30am–10:00am	Design Innovation and Governance (DIG) Plenary
10:30am–5:00pm	Concurrent Sessions
12:00pm–1:30pm	Lunch Buffet Provided [Session One Posters Removed; Session Two Posters Installed]
5:00pm–7:30pm	Poster Session Two and Networking Reception
Thursday, April 20, 2023	
7:30am–8:30am	Early Morning Refreshments in Poster & Sponsor Display Area
8:30am–10:00am	Concurrent Sessions
10:30am–12:00pm	Concurrent Sessions
12:00pm–1:30pm	Lunch Buffet Provided
1:30pm–3:00pm	Concurrent Sessions
3:30pm–4:30pm	Closing Plenary
4:30pm–5:30pm	Exhibitors & Session Two Poster Presenters Remove Displays – GEER Concludes

DETAILED AGENDA

Monday, April 17, 2023	
4:00pm-6:00pm	**Conference Registration Opens** Session One poster presenters and exhibitimg sponsors set up displays. Tuesday speakers turn in presentation PowerPoint files.
5:00pm-7:00pm	**Informal Early Bird Networking Social on the Terrace**
Tuesday, April 18, 2022	
7:30am-5:00pm	**Conference Registration Open**
7:30am-8:30am	**Morning Refreshments in Poster Hall**
8:30am-10:00am	**Opening Plenary Session** **Welcome Remarks** **Dr. Nick Aumen**, Conference Chair, and Regional Science Advisor – South Florida U.S. Geological Survey Southeast Region, Loxahatchee, FL **Dr. K. Ramesh Reddy**, Conference Co-Chair, Director, UF/IFAS School of Natural Resources and Environment; and Graduate Research Professor UF/IFAS Soil, Water, and Ecosystem Sciences Department, Gainesville, FL **Dr. Scott Angle**, Senior Vice President of Agriculture and Natural Resources, University of Florida, Gainesville, FL **Keynote Speaker** **Dr. David P. Krabbenhoft**, Senior Scientist (Emeritus) U.S. Geological Survey Mercury Research Lab, Madison, WI **Keynote Presentation** "Long-term Data Synthesis, Integration, and Methodological Innovations: Toward Harmonized Conceptual Models to Inform Natural Resource Management"
10:00am-10:30am	**AM Refreshments & Networking Break in Poster Hall**

PRESENTATION NOTES

continued on next page

Tuesday, April 18, 2022 (continued)					
Concurrent Sessions [10:30am-12noon]					
	Great Cypress	Royal Poinciana	Ibis	Egret	Sandpiper
	Session 1	Session 2	Session 3	Session 4	Session 5
Session Title	**STAs 101-The Story of the Everglades Stormwater Treatment Areas**	**How RECOVER Science Informs Comprehensive Everglades Restoration Project Planning**	**Environmental Factors Influencing Apple Snails and Snail Kites**	**Monitoring, Forecasting and Mitigation of Harmful Algal Blooms in Lake Okeechobee and Adjacent Ecosystems**	**Six Year Post-Restoration Picayune Strand Restoration Project Monitoring Results – Is it Working?**
Moderator	**Jill King** South Florida Water Management District	**Amanda Kahn** South Florida Water Management District	**Tyler Beck** Florida Fish and Wildlife Conservation Commission	**Anna Wachnicka** South Florida Water Management District	**Mike Duever** Natural Ecosystems
	Introduction & Overview	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**
10:35am	**Jill King** STAs 101: The Story of the Everglades Stormwater Treatment Areas	**Amanda Kahn** How Adaptive Assessment and Monitoring Informs CERP Planning & Implementation (and More!)	**Nathan Barrus** Interactive Effects of Juvenile Snail Predators and Individual Growth Limit *Pomacea paludosa* Populations	**Anna Wachnicka** 2.5 Years of Expanded HAB Monitoring on Lake Okeechobee - What Did We Learn?	**Mike Duever** Hydrologic Restoration in the Picayune Strand Restoration Project and Adjacent Fakahatchee Strand Preserve State Park
10:50am	**Eric Crawford** Ecosystem Management in Vegetation Based Stormwater Treatment Areas	**Nicole Niemeyer** Biscayne Bay and Southeastern Everglades Ecosystem Restoration (BBSEER) Project	**Caroline Poli** An Invasive Prey Provides Long-lasting Silver Spoon Effects for an Endangered Predator	**Jordon Beckler** The HALO Project: Monitoring Sediment Biogeochemical Dynamics to Inform Lake Okeechobee HAB and Nutrient Mitigation	**Sheryl Van Der Heiden** Initial Recovery of Groundcover Plant Communities as the Picayune Strand Restoration Project Progresses
11:05am	**Sarah Bornhoeft** *The Science Plan for the Everglades Stormwater Treatment Areas*: A Strategy for Improving Performance	**Joan Browder** Monitoring, Development, and Application of Performance Measures for Nearshore Southwestern Biscayne Bay	**Meghan Beatty** Source-Sink Dynamics of Snail Kites During the Invasion of a Novel Prey Species	**Richard Stumpf** Cyanobacteria Blooms in Lake Okeechobee	**Maureen Bonness** After Bulldozer Dust Settles: Woody Vegetation Recovery on Picayune Construction Footprints
11:20am	**Tarana Solaiman** Dryout in STAs: An STA-5/6 Case Study	**Fred Sklar** Adaptive Foundational Resilience (AFR): A Performance Measure to Assess the Ability of Native, Endemic Vegetation to Adapt to Sea Level Rise in Southeastern Florida	**Alyssa Jordan** Snail Kite and Wading Bird Response to Torpedograss and Cattail Management on Lake Okeechobee	**Hidetoshi Urakawa** Harmful Algal Bloom Prediction Using Hydrogen Peroxide Monitoring	**David Ceilley** Aquatic Macroinvertebrate Communities of Reference, Restored and Unrestored Wetlands: Picayune Strand Restoration Project
11:35am	**Susan Mason** The Northern STAs – Helping Improve Water Quality in Lake O and the St. Lucie River	**Caitlin Hackett** Predicting Landscape Scale Vegetation Change	**Brian Jeffery** Hydrologic Thresholds and Nest Survival of the Snail Kite	**Kaytee Pokrzywinski** Assessment of a Peroxide-Based Algaecide Product for Potential Control of Cyanobacteria in Lake Okeechobee: A Mesocosm Study	**Discussion**
11:50am	**Discussion**	**Discussion**	**Discussion**	**Discussion**	
12:00pm-1:30pm	**Group Lunch Buffet**				

PRESENTATION NOTES

Session No.	Speaker Name / Notes

continued on next page

Tuesday, April 18, 2022 (continued)					
Concurrent Sessions [1:30pm-3:00pm]					
	Great Cypress	Royal Poinciana	Ibis	Egret	Sandpiper
	Session 6	Session 7	Session 8	Session 9	Session 10
Session Title	**STA Vegetation, a Growing Body of Knowledge**	**How RECOVER Science Informs Comprehensive Everglades Restoration Project Design and Implementation**	**Status and Dynamics of Snail Kite and Apple Snail Populations**	**Long-term Everglades Datasets and Processes**	**Social Science Research in the Everglades Ecosystem and Implications for Restoration**
Moderator	**Jake Dombrowski** South Florida Water Management District	**Gina Paduano Ralph** U.S. Army Corps of Engineers	**Victoria Garcia** U.S. Fish and Wildlife Service	**David Rudnick** National Park Service - and - SFWMD (ret.)	**Mahadev Bhat** Florida International University
	Introduction & Overview	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**
1:35pm	**Camille Herteux** Submerged Aquatic Vegetation Coverage in the STAs- Twenty Years of Survey Data	**Phyllis Klarmann** Integration of Monitoring to Support the Indian River Lagoon-South and C-43 Reservoir CERP Projects	**Josh Cullen** Population Viability of the Everglade Snail Kite Under Future Climate Change Scenarios	**Evelyn Gaiser** Long Term Dynamics of Phosphorus Pulses and their Legacies in the Florida Coastal Everglades	**Melissa Bernardo** Actually-Existing Resilience: Mobilizing Co-Production for Problem Identification in South Florida Environmental Governance
1:50pm	**Luke Evans** Biomass Density Effects on P Cycling in the Treatment Wetland Water Column	**Jenna May** Central Everglades Planning Project - North: How to Engineer the Building of Vegetated Hammock	**Kathryn Smith** Species Status Assessment Report for the Everglade Snail Kite (*Rostrhamus sociabilis plumbeus)*	**John Gatto** Testing for Changes in Long Term Marsh Fish Production Over 26 Years	**Chloe' Vorseth** Tight Lines and Survey Designs: Estimating the Recreational Economic Value of Lake Okeechobee
2:05pm	**Matt Powers** Phosphorus Retention of STA Ecotopes	**Danette Goss** How the Decomp Physical Model Informs Central Everglades Planning Project Adaptive Management	**Kenneth Meyer** The Precarious Status and Future of the U. S. Population of Snail Kites	**Grace McLeod** Fire History and Climate Drive Patterns in Post-Fire Recovery	**Erik Stabenau** Marsh Transformation Index to Inform Coastal Restoration Planning
2:20pm	**Orlando Diaz** Evaluation of Water Depth and Inundation Duration on *Typha domingensis* Sustainability: Test Cell Study	**Gina Paduano Ralph** Use of Regional Sediment Management to Increase Coastal Wetland Resilience to Sea Level Rise	**Phil Darby** Hydrology and Temperature Influences on *Pomacea paludosa* Demography	**Michael Ross** Dynamics of Vegetation Composition and Diversity during Coastal Transgression in the C111 Watershed since 1995	**Mahadev Bhat** Valuing Ecosystem Services of Everglades Restoration: Regional and National Policy Implications
2:35pm	**M. Zaki Moustafa** Maintaining Controllability In Treatment Wetlands While Achieving Sustainability	**Carlos Coronado** Everglades Mangrove Migration Assessment: A Resiliency Pilot Study	**Phil Darby** In Memory of Rob Bennetts: A Retrospective on Snail Kite and Apple Snail Studies, 1985 to the Present	**Christopher Searcy** Distribution, Abundance, and Community Composition of Amphibians in the Everglades Ecosystem.	**Luke Boutwell** Carbon Sequestration in the Everglades
2:50pm	**Discussion**	**Discussion**	**Discussion**	**Discussion**	**Discussion**
3:00pm-3:30pm	**PM Refreshments & Networking Break in Poster Hall**				

