



February 22-23, 2024

The Indian River Lagoon Symposium (IRLS) is a multi-institutional, multi-agency effort to provide a forum for discussing Indian River Lagoon science and its application to management of the lagoon. The Indian River Lagoon Observatory (IRLO), based at FAU Harbor Branch in Fort Pierce, was established in 2011 to acquire and disseminate data and knowledge on the IRL critical to its ecological function and its sustainable management. The IRLS was launched in 2012 as the center piece of IRLO's collaborative efforts as a forum for research on the IRL and its management to narrow the gaps between research and its application.

The theme for the 2024 symposium is IRL Fish. The IRL is home to a wide variety of fish species, ranging from small forage fish to large predators. Fishing attracts anglers and tourists, contributing to the local economy, and is a cultural tradition for many communities around the Lagoon. The health of the IRL fish populations can serve as an indicator of the overall health of the lagoon. Changes in these populations can signal environmental issues such as pollution, habitat degradation, and climate change.

IRLS 2024 Steering Committee

A Steering Committee with representatives from academic, governmental, and non-profit organizations defines the goals, basic outline, and structure for the symposium; identifies potential participants; and provides guidance, logistical support, and planning for the symposium. The Steering Committee is instrumental in making the symposium a truly collaborative effort within the diverse IRL research community. The 2024 Steering Committee members are:

- Irene Arpayoglou – FDEP/Indian River Lagoon Aquatic Preserves
- Dennis Hanisak – Florida Atlantic University
- Chuck Jacoby – University of South Florida
- Elizabeth Salewski – South Florida Water Management District
- Loraé Simpson – Florida Oceanographic Society
- Holly Sweat – Smithsonian Marine Station at Fort Pierce
- Linda Walters – University of Central Florida
- Jessy Wayles – Indian River Lagoon National Estuary Program

IRLS 2024 Sponsors

Since 2012, Harbor Branch Oceanographic Institute Foundation has been the Lead Sponsor for the Indian River Lagoon Symposium. We thank Michael O'Reilly, Chair; Staci Barney Rosalia, Executive Director; and Cyndi Permenter, Director of Operations, for their support. We also thank the Indian River Lagoon National Estuary Program for its continued support.

HARBOR BRANCH OCEANOGRAPHIC INSTITUTE
FOUNDATION



Indian River Lagoon Symposium 2024

IRL Fish

Program Schedule

(Note: The presenting author of talks is the first author, unless indicated by underlining.)

Thursday, February 22, 2024

0715 - 0815 Registration, Set Up Posters, and Coffee & Tea

0815 - 0830 Welcome

M. Dennis Hanisak, FAU Harbor Branch

0830 - 0900 Keynote Address

Fish in the Indian River Lagoon – More Than Just an Entrée

Richard Paperno

Florida Fish and Wildlife Conservation Commission (Retired), Melbourne, FL

0900 - 1000 Oral Session 1 – IRL Fish

Session Chair: Chuck Jacoby, University of South Florida

0900 - 0910 Range Expansion and Population Shifts of Estuarine Fishes in a Changing Subtropical Estuary

Dwayne D. Edwards¹, Douglas H. Adams¹, Jacob E. Schneider¹, and Adam R. Searles^{1,2}

¹Florida Fish and Wildlife Conservation Commission, Melbourne, FL; ²University of Florida, Gainesville, FL

0910 - 0920 Fishes in the Northern Estuaries Monitoring (FNEMO)

Sarah Webb^{1,2}, Juliane Caughron¹, Dayna Hunn³, Christopher Malinowski⁴, Mark Barton¹, and Philip Stevens⁵

¹South Florida Water Management District, West Palm Beach, FL; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ³Florida Fish and Wildlife Conservation Commission, Tequesta, FL; ⁴Ocean First Institute, Key Largo, FL; ⁵Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL

0920 - 0930 Baitfishes Priceless Contribution to the IRL Economy, Culture, and Environment

Nicole T. Kirchhoff, Alex Goldin, Michael Jacobs, and Andrew Pruhs

Live Advantage Bait LLC, Fort Pierce, FL

0930 - 0940 Larval Recruitment Patterns Can Structure Indian River Lagoon Fish Communities: Implications for Habitat Restoration and Management Programs

Jon Shenker and Eric Reyier

Florida Institute of Technology, Melbourne, FL

0940 - 0950 Goliaths Growing in the IRL: Local Significance and Management Implications

Clark R. Morgan¹, Lauran R. Brewster², Michael P. McCallister¹, Angela B. Collins³, Laurent M. Cherubin¹, and Matthew J. Ajemian¹ (**STUDENT PRESENTATION**)

¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL;

²University of Massachusetts Dartmouth, Dartmouth, MA; ³Florida Sea Grant at University of Florida Tropical Aquaculture Laboratory, Ruskin, FL

0950 - 1000 **Fishers Know More Than You: Using Recreational Fishers' Knowledge to Assess IRL Health and Guide Restoration**

Aaron J. Adams¹, Randall W. Parkinson², Daniel Dourte³, and Amy Bainbridge³

¹Bonefish & Tarpon Trust, Harbor Branch Oceanographic Institute at Florida Atlantic University; ²RWParkinson Consulting, Inc., Melbourne, FL; ³The Balmoral Group, Winter Park, FL

1000 - 1030 **Break**

1030 - 1130 **Oral Session 2 – IRL Restoration**

Session Chair: Irene Arpayoglou, FDEP/Indian River Lagoon Aquatic Preserves

1030 - 1040 **Assessing Ecological Impacts of the Indian River Lagoon-South Restoration Project**

