Detailed Agenda

GEER 2023

Greater Everglades Ecosystem Restoration

April 17-20, 2023 | Coral Springs, FL

Data Synthesis, Integration, and Innovation

https://conference.ifas.ufl.edu/GEER

The Greater Everglades Ecosystem Restoration (GEER) science conference is designed to bring together scientists and engineers, policy makers, planners and partners actively involved in or affected by all aspects of Everglades ecosystem restoration. Participants will interact in an interdisciplinary setting to summarize and review state-of-the-art planning, management activities and science in Everglades restoration.

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 many facets of Everglades restoration, including:
- the ecological and hydrological effects of new CERP projects and a revised Lake Okeechobee operating schedule
- investigating invasive species 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 have been 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, 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.

A premier gathering, GEER is a collaborative effort and if you are working in the Everglades, you should make plans to join us!

Monday, April 17, 2023

4:00pm-6:00pm	**Conference Registration Open** 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**

Tuesday, April 18, 2023

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
10:30am	**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**	
12noon - 1:30pm	**Group Lunch Buffet**				

Tuesday, April 18, 2023

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
1:30pm	**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**				

Tuesday, April 18, 2023

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 and 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
3:30pm	**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	**Niguss Hailegnaw** 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**				

Wednesday, April 19, 2023

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**

Wednesday, April 19, 2023

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
10:30am	**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**
12noon - 1:30pm	**Lunch Buffet & Installation of Session Two Posters**				

Wednesday, April 19, 2023

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
1:30pm	**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 Strickland** 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**				

Wednesday, April 19, 2023

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
3:30pm	**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** Modeling Analysis of Algal Bloom Effects on Light and Seagrass Productivity in Florida Bay	**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**				

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
8:30am	**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**				

Thursday, April 20, 2023

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
10:30am	**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**
12noon - 1:30pm	**LUNCH BUFFET**				

Thursday, April 20, 2023

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
1:30pm	**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

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**