PRESENTATION NOTES

Session No.	Speaker Name / Notes

continued on next page

Tuesday, April 18, 2022 (continued)					
Concurrent Sessions [3:30pm-5:00pm]					
	Great Cypress	Royal Poinciana	Ibis	Egret	Sandpiper
	Session 11	Session 12	Session 13	Session 14	Session 15
Session Title	**Dissolved Organic Matter in the STAs: Composition, Transformation and Role in P Transport and Fate**	**Leveraging Next Generation Remote Sensing to Monitor Cyanobacteria Blooms- from Drones to Satellites**	**Development and Assessment of Payment for Water Service Programs on Ranchlands in the Northern Everglades**	**Hydrological and Hydrodynamic Modeling for Environmental Management in the Everglades and Estuaries**	**Multiple Invasive Species in the Everglades**
Moderator	**Patrick W. Inglett** UF/IFAS Soil, Water & Ecosystem Sciences Dept.	**Stacie Flood** South Florida Water Management District	**Elizabeth Boughton** Archbold Biological Station	**Shimelis Setegn** South Florida Water Management District	**Grace Kahmann** Coastal Carolina University
	Introduction & Overview	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**
3:35pm	**Caroline Buchanan** Phosphorus Speciation in Waters Entering and Leaving Everglades Stormwater Treatment Areas as Determined by 31P NMR, XAS and EMPA	**Zhiqiang Chen** Advances in Remote Sensing of CyanoHABs in South Florida Estuaries: Satellite Sensors, Constellations, and Artificial Intelligence	**Benita Whalen** Development of Payment for Water Services in the Northern Everglades	**Yogesh Khare** Quantifying Impacts of Anthropogenic Agricultural Nutrient Accumulations on Phosphorus Loads in a Lake Okeechobee Sub-Watershed	**Yuxi Guo** Wetland Soil Microbial Responses to Land Intensification and an Invasive Macroinvertebrate
3:50pm	**Praveen Subedi** Bioavailability of Dissolved Organic Phosphorus Varies with Inflow Source and Vegetation Type in the Everglades Stormwater Treatment Areas	**Megan Coffer** Eyes in the Sky Monitor Cyanobacterial Blooms in Florida Waters	**Amartya Saha** Estimating Water and Nutrient Retention of Payment for Water Services Projects on South Florida Ranchlands	**Haimanote Bayabil** Developing Efficient Evapotranspiration Modeling Approaches for Sustainable Agricultural Water Management	**Grace Kahmann** Population Trends and Trophic Ecology of Invasive Peacock Eels *(Macrognathus siamensis)* in the Florida Everglades
4:05pm	**Elise Morrison** Characterizing Biomarkers of Litter and Floc Decomposition: Results from a DOM Leaching Experiment	**Michelle Tomlinson** Monitoring Inland Lakes for CyanoHABs Through the Use of Satellite Remote Sensing	**Elizabeth Boughton** Trade-offs and Synergies in a Payment-for-Ecosystem Services Program on Ranchlands in the Everglades Headwaters	**Detong Sun** Freshwater Management Strategies for Potential Algal Bloom in the St. Lucie Estuary, Perspective from a Simple Box Model Theory	**Lawrence Lopez** The Impact of the New Guinea Flatworm: Apparent Local Tree Snail Extinctions in Conservation Lands
4:20pm	**Jacob Gaddy** Amino Acids as Biomarkers of Organic Matter Decay and Source in Treatment Wetland Litter and Floc	**Natalie Hall** Monitoring of Harmful Algal Blooms (HABs) using Hyperspectral Remote Sensing	**Jonathan Madden** Dispersed Water Management – A Programmatic Perspective	**Fitsum Teshome** Evaluating field scale hydrologic and crop simulation models in South Florida	**Jiangxiao Qiu** Invasive Snails Alter Multiple Ecosystem Functions and Services in Subtropical Wetlands
4:35pm	**Todd Osborne** An Overview of the Role of Photolysis in Dissolved Organic Matter Cycling in Stormwater Treatment Areas	**Andrew Kamerosky** Remote Sensing of HABs in the Indian River Lagoon, Florida: UAS Hyperspectral to Satellite Multispectral	**Wes Carlton** The Role of Dispersed Water Management in the Northern Everglades – A Rancher Perspective	**Shimelis Setegn** Modeling Freshwater Inflows in the Loxahatchee River and Estuary Watershed	**Joel Trexler** Illustrating Impacts of the Boom-and-Bust Dynamics of African Jewelfish in the Shark River Slough
4:50pm	**Discussion**	**Discussion**	**Discussion**	**Discussion**	**Discussion**
5:00pm-7:30pm	**Poster Session One and Networking Reception**				

PRESENTATION NOTES

Session No.	Speaker Name / Notes

continued on next page

Wednesday, April 19, 2022	
7:30am-5:00pm	**Conference Registration Open**
7:30am-8:30am	**Morning Refreshments in Poster Hall**
8:30am-10:00am	**DIG Plenary Session** **Design, Innovation, and Governance (DIG): Solutions for Everglades Restoration** Six Ted-style presentations will offer a unique blend of the art of communication with a passion for science on Everglades science and restoration topics. **Welcome Remarks** **Dr. Nick Aumen**, Conference Chair, and Regional Science Advisor – South Florida, U.S. Geological Survey, Davie, FL **DIG Session Organizer and Moderator** **Dr. Fred Sklar**, Director and Section Administrator, Everglades Systems Assessment Section South Florida Water Management District, West Palm Beach, FL **DIG Presentations** "Rapid Data Synthesis Can be HABit Forming" **Mr. Lawrence Glenn**, South Florida Water Management District, West Palm Beach, FL "The Future is Behind Us" **Dr. G. Lynn Wingard**, U.S. Geological Survey, Reston, VA "The Future Needs To Be R.A.D.ical" **Dr. Jeremy Conrad**, U.S. Fish and Wildlife Service, Sanibel Island, FL "How Many Eggs do you Crack to Save a Coastal Wetland?" **Dr. Denise Reed**, University of New Orleans, New Orleans, LA "Hurricane Trends: Is it all Doom and Gloom?" **Dr. John Kominoski**, Florida International University, Miami, FL "Who's Afraid of Climate Change?" **Dr. Stephanie Romañach**, U.S. Geological Survey, Gainesville, FL
10:00am-10:30am	**AM Refreshments & Networking Break in Poster Hall & Removal of Session One Posters**

PRESENTATION NOTES

PRESENTATION NOTES

Session No.	Speaker Name / Notes

continued on next page

Wednesday, April 19, 2022 (continued)					
Concurrent Sessions [10:30am-12:00pm]					
	Great Cypress	**Royal Poinciana**	**Ibis**	**Egret**	**Sandpiper**
	Session 16	**Session 17**	**Session 18**	**Session 19**	**Session 20**
Session Title	**Legacy Phosphorus in the STAs: Challenges at the Frontier of Treatment Wetland Performance**	**Student Stewards of the Everglades: Contributions to Federally Funded Research and Collaborations (Part 1 of 2)**	**Role of Modeling toward the Biscayne Bay and Southeastern Everglades Ecosystem Restoration Efforts**	**Multidisciplinary Science to Understand and Forecast Mercury Cycling in the Everglades Ecosystem**	**Updating our Knowledge of Trophic Interactions and Prey Production in the Everglades (Part 1 of 2)**
Moderator	**Mike Jerauld** DB Environmental	**Paige Kleindl** Florida International University	**Fahmida Khatun** National Park Service, Department of the Interior	**Brett Poulin** University of California - Davis	**Nathan Dorn** Florida International University
	Introduction & Overview	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**
10:35am	**Jacob Dombrowski** Internal and External Loading Effects on Water Column P in Treatment Wetlands for Everglades Restoration	**Paige Kleindl** The Role of Benthic Periphyton Mats in Regulating Macrophyte Communities in a Marl Prairie Wetland	**Sarah Bellmund** CERP: BBCW to BBSEER, Modeling World to Real World and Back	**David Krabbenhoft** Everglades Mercury Science: Toward an Internally Consistent Paradigm	**David Essian** Summarizing Prey Use and Selectivity by Wading Birds in Four Major Wetland Types in the Everglades
10:50am	**Jessica Vaccare** Rooted Vegetation Mobilizes Phosphorus from Muck Soils: Results from Mesocosm Studies	**Brittany Mason** Predicting Dispersal Paths of the Invasive Argentine Black and White Tegu Using Circuit Theory	**Maliha Ahmed** Development of Tidal Boundary Condition for Regional Model (RSMGL) in Support of BBSEER Project	**Matthew Varonka** Sources and Temporal Trends of Sulfate in the Freshwater Everglades	**Mark Cook** What Triggers Irruptive Wading Bird Breeding Events? New Insights from Landscape-scale Foraging Patterns
11:05am	**Kevin Grace** Soil Management Opportunities to Curtail Plant Cycling of Excess Soil P for Water Quality Improvement	**Veronica Restrepo** Quantifying Post-Hurricane Regeneration of Mangrove Species Along Phosphorus Fertility Gradients in the Florida Coastal Everglades	**Walter Wilcox** Statistical Emulation of the Biscayne Bay Simulation Model	**Benjamin Peterson** Microbial and Biogeochemical Controls on Mercury Methylation in the Everglades	**Alexander Blochel** Connectivity Between Submerged Aquatic Vegetation Structures and Prey Base Fish Communities within the Coastal Mangrove Zone
11:20am	**Mike Jerauld** Connections Between Plant-Available Legacy Soil P, Internal Loading and Treatment Performance in Full-Scale STAs	**Himadri Biswas** Spatial Distribution Pattern of *Rhizophora mangle* in Southeast Saline Everglades	**Jaime Graulau-Santiago** Application of BBSM Model for Nearshore Salinities in Support of the BBSEER Project	**Bryce Cook** Laboratory Assessment of Sea-Level Rise Effects on Mercury Methylation in Coastal Everglades Wetlands	**Jennifer Rehage** Temperature and Flooding Duration Mediate the Structure of a Marsh Prey Subsidy in the Coastal Everglades
11:35am	**John Juston** Integration of Internal Loading Rates from Legacy Soil P Improves STA Numerical Simulation	**Paisley Samuel** Effects of Cyanobacteria Harmful Algal Blooms on Microbial Communities Within Lake Okeechobee, FL, USA	**Khandker Ishtiaq** BISECT Calibration to Develop Salinity Performance Measures and Integration with RSM-GL to Support Evaluation of BBSEER Alternatives	**Sarah Janssen** Decadal Trends of Mercury Cycling and Bioaccumulation within Everglades National Park	**Sergio Balaguera-Reina** Linking American Alligators with Marsh Productivity, an Empirical Framework
11:50am	**Discussion**	**Discussion**	**Discussion**	**Discussion**	**Discussion**
12:00pm-1:30pm	**Lunch Buffet & Installation of Session Two Posters**				

PRESENTATION NOTES

Session No.	Speaker Name / Notes

continued on next page

Wednesday, April 19, 2022 (continued)					
Concurrent Sessions [1:30pm-3:00pm]					
	Great Cypress	**Royal Poinciana**	**Ibis**	**Egret**	**Sandpiper**
	Session 21	**Session 22**	**Session 23**	**Session 24**	**Session 25**
Session Title	**Innovative Research in the Everglades STAs to Understand Internal Wetland Processes**	**Student Stewards of the Everglades: Contributions to Federally Funded Research and Collaborations (Part 2 of 2)**	**Kissimmee River Restoration: Progress and Challenges**	**Decompartmentalization Physical Model**	**Updating our Knowledge of Trophic Interactions and Prey Production in the Everglades. (Part 2 of 2)**
Moderator	**Kathleen Pietro** South Florida Water Management District	**Paige Kleindl** Florida International University	**Steve Bousquin** South Florida Water Management District	**Fred Sklar** South Florida Water Management District	**Mark Cook** South Florida Water Management District
	Introduction & Overview	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**
1:35pm	**Patrick Inglett** Soil Accretion in the STAs: Relationships with Vegetation/Water Quality and its Role in Benthic P Stability	**Jessika Reyes** Landward Creek Expansion in the Southern Everglades and Distribution of Halophytic Communities	**Steve Bousquin** Kissimmee River Restoration: Progress and Challenges	**Lisa Jackson** Litter Decomposition along a Restored Flow Gradient	**Michelle Peterson** Modeling Trophic Linkages: Dry Season Prey Concentrations of Aquatic Fauna and Wading Bird Nesting
1:50pm	**Joao Henrique Fernandes Amaral** Organic Carbon and Nutrient Turnover in Treatment Wetlands: Insights from a Multiple Biogeochemical Approach	**Nicole Stickland** Evaluating the Effects of Habitat Stratification on Sampling Bias for Estimations of Aquatic Animal Populations	**David Anderson** Challenges to Hydrologic Restoration of the Kissimmee River During a Twenty-Year Interim Period	**Sue Newman** Prescribing Flow-Preliminary Results from an In-Situ Flume within the Everglades	**Jordan Massie** Getting the Timing Right: Matches and Mismatches for Consumers and Prey Subsidies in the Everglades
2:05pm	**Mark Barton** Faunal Effects on Phosphorus Dynamics in the Everglades STAs: Part 1 (Mechanisms)	**Ximena Mesa** Environmental Heterogeneity and Spatial Patterns of Woody Vegetation in the Greater Everglades	**Brent Anderson** Assessment of River Channel Changes Following the Reintroduction of Flow to the Kissimmee River	**Colin Saunders** Model-based Design Recommendations to Reduce Canal Flow in the Blue Shanty Flowway	**Marco Fernandez** Flowing Water Effects on Aquatic Animal Communities: Insights from the Decompartmentalization Physical Model
2:20pm	**Janelle Goeke** Faunal Effects on Phosphorus Dynamics in the Everglades STAs: Part 2 (Surveys and Scaling)	**Carlos Pulido** Assessing Plant Taxonomic and Functional Diversity along Hydrologic Gradients: An Integrated Field and Remote Sensing Approach	**Darryl Marois** Evaluation of Dissolved Oxygen Trends and Potential Drivers of Hypoxia Within the Kissimmee River Restoration Area	**Liqiong Zhang** Vegetative Flow Simulation in Water Conservation Area-3A and Flow Uniformity Evaluation	**Jerry Lorenz** Degradation of Roseate Spoonbill Foraging Quality by Introduced Mayan Cichlids has been Exacerbated by SLR
2:35pm	**Kathleen Pietro** What Can the Trends in Periphyton Enzyme Activity within the STAs Tell Us?	**Kenny Anderson** Peat and Marl Dissolved Organic Matter Vary Among Wetlands with Nutrient Enrichment and Restored Hydrology	**Lawrence Spencer** Mapping Kissimmee River Floodplain Vegetation: A New Approach Using Machine Learning Algorithms	**Christa Zweig** Flow Restoration in a Complex Landscape	**Nathan Dorn** A Novel Invasive Predator Threatening Aquatic Prey Production in the Everglades
2:50pm	**Discussion**	**Discussion**	**Discussion**	**Discussion**	**Discussion**
3:00pm-3:30pm	**PM Refreshments & Networking Break in Poster Hall**				

PRESENTATION NOTES

Session No.	Speaker Name / Notes

continued on next page

Wednesday, April 19, 2022 (continued)

Concurrent Sessions [3:30pm-5:00pm]

	Great Cypress	Royal Poinciana	Ibis	Egret	Sandpiper
	Session 26	**Session 27**	**Session 28**	**Session 29**	**Session 30**
Session Title	**Integrating Stormwater Treatment Area Research with Simulation Models**	**Novel Approaches to CyanoHAB Monitoring in Turbid Inland Waters**	**Combating the Shrubification of Florida's Freshwater Wetlands**	**High-resolution Models and Datasets for Historical and Projected Climate of Southern Florida**	**Water, Energy, and Biogeochemical Cycling in the Everglades – From Fluxes to Disturbances, Synthesis and Innovations**
Moderator	**Richard James** South Florida Water Management District	**Cassondra Armstrong** South Florida Water Management District	**Shawn Clem** Audubon Florida	**John Stamm** U.S. Geological Survey	**W. Barclay Shoemaker** U.S. Geological Survey
	Introduction & Overview	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**
3:35pm	**Richard James** Using Water Quality Models to Support Design and Management of Stormwater Treatment Areas	**Danielle Taylor** Considerations for Using Drone Technology for Estuarine Harmful Algal Bloom (HAB) Monitoring	**Shawn Clem** Challenges and Successes Restoring Marsh and Wet Prairie Habitat at Audubon's Corkscrew Swamp Sanctuary	**Thomas Frazer** Research Directions of the Florida Flood Hub for Applied Research and Innovation	**Michael Osland** Sea-level Rise Thresholds for Wetland Loss and Transformation: When Could Tipping Points Be Crossed?
3:50pm	**Silong Lu** The Effect of Vertical Groundwater Seepage on Outflow TP Concentrations in Everglades Stormwater Treatment Areas	**Greg Toolan** What Role Can UAS Play in the Effort to Detect, Monitor, and Prevent Harmful Algal Blooms: Integrating UAS into the South Florida Water Management District's Current Program	**Jacob Zetzer** Quantifying Vegetation and Wildlife Response to Mechanical Removal of Native Wetland Shrubs	**Ana Carolina Coelho Maran** Incorporating Future Rainfall Estimates Into the Water and Climate Resilience Adaptation Planning	**Laura Feher** A Regional Synthesis of Soil Elevation Change in the Coastal Wetlands of the Greater Everglades
4:05pm	**Christopher Buzzelli** Modeling Phosphorus Biogeochemistry in Emergent and Submerged Habitats of the Everglades Stormwater Treatment Areas	**Regina Hanlon** Drone-based Water Sampling and Characterization of Three Freshwater Harmful Algal Blooms in the United States	**Jean McCollom** Vegetation Response to Mechanically and Chemically Treating Willows Invading Marshes in Southwest Florida's Corkscrew Watershed	**Jason Bellino** High-Resolution Weather Reanalysis and Projected Changes in Extreme Rainfall Events in South Florida	**Barclay Shoemaker** Carbon Cycling Research with Digital Imagery in Greater Everglades Forested Wetlands
4:20pm	**Steven Bartell** Adapting an Aquatic Food-Web/Ecosystem Model to Simulate P Dynamics in Stormwater Treatment Area 2	**Thomas Behlmer** Surveying Estuarine Responses to Freshwater Inflows: An Algal Bloom Monitoring Tool in the Northern Estuaries	**Kimberli Ponzio** Using Herbicides to Control *Salix caroliniana* and Restore Marshes in the St. Johns River Floodplain	**Ben Kirtman** High-Resolution, Global Ocean-Atmosphere Models of Historical and Projected Climate	**Caiyun Zhang** Applying Machine Learning to Map Greenhouse Gases and ET in the Everglades Wetlands
4:35pm	**Discussion**	**Cassondra Armstrong** Linking Technologies to Maximize Detection and Measurement of Harmful Algal Blooms	**Penny Cople** Incorporating Land Management Strategies in the Mitigation Bank Regulatory Framework for Management of *Salix caroliniana*	**Christopher Madden** High-resolution Models and Datasets for Historical and Projected Climate of Southern Florida	**Sparkle Malone** Mangrove Forests Are an Unlikely Source of CH_4 to the Atmosphere in the Subtropical Florida Everglades
4:50pm		**Discussion**	**Discussion**	**Discussion**	**Discussion**
5:00pm-7:00pm	**Poster Session Two and Networking Reception**				

PRESENTATION NOTES

Session No.	Speaker Name / Notes

continued on next page

Thursday, April 20, 2023

7:30am-5:00pm	**Conference Registration Open**				
7:30am-8:30am	**Morning Refreshments in Poster Hall**				
Concurrent Sessions [8:30am-10:00am]					
	Great Cypress	**Royal Poinciana**	**Ibis**	**Egret**	**Sandpiper**
	Session 31	**Session 32**	**Session 33**	**Session 34**	**Session 35**
Session Title	**Building Resiliency in Flood Protection in South Florida Region (Part 1 of 2)**	**Python Science in the Greater Everglades (Part 1 of 2)**	**Modeling Efforts to Address Challenges in Greater Everglades Ecosystem**	**Getting the Water Right - Revisited**	**Water Quality Implication for Restoration**
Moderator	**Ana Carolina Coelho Maran** South Florida Water Management District	**Kristen Hart** U.S. Geological Survey	**Fahmida Khatun** National Park Service, Department of the Interior	**Jud Harvey** U.S. Geological Survey	**Donatto Surratt** Everglades National Park
	Introduction & Overview	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**
8:35am	**Akintunde Owosina** C-8 and C-9 Watersheds Flood Protection Level of Service - Adaptation and Mitigation Planning Study	**Jacquelyn Guzy** Burmese Pythons in Florida: A Synthesis of Biology, Impacts, and Management Tools	**Shimelis Dessu** Conceptual Modeling Framework to Link Water Management, Sea-level Rise, and Salinity in Central Florida Bay	**Jay Choi** Biophysically-based Simulations of Sheet Flow at the Decomp Physical Model (DPM) to Assess Restoration Challenges	**Jose Otero** Update on the Implementation of Restoration Strategies
8:50am	**Matahel Ansar** Application of Storm Surge Models to Resiliency Studies in South Florida	**Andrea Currylow** Invasive Python Size Descriptions and Reproductive Phenology in Florida	**Angela Montoya** Improvements for the Biscayne Aquifer Model of Urban Miami-Dade County, Including Effects due to Biscayne Bay Southern Everglades Ecosystem Restoration (BBSEER)	**Clay Brown** Natural System Model Enhancements in Support of a Restored Everglades Landscape	**Paul Julian** Unintended Consequences of Hydrologic Restoration, Water Quality Considerations for Picayune Strand Restoration Project
9:05am	**Stephanie Long-Marquez** C2, C3W, C4, C5, and C6 Watersheds Flood Protection Level of Service for Current and Future SLR Conditions	**Christina Romagosa** Prey Species Composition, Richness, and Diversity of Burmese Python Diet in Florida	**Lichun Zhang** HEC-RAS 2D Analysis for Impacts of L-28S Culverts in WERP Region 4	**Matt Cohen** Insights on Pattern and Hydrological Process in the Ridge-Slough Landscape	**Dilip Shinde** Water Quality Dynamics at S12A Discharge Structure on the Western Edge of Everglades National Park
9:20am	**Rajendra Sishodia** Broward County Hydrological Modeling Efforts: Planning for Resilience	**Kristen Hart** Python Survival and Activity Patterns	**Jenifer Barnes** Optimization Modeling for the Lake Okeechobee System Operating Manual (LOSOM)	**Jing Yuan** Remote Sensing of Vegetation Biomass to Predict Changing Flow Resistance for Improved Hydrological Modeling	**Yuheng Qiu** Characterization of Canal and Marsh Chemical Composition within the Everglades Basin
9:35am	**Katharine Mach** Fine-scale, Interactive Collaborative Flood Modeling for Inclusive and Time-Efficient Climate Adaptation	**Amy Yackel Adams** Evaluating the Use of Removal and Abundance Models to Inform Invasive Burmese Python Management	**Jie Zeng** Application of 2D HEC-RAS Model to Kissimmee River Restoration Project	**Wasantha Lal** How Flow Resistance Modeling Can Improve Water Management	**Andrea Nocentini** Rehydration Drives Landscape-Scale Shifts in Wetland Vegetation Relative to Patch-Scale Effects of Chemistry and Fire
9:50am	**Discussion**	**Discussion**	**Discussion**	**Discussion**	**Discussion**
10:00am-10:30am	**AM Refreshments & Networking Break in Poster Hall**				

PRESENTATION NOTES

Session No.	Speaker Name / Notes

continued on next page

Thursday, April 20, 2023 (continued)					
Concurrent Sessions [10:30am-12:00pm]					
	Great Cypress	**Royal Poinciana**	**Ibis**	**Egret**	**Sandpiper**
	Session 36	**Session 37**	**Session 38**	**Session 39**	**Session 40**
Session Title	**Building Resiliency on Flood Protection in South Florida Region (Part 2 of 2)**	**Python Science in the Greater Everglades (Part 2 of 2)**	**Resiliency and Recovery of Tree Islands: Successes from Restoration and Mitigation Efforts**	**Florida Bay Connections: Cross-boundary Integration and Synthesis in the Southern Everglades**	**Role of Computational Fluid Dynamics (CFD) in Everglades Restoration**
Moderator	**Ann Springston** Ardurra Group, Inc.	**Kristen Hart** U.S. Geological Survey	**Sharon Ewe** Stantec, Inc.	**Theresa Strazisar** South Florida Water Management District	**Seyed Hajimirzaie** South Florida Water Management District
	Introduction & Overview	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**
10:35am	**David Colangelo** South Florida Water Management District Sea Level Rise And Flood Resiliency Plan, 2023	**Maggie Hunter** Molecular Investigation of the Invasive Burmese Python in the Greater Everglades Ecosystem	**Susanna Stofella** Flooding and Planting Density Shape Forests in an Experimental Everglades Landscape: Lessons for Forest Restoration	**Courtney Moore** Coastal Community Transitions Across a Salinizing Coastal Freshwater Short-Hydroperiod Wetland in the Southeastern Everglades: Implications for Ecosystem Structure and Function	**George Constantinescu** Numerical Simulations of Pump Intake Flows: Toward a Numerically-Based Design of Pump Intakes
10:50am	**Carol Ballard** Flood Protection Level of Service Assessment for C-111, Model-Land, and L-31NS Watersheds in MD County	**Jacob Orgorek** Mercury in Everglades Pythons	**Kristin Vaughan** Two Decades of Change In WCA-3 Tree Islands: Effects of Hydrology and Natural Disturbance	**Julian Alwakeel** Determining Groundwater Input, Sources and Amounts into Everglades Estuarine Lakes	**Kelin Hu** Hydrodynamic and Water Quality Modeling in Biscayne Bay
11:05am	**Nicole Iadevaia** Moving Water to Restore Rivers Wetlands and Estuaries in Southwest Florida and the Caloosahatchee Basin	**Jeremy Dixon** Python Research and Management to Protect Endangered Species in the Florida Keys	**Elli Danielson** *Lygodium microphyllum* Populations and Control In WCA-3	**Rolando Santos** Shift in Trophic Niche Characteristics of Common Snook and Atlantic Tarpon in Everglades Coastal Lakes	**Benjamin Israel Devadason** CFD Modeling – The Greater Everglades Pump Station Designer's Best Friend
11:20am	**Franciso Pena Guerra** Understanding the Impacts of Future Extreme Rainfall and Compound Flooding in Broward and North Miami	**Ian Bartoszek** Utilization of Scout Snakes as a Primary Tool for Burmese Python Removal in Southwestern Florida	**Marcel Bozas** Mammalian Distributions and Spatiotemporal Use of Everglades Tree Islands	**John Carroll** Impacts of Submarine Groundwater Discharge on Seagrass in Florida Bay	**Zubayed Rakib** Application of CFD to Restoration Hydraulics in Everglades Restoration Project
11:35am	**Katherine Loesser** Spatiotemporal Comparisons of Hydrologic Model Outputs to Inform Water Operations in the Everglades	**Mark Sandfoss** Big Cypress National Preserve Scout Snake Program, Where We've Been and Where We're Going	**Marsha Ward** Wildlife Utilization of Tree Islands in Everglades and Francis S. Taylor Wildlife Management Area	**Mingshun Jiang** Development of a Physical-Biogeochemical Model for Predicting HABs and Water Quality in Greater Florida Bay	**Seyed Hajimirzaie** Applications of CFD Model for Refined Spreader Canal Hydraulics in STA 3/4
11:50am	**Discussion**	**Discussion**	**Discussion**	**Discussion**	**Discussion**
12:00pm-1:30pm	**Lunch Buffet**				

PRESENTATION NOTES

Session No.	Speaker Name / Notes

continued on next page

Thursday, April 20, 2023 (continued)					
Concurrent Sessions [1:30pm-3:00pm]					
	Great Cypress	**Royal Poinciana**	**Ibis**	**Egret**	**Sandpiper**
	Session 41	**Session 42**	**Session 43**	**Session 44**	**Session 45**
Session Title	**National Academies' 2022 Review of Everglades Restoration Progress**	**Cape Sable Seaside Sparrow Science**	**Restoring Biscayne Bay: Stepping Back from the Tipping Point?**	**Innovative Developments, Applications, and Next Steps: The Everglades Depth Estimation Network (EDEN)**	**South Florida Coastal Wetland Response to Accelerating Sea-level Rise and Hydrologic Restoration**
Moderator	**Stephanie Johnson** National Academies	**Stephanie Romañach** U.S. Geological Survey	**Sharon Ewe** Stantec, Inc.	**Saira Haider** U.S. Geological Survey	**Randall W. Parkinson** Florida International University
	Introduction & Overview	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**	**Introduction & Overview**
1:35pm	**Philip Dixon** Restoration Progress	**Tylan Dean** What Have We Learned About the CSSS in the Last 30 Years of Study?	**Valentina Caccia** Spatial Distribution and Temporal Variability of Physical Parameters in Biscayne Bay	**Eric Swain** Refinements and Advancements: 17 Years of the Everglades Depth Estimation Network (EDEN)	**Joseph Smoak** Past and Present Accretion, Accumulation, and Elevation as Key to the Future of Mangrove Ecosystems in Southwestern Florida
1:50pm	**Alan Steinman** Stormwater Treatment Area Water Quality and Comprehensive Everglades Restoration Plan Progress	**Marisa Takada Martinez** Population Trends of the Cape Sable Seaside Sparrow Over Decades of Monitoring in the Everglades	**Venetia Brigg-Gonzalez** American Crocodiles in Biscayne Bay	**Dong Yoon Lee** Assessing Challenges and the Potential for Wetland Restoration Using a Datalogger Network	**Tiffany Troxler** Investigating Adaptive Capacity of Salinizing Coastal Wetlands in Natural and Urban Environments
2:05pm	**Denise Reed** Restoration in the Context of Climate Change	**Jay Sah** Long-Term Vegetation Dynamics in Cape Sable Seaside Sparrow Habitat: Lessons Learned and Implications for Everglades Restoration	**Bahram Charkian** Restoration Benefits Observed from the Biscayne Bay Coastal Wetlands Project	**Jeffrey Sommer** System-Wide Shifts in Standing Stock Compositions Respond to System-Wide Drying Patterns	**Kevin Montenegro** Increasing Marine Hydrologic Connectivity Influences Physical and Biogeochemical Processes in Coastal Mangrove Soils
2:20pm	**Denice Wardrop** Science Plan to Support Restoration of the South Florida Ecosystem	**Caitlin Beaver** Genetic Analysis of Federally Endangered Cape Sable Seaside Sparrow Subpopulations in the Greater Everglades, USA	**Todd Crowl** Back to The Future: What Do We Need to Avoid the Tipping Point	**Jelena Vukomanovic and Katherine E. Jones** Using Water Surfaces and Fuel Types to Automate Daily Fire Risk Maps in South Florida	**Rene' Price** Hydraulic Conductivity of Everglades Peats
2:35pm	**Discussion**	**Alan Mock** Wet-Season Hydrology Predicts Mercury Concentrations with Effects on Breeding Success of Cape Sable Seaside Sparrow	**Irela Bague** A Collaborative Approach to Recovery Efforts in Biscayne Bay: The Role of Leadership and Governance in Guiding Policy	Discussion on Future Directions of the Everglades Depth Estimation Network (EDEN)	**Kara Radabaugh** Mangrove Mortality and Resilience Following Hurricane Ian in Southwest Florida
2:50pm		**Discussion**	**Discussion**	**Discussion**	**Discussion**
3:00pm-3:30pm	**PM Refreshments & Networking Break in Poster Hall**				

Thursday, April 20, 2023 (continued)	
3:30pm-4:30pm	**Closing Plenary** **Moderator** **Dr. Nick Aumen**, Conference Chair, and Regional Science Advisor – South Florida, U.S. Geological Survey, Davie, FL **Keynote Speaker** **Shannon A. Estenoz**, Assistant Secretary for Fish and Wildlife and Parks, U.S. Department of the Interior, Washington, DC **Keynote Presentation** "Scientists Listening to Managers, and Managers Listening to Scientists – Improving the Dialogue"
4:30pm-5:30pm	**Exhibitors and Poster Session Two Presenters Remove Displays – Conference Concludes**

PRESENTATION NOTES

Session No.	Speaker Name / Notes

POSTER DISPLAY INFORMATION

Poster presentations play a key role in the exchange of information. Considerable time is dedicated to viewing them, giving scientists, policy makers, planners, practitioners, and managers valuable opportunities to interact and share details of their work, successes and lessons learned.

Posters are divided into two sessions. Consult the poster directory to confirm the session assignment for individual poster presentations.

The agenda allows for ample time to view posters, network, and have discussions. Please take time to explore posters, review displays and visit with posters presenters during the early morning, mid-day and afternoon and especially during the poster session.

Poster Session One

Scan to view Session One Posters in numerical order:

Poster Installation:	Monday, April 17, 4:00pm–7:00pm *(You may also set up Tuesday morning.)*
Formal Poster Session:	Tuesday, April 18, 5:00pm–7:30pm
5:30pm–6:15pm	Presenters at Odd Numbered Boards* to stand by their posters.
6:15pm–6:30pm	Prize Drawing *(Must be present to win.)*
6:30pm–7:15pm	Presenters at Even Numbered Boards* are asked to stand at their posters.
Poster Removal:	Wednesday, April 19, 10:00am–10:30am *(During mid-morning break.)*

Poster Session Two

Scan to view Session Two Posters in numerical order:

Poster Installation:	Wednesday, April 19, 12:00pm–1:30pm *(During lunch only; not before then.)*
Formal Poster Session:	Wednesday, April 19, 5:00pm–7:30pm
5:30pm–6:15pm	Presenters at Odd Numbered Boards* to stand by their posters.
6:15pm–6:30pm	Prize Drawing *(Must be present to win.)*
6:30pm–7:15pm	Presenters at Even Numbered Boards* are asked to stand at their posters.
Poster Removal:	Thursday, April 20, 4:30pm–5:00pm *(Immediately following closing keynote.)*

*As a courtesy to the presenter before/after you, please only stand at your poster during the assigned session. Posters are divided into two sessions. Consult the poster directory to confirm your session assignment.

Poster display boards will be dismantled by the vendor Thursday evening after the closing address. Organizers are not responsible for lost posters discarded by the board vendor. Thank you.

POSTER DIRECTORY

(In alphabetical order by presenter last name)

Poster #	First Name	Last Name	Affiliation	City	ST	Abstract Title	Poster Session
13	James	Beerens	South Florida Water Management District	West Palm Beach	FL	Supporting Ecological Functions in South Florida with the Minimum Flows and Levels Program	One
9	Kathleen	Boston	U.S. Geological Survey	Reston	VA	Monitoring Coastal Change on Jim Foot Key in Everglades National Park, FL with SAR Technology	Two
34	Laura	Brandt	USFWS	Davie	FL	Trends in American Alligator Pods in Arthur R. Marshall Loxahatchee National Wildlife Refuge 1998-2021	One
40	Mary	Brown	U.S. Geological Survey	Gainesville	FL	Fish Slam: Ten Years of Collaborative Non-native Fish Monitoring	One
31	Edward	Castaneda	Florida International University	Miami	FL	Hurricane Impacts on Structural Development and Carbon Dynamics in Riverine Mangroves of the Florida Everglades	Two
30	Stephanie	Castellano	University of Florida	Gainesville	FL	Incorporating Sea Level Rise into Everglades Restoration Planning	One
42	Nicholas	Castillo	Florida International University	Miami	FL	Drugs in our Flats: Exposure of South Florida Bonefish to Pharmaceuticals	One
19	Katherine	Castrillon	Florida International University	Miami	FL	Rehydrating an Urban Forested Watershed: Tree Response to Flow During the First Decade	One
43	Sean	Charles	East Carolina University	Wanchese	NC	Everglades as Resting Grounds for Passive and Active Data Fusion: Improvements to Global Budgets and Regional Processes	One
15	Chang Jae	Choi	University of Florida, FLREC	Davie	FL	Comparative Genomics of Pathogenic and Non-Pathogenic Strains of *Labyrinthula sp.*	One
23	Tasso	Cocoves	U.S. Army Corps of Engineers	Jacksonville	FL	Informing Everglades Restoration: From Monitoring and Assessment to Evaluation Tools	One
18	Jenna	Cole	University of Florida	Davie	FL	Factors Influencing Body Condition of Argentine Black and White Tegus *(Salvator merianae)* in Southern Florida	Two
11	Timothy	Collins	Florida International University	Miami	FL	The Diversity and Distribution of Non-Native Flatworms and a Ribbon Worm in South Florida	Two
28	Xavier	Comas	Florida Atlantic University	Boca Raton	FL	Drone-based Ground-penetrating Radar Measurements to Characterize Carbon Dynamics of Peat Soils in the Everglades	Two
12	Raelene	Crandall	University of Florida	Gainesville	FL	Fire and Flooding Interact to Affect Survival of *Croton linearis*, a Rare Pine Rockland Plant	Two
45	Laura	D'Acunto	U.S. Geological Survey	Gainesville	FL	The Impact of Uncertainty on Model Outcomes Used for Everglades Restoration Planning	One
10	Wesley	Daniel	U.S. Geological Survey	Gainesville	FL	What the Early Detection and Rapid Response Information System Means to the Everglades and Florida	Two
16	Stephen	Davis	The Everglades Foundation	Palmetto Bay	FL	The Everglades Handbook: Understanding the Ecosystem – its 40-year Evolution	One

continued on next page

Poster #	First Name	Last Name	Affiliation	City	ST	Abstract Title	Poster Session
4	Maite	De Maria	U.S. Geological Survey	Gainesville	FL	Transcriptomics Analysis of Glyphosate and Perfluorooctanesulfonic Acid Effects (PFOS) on the Immune System of Florida Manatees	One
22	Donald	DeAngelis	U.S. Geological Survey	Davie	FL	Experiment and Mathematical Model of Control of Water Hyacinth	One
33	Jessica	Dell	U.S. Army Corps of Engineers	Jacksonville	FL	Biscayne Bay and Southeastern Everglades Ecosystem Restoration: Performance Measure Target-Setting Informed by Sea Level Rise	Two
35	Mat	Denton	U.S. Geological Survey	Gainesville	FL	Isotopic Analysis of American Alligators *(Alligator mississippiensis)* Reveals Notable Intraspecific Niche Plasticity Throughout the Everglades	One
41	Cody	Eggenberger	Florida International University	Miami	FL	Movement Patterns and Habitat Selection of Common Snook and Atlantic Tarpon in the Coastal Everglades	One
41	Marissa	Figueroa	Florida International University/ Rookery Bay NERR	Naples	FL	Investigating the Influence of Rehydration on Soil Carbon Flux in Rookery Bay NERR Mangrove Forest	Two
48	Nicholas	Gonzalez	Miccosukee Tribe of Indians of Florida	Miami	FL	Using Trail Cameras to Estimate Relative Abundance Indices of Wildlife Across Miccosukee Tribal Lands	Two
47	Saira	Haider	U.S. Geological Survey	Davie	FL	Lessons Learned: Increasing Inclusivity with the Everglades Tree Island Indicator (ETrii)	One
9	Taylor	Hancock	University of South Florida/Florida Gulf Coast University	Fort Myers	FL	Elevated Hydrogen Peroxide Forecasts Cyanobacterial Blooms: A Gene Expression Connection	One
37	Dennis	Hanisak	FAU Harbor Branch	Fort Pierce	FL	Addressing the Emerging Environmental Issue of Coastal Acidification in Florida's Estuaries: The Indian River Lagoon Observatory Network of Environmental Sensors (IRLON)	Two
15	Madison	Harman	University of Florida	Gainesville	FL	Diet Composition of Invasive Argentine Giant Tegus *(Salvator merianae)* in Miami-Dade and Charlotte Counties, FL	Two
35	Young Gu	Her	University of Florida	Homestead	FL	Impacts of Climate Change and Sea Level Rise on Southeast Florida's Groundwater Resources	Two
17	Myranda	Hernandez	SOFTEL- Florida International University	miami	FL	Distribution of C_3 and C_4 Plants Along Hydrological Gradient in the Everglades, Florida	One
30	Samantha	Hormiga	Florida International University	Miami	FL	Coastal Carbon Flux: Periphyton Contributions and Diatom Indicators	Two
38	Hunter	Howell	University of Miami	Coral Gables	FL	The Ecology of the Greater Siren and the Two-Toed Amphiuma in the Everglades	One
29	Md Rajeun	Islam	Florida Atlantic University	Boca Raton	FL	Laboratory-based Airborne Ground-Penetrating Radar Measurements to Identify Hot Spots for Gas Accumulation in the Everglades	Two
42	Richard	James	South Florida Water Management District	West Palm Beach	FL	The Restoration Strategies Science Plan	Two
5	Peter	Kalla	United States Environmental Protection Agency	Athens	GA	Interacting Contaminants Can Influence Mercury Bioaccumulation in the Everglades Marsh	One

Poster #	First Name	Last Name	Affiliation	City	ST	Abstract Title	Poster Session
10	Andrew	Kamerosky	Applied Ecology Inc	Melbourne	FL	Remote Sensing of HABs in the Indian River Lagoon, FL: UAS Hyperspectral to Satellite Multispectral	One
31	Thomas	Kelly	Miccosukee Fish & Wildlife	Fort Lauderdale	FL	Passive Acoustic Monitoring of Vespertilionid and Molossid Bats on Miccosukee Tribal Lands	One
3	Samuel	Kent	Florida International University	Miami	FL	Horticultural Nurseries-based Pollution Dynamics and Apportionment in Canals of South Miami Dade, Florida	One
1	Marguerite	Koch	Florida Atlantic University	Boca Raton	FL	Linkages Between Seagrass Tissue O_2 Dynamics and Ecosystem Oxidation and Feedbacks are Revealed using Microsensors In Situ	Two
24	Kurt	Kowalski	U.S. Geological Survey	Ann Arbor	MI	Collaborations and Landscape-scale Adaptive Management of Invasive *Phragmites australis*: Insights from the Great Lakes	Two
6	Michael	Kratz	Florida Gulf Coast University	Fort Myers	FL	QT-AMP: Sequencing PCR Amplicons from Quanti-Tray Wells to Analyze Enterococci Communities	One
14	Savannah	Lacy	U.S. Army Corps of Engineers Jacksonville District	Jacksonville	FL	How Operational Flexibility Replenished Submerged Aquatic Vegetation on Lake Okeechobee in 2019	One
38	Lukas	Lamb-Wotton	Florida International University	Miami	FL	Assessing Vulnerability of Everglades Coastal Peat Marsh: A Framework for Local-to-Regional Scale Evaluation	Two
21	Jacob	Larsson	Florida Fish and Wildlife Conservation Commission	Sunrise	FL	Woody Vegetation Mechanical Treatment: Restoring the Sawgrass Marsh	Two
13	Shelby	LeClare	University of Florida	Gainesville	FL	Effects of the Invasive Burmese Python on the Everglades Food Web	Two
7	Dakota	Lewis	University of Florida	Gainesville	FL	Freshwater Discharge Disrupts Linkages Between the Environment and Estuarine Fish Community	Two
22	Yuanming	Lu	University of Florida	Gainesville	FL	Micro-Scale Spatial Patterns of Plant Invasion Dynamics and Its Controlling Efficiency	Two
23	Michael	Manna	South Florida Water Management District	West Palm Beach	FL	Reconnecting Everglades Vegetation Communities and Determining Effective Maintenance Control of Cattail	Two
19	Brittany	Mason	University of Florida	Davie	FL	Factors Influencing Movement Patterns of the Invasive Argentine Black and White Tegu *(Salvator merianae)*	Two
16	Kelly	McCaffrey	University of Florida	Davie	FL	Body Condition Index Validation in the Argentine Black and White Tegu *(Salvator merianae)*	Two
7	Christopher	McVoy	South Florida Engineering & Consulting	Lake Worth,	FL	Temperature and Dissolved Oxygen Profiles in an Everglades Slough	One
37	Alex	Meinders	Audubon Florida	Naples	FL	Spatial and Temporal Trends in Mammal Communities in an Ecologically Important Western Everglades Sanctuary	One
39	Tyler	Michels	Miccosukee Tribe of Indians of Florida	Miami	FL	Investigating Breeding Status and Distribution of Eastern Black Rail *(Laterallus jamaicensis)* on Miccosukee Tribal Lands	One

continued on next page

Poster #	First Name	Last Name	Affiliation	City	ST	Abstract Title	Poster Session
11	Melissa	Nasuti	U.S. Army Corps of Engineers	Jacksonville	FL	2020 Combined Operational Plan Biennial Report: Connecting the Dots Between Operations, Monitoring, and Future Planning	One
18	Samuel	Neely	Florida International University	Miami	FL	Establishing Modern Peat Analogs to Decipher Mangrove Sub-habitats from Historical Peats	One
21	Danielle	Ogurcak	Florida International University	Miami	FL	Mangrove Forest Recovery in Rookery Bay National Estuarine Research Reserve Five Years following Hurricane Irma	Two
8	Ikechukwu	Onwuka	Florida International University	Miami	FL	Particulate and Phosphorus Dynamics in the Water Column and Sediments of Greater Everglades Ecosystem Canals	One
2	William	Orem	U.S. Geological Survey	Reston	VA	Lignin Phenols as Markers of Seagrass History in Florida Bay Sediments	Two
43	Melinda	Paduani	Florida International University	Miami	FL	Microplastic Sequestration by Mangroves in the L-31E Flow-way of Biscayne Bay	Two
36	Rajendra	Paudel	South Florida Natural Resources Center	Homestead	FL	Everglades Hydrologic Response to Future Climate Change	Two
14	Adam	Pérez	Cherokee Nation System Solutions contractor in support of the U. S. Geological Survey	Gainesville	FL	Development of an Environmental DNA CRISPR Biosensor for the Detection of Invasive Burmese Pythons in the Greater Everglades	Two
24	Matthew	Petkewich	U.S. Geological Survey	Columbia	SC	Real-Time Monitoring Index to Identify Changing Salinity Conditions Related to Coastal Environment Disturbance Events	One
3	Jennifer	Rehage	Florida International University	Miami	FL	Seagrass Seascape State, Stability, and Function in Relation to Water Quality in Biscayne Bay	Two
4	Laura	Reynolds	Conservation Concepts / Florida International University	Tallahassee	FL	Increased Phosphorous Availability Impacts Seagrasses in Biscayne Bay, Implications for Water Quality Management and Biscayne Bay Southeast Everglades Restoration (BBSEER) Project	Two
32	Amanda	Richey	Florida International University	Miami	FL	Hydrologic Effects on Net Ecosystem Exchange of CO_2 in the Southeastern Saline Everglades	Two
5	Jonathan	Rodemann	Florida International University	Miami	FL	Multi-scale Habitat Selection of Spotted Seatrout in an Area of Seagrass Recovery	Two
34	Stephanie	Romañach	U.S. Geological Survey	Gainesville	FL	Sea Level Rise Impacts on Priority Habitats and Species	Two
39	Deusdedith	Rugemalila	Florida International University	Miami	FL	Local and Spatial Variability in Vegetation Species Composition in Relation to Environmental Heterogeneity in the Everglades Ecosystem	Two
8	Darren	Rumbold	Florida Gulf Coast University	Fort Myers	FL	A Bayesian Network as a Decision Support Tool for Managing the Caloosahatchee River Estuary	Two
17	Daniel	Russell	University of Florida, Croc Docs	Davie	FL	Diet Analysis of Invasive Argentine Black and White Tegus *(Salvator merianae)* in Southern Florida	Two

Poster #	First Name	Last Name	Affiliation	City	ST	Abstract Title	Poster Session
28	Owen	Schneider	University of Florida	Gainesville	FL	Two Decades of Restoration Shape Rare Plant Communities Along an Elevational Gradient in South Florida	**One**
12	Jorge Rodrigo	Sedeno	U.S. Army Corps of Engineers	Jacksonville	FL	Setting the Foundations for a CERP Science Module in the Southwestern Margins of the Everglades	**One**
32	Julia	Silva Seixas	University of Georgia	Athens	GA	From the Everglades to the Cities: Trade-offs to Urban Nesting in White Ibises *(Eudocimus albus)*	**One**
20	Dylan	Sinnickson	Florida International University	Miami	FL	Modeling Slough Crayfish Populations in Response to Hydrologic Variability	**One**
44	Daniel	Slone	U.S. Geological Survey	Gainesville	FL	How Many Are Really Down There? Evaluating Electrofishing Catchability Rates for Biosurveillance of Non-native Freshwater Fishes	**One**
20	Samantha	Smith	University of Florida	Davie	FL	Using Camera Traps to Estimate Occupancy of Invasive Tegus *(Salvator merianae)* in South Florida	**Two**
46	Bethany	Stackhouse	U.S. Geological Survey	Reston	VA	Resiliency of Mangroves and Coastlines in a Changing Climate	**Two**
6	Uli	Stingl	University of Florida	Davie	FL	Endophytic Fungi Can Inhibit the Growth of the Causative Agent of Seagrass-Wasting Disease, *Labyrinthula sp.*	**Two**
25	Eric	Swain	U.S. Geological Survey	Davie	FL	Programmatically Estimating Volumetric Flow in the Everglades Depth Estimation Network (EDEN)	**Two**
33	Christina	Tilley	Florida International University	North Miami	FL	Discerning the Relationships Between Water Levels, Crayfish Populations, and White Ibis in the Western Everglades	**One**
1	Mohsen	Tootoonchi	University of Florida	Belle Glade	FL	Impact of Floating Aquatic Vegetation in Drainage Canals and Farm Phosphorus Discharges	**One**
27	Umida	Turamuratova	Florida Atlantic University	Boca Raton	FL	Exploring The Effects of Water-Table Elevation Changes In Peat Soils Across A Salinity Gradient	**Two**
29	Stephanie	Verhulst	U.S. Army Corps of Engineers	Jacksonville	FL	Updating Methods to Estimate Florida Bay Salinity for the RECOVER Southern Coastal Systems	**One**
44	Rosario	Vidales	Florida International University	Miami	FL	Leaf Functional Trait Variation in Red Mangroves of Neighboring Coastal Environments	**Two**
36	Mariaguadalupe	Vilchez	University of Florida	Gainesville	FL	A Chomp and a Slither: The Implications of the Invasive Burmese Python on American Alligator	**One**
2	Youchao	Wang	South Florida Water Management District	West Palm Beach	FL	Everglades Agricultural Area Phosphorus Source Control Program Basin Monitoring and Performance Assessment	**One**
27	Lynn	Wingard	U.S. Geological Survey	Reston	VA	Linking Modern and Sediment Core Data to Identify Potential Indicator Species for Restoration Performance Measures	**One**
40	Nathanial	Winn	Florida Atlantic University	Boca Raton	FL	Internal Oxygen Dynamics and Rhizosphere Oxidation in Tropical Seagrass, *Thalassia testudinum*	**Two**
21	Simeon	Yurek	U.S. Geological Survey, Wetland and Aquatic Research Center	Gainesville	FL	Optimal Foraging Models of Wading Birds in Seasonally-pulsed Everglades Wetlands	**One**

CONTINUING EDUCATION (CEUs & PDHs)

If you are a licensed engineer or maintain a professional license issued by a society, an association, an occupational licensing board or a department of professional regulation within your state, you may be eligible to earn Continuing Education units (CEUs) for your participation in this conference. You will need to contact the appropriate authority who manages your professional certification to verify your organization or individual state's licensing requirements, and to confirm what documentation is required. While we are not approved as an official CEU provider, your state may recognize this event as a qualified program, and you may be eligible to earn CEUs for your participation.

Certificate of Attendance

If you requested a certificate when registering, we will email you a PDF within 45 days upon conclusion of the conference. It is your responsibility to compile all necessary paperwork and provide it to the appropriate licensing board or professional organization with whom you are certified, and to confirm the program content is acceptable based on their individual standards.

Important Note

In general, one Continuing Education Unit (CEU) is defined as 10 hours of instruction. One hour is calculated as 50 minutes of face-to-face instruction. If you have any questions regarding CEU requirements as they pertain to your professional certification or license, please directly contact the appropriate licensing board within your state. The UF/IFAS Office of Conferences & Institutes and its employees are not authorized to act on your behalf or to provide consult regarding CEUs.

ADDITIONAL INFORMATION

Complimentary Internet Access

A limited amount of free, wireless internet access is available to GEER attendees in the meeting space. To access Internet in the conference center, follow these instructions on your device:

1. Connect to the network “Marriott_CONF”
2. You will be directed to the splash page (Attending Meeting) where you will enter:
   Conference Code: GEER2023
3. Click on "I agree to the terms of use"
4. Click on "Log In"

Note: The passcode is different for internet access in your guest room. Be sure to obtain the most current complimentary access code from the front desk when you check in.

Conference Message Board

A Conference Message Board is located in the pre-function area outside the main ballroom This is a physical board where conference attendees can post jobs, internships, grants, workshops, and other resources to help connect students and postdocs with opportunities.

Meeting Space for Impromptu Meetings

The Flamingo and Fairway meeting rooms have been reserved for those who wish to organize impromptu meetings with colleagues while you are gathered here at GEER. Availability is on a first-come, first-served basis. There is a sign-up sheet on the Conference Message Board in the Registration Foyer near the registration desk. Be sure to indicate the group contact name and cell number when you reserve space so we can reach you if we need to. Note: No Audio Visual (AV) equipment is provided.

Name Badge

Your name badge serves as your admission to all networking functions while attending GEER 2023, so be sure to wear it throughout the conference. Guests must also wear their name badges for entry into functions. The guest fee allows guests 18 years of age and older to attend the Welcome Social Monday and a Poster Session Networking Social Tuesday and Wednesday. Please be sure to register all guests and pay the applicable registration fees.

Morning Refreshments, Breaks & Lunches

Networking functions will be held in the Sponsor & Poster Display Area. Early morning refreshments (coffee, tea, decaf, fruit, yogurt, and light pastry items) will be available from 7:30am – 8:30am. Mid-morning breaks provide complimentary beverages, and afternoon breaks offer beverages and light snacks. A full, 90-minute lunchtime allows ample time for attendees to network and connect with colleagues. Four lunch buffet stations will be located throughout the hotel – one in the poster hall, one in the foyer outside the poster hall, one in the restaurant, and a buffet solely for vegetarian and vegans will be set up in the atrium/lobby. Note: You do not have to sit in the atrium. You are welcome to make a plate from the vegetarian buffet and sit in any location you choose. Please be sure to visit with sponsors throughout the week and thank them for their support. Please Note: Details when posters from each of two sessions will be on display are on page 56.

Cell Phones, Mobile Devices, Tablet Devices

Please mute your cell phones, tablets, and mobile devices while in all meeting rooms. Also, please mute the sound on your laptops. Please respect presenters' wishes not to share certain sensitive data on social media. Please do not photograph or share on social media.

Lost & Found

If you find a lost article, bring it to the staff at registration. If you lose an article, first check with conference registration staff. If the lost article(s) has not been turned in, check with the hotel front desk staff.

Covid Safety

Our aim is to promote a safe and inclusive meeting, and we ask all attendees to help keep our community, and those in our lives outside of symposium, healthy and well. While masking and social distancing is voluntary, we do expect all attendees to honor and respect the choices of others during the meeting.

Code of Conduct

All conference participants must agree to follow our Code of Conduct when they register. We welcome you to join, sustain, foster, and help grow our inclusive and supportive environment. The full code of conduct can be found on our conference webpage here: **conference.ifas.ufl.edu/code-conduct.html**

ACTION ITEMS

Use this page to record new ideas and names of people you would like to follow up with for future collaborations.

THANK YOU TO OUR SPONSORS

Without their generous support, this conference would not be possible.

GOLD SPONSORS

USGS science for a changing world

National Park Service

U.S. Fish & Wildlife Service

SILVER SPONSORS

Everglades Foundation

FIU Institute of Environment

South Florida Water Management District

Miccosukee Tribe of Indians of Florida

BRONZE SPONSORS

Audubon Florida

eureka water probes

U.S. Department of the Interior

US Army Corps of Engineers®

Stantec

FAU Florida Center for Environmental Studies
Charles E. Schmidt College of Science
Florida Atlantic University

In-Situ
YOUR EYES IN THE FIELD

UF|IFAS UNIVERSITY of FLORIDA

Logistics for this conference were organized and managed by the **UF/IFAS Office of Conferences & Institutes (OCI)**