Derek Cox and Amanda Kahn

South Florida Water Management District, West Palm Beach, FL

1040 - 1050 **Four Years of Clam Restoration: Lessons Learned and New Directions**

Todd Z. Osborne^{1,2}, Loraé T. Simpson³, Conor MacDonnell^{1,3}, Tracey B. Schafer¹, and Jose Nunez¹

¹Whitney Laboratory for Marine Biosciences, University of Florida, St. Augustine, FL;

²University of Florida, Gainesville, FL; ³Florida Oceanographic Society, Stuart, FL

1050 - 1100 **Investigating the Impacts of Transplantation Techniques and Hard Clam (*Mercenaria mercenaria*) Presence on Subtropical Seagrass Restoration**

Conor P. MacDonnell^{1,2}, Morgan Gilligan², Sarah Cole², Todd Osborne¹, and Loraé T. Simpson²

¹University of Florida, St. Augustine, FL; ²Florida Oceanographic Society, Stuart, FL

1100 - 1110 **Decade of Subtidal Oyster Restoration in Brevard County**

Tyler Provoncha¹, Olivia Escandell¹, Jenny Hansen², Paul Sacks³, Melinda Donnelly³, and Virginia Barker²

¹Brevard Zoo, Melbourne, FL; ²Brevard County Natural Resources, Viera, FL; ³University of Central Florida, Orlando, FL

1110 - 1120 **Evaluating the Unintended Consequences of Non-Plastic Restoration Materials**

Lisa G. Chambers, Sara Gay, Megan Jensik, Linda J. Walters, Paul Sacks, and Melinda Donnelly
University of Central Florida, Orlando, FL

1120 - 1130 **Effects of *Halodule wrightii* Shoot-Density on Restorative Transplantation and Sediment Organic Matter**

Nathaniel H. Winn, Dana Becker, Paige Simpson, and Loraé T. Simpson

Florida Oceanographic Society, Stuart, FL

1130 - 1200 **Three Minutes, Three Slides 1 – Something Fishy!**

Session Chair: M. Dennis Hanisak, FAU Harbor Branch

Spatial Responses of Two Elasmobranch Species to a 2018 Cold Event in the IRL

Matthew J. Ajemian, Breanna C. DeGroot, and Michael P. McCallister

¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

Autecology of Dasyatid Stingrays within the Indian River Lagoon, Florida

Jessica J. Schieber¹ and David W. Kerstetter²

¹Florida Fish and Wildlife Conservation Commission, Melbourne, FL; ²Nova Southeastern University Dania Beach, FL

The Opossum Pipefish (*Microphis lineatus*) – an Anadromous Fish?

Matthew J. Scripter

Ecological Associates, Inc., Jensen Beach, FL

Response of Fish through Ontogeny in MPA and Adjacent Waters of the IRL (STUDENT PRESENTATION)

Jesse R. Blanchard¹, Andrew Pyryt¹, and Ralph G. Turingan²

¹Florida International University, Miami FL; ²Florida Institute of Technology, Melbourne FL

Utilizing Python™ to Analyze Sonar Recordings for Tracking and Counting Fish Targets (STUDENT PRESENTATION)

Rachel Reinhard¹, Jonathan Comstock², Jonathan Shenker^{2,3}, Dave Fuss², and M. Dennis Hanisak¹

¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL;

²Indian River Land Trust, Vero Beach, FL; ³Florida Institute of Technology, Melbourne, FL

Diurnal and Episodic Hypoxic Events Contribute to Fish Kills Plus Diminished Removal of Nitrogen and Phosphorus from IRL

Austin Fox¹, Tyler Provoncha², Rebecca English¹, Stacey Fox¹, and Mary Macdonald¹

¹Florida Institute of Technology, Melbourne, FL; ²Brevard Zoo, Melbourne, FL

The Joy of Permitting: Fish Attractors & Artificial Reefs

Jacob A. Zehnder, Brandon J. Conroy, and John C. Palmer

U.S. Army Corps of Engineers Jacksonville District, Cocoa, FL

Keep Calling Us: The U.S. Sawfish Recovery Hotline is a Key Tool that Promotes Recovery of the Endangered Smalltooth Sawfish in the Indian River Lagoon

Gregg Poulakis¹, Andrew Wooley¹, Lukas Heath¹, Dylan Yakich¹, and Adam Brame²

¹Charlotte Harbor Field Laboratory, Florida Fish and Wildlife Conservation Commission, Port Charlotte, FL; ²National Marine Fisheries Service, St. Petersburg, FL

Can a Fish Be Worth Thousands of Dollars?

Bob Virstein, Seagrass Ecosystems Analysts, Gainesville, FL

1200 - 1330 Lunch (provided)

1330 - 1430 Oral Session 3 – IRL Fish 2

Session Chair: Matt Ajemian, FAU Harbor Branch

1330 - 1340 Can You Hear Me Now: A Look at The Use of Passive Acoustic Telemetry within and around the Southern Indian River Lagoon to Monitor Fish Movement

Erick Ault¹, Dayna Hunn¹, Peter Wilson¹, Joy Young¹, Jim Whittington¹, Bailey Reins¹, Ashton Lyon¹, Eli Bradley¹, and Philip Stevens²

Florida Fish and Wildlife Conservation Commission, Tequesta, FL ² Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL

1340 - 1350 Evaluating Movement and Distribution Patterns of the Endangered Smalltooth Sawfish in a Recovering Nursery (STUDENT PRESENTATION)

Sarah Webb¹, Andrew Wooley², Lukas Heath², Dylan Yakich², Michael McCallister¹, Matthew Ajemian¹, and Gregg Poulakis²

¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL;

²Charlotte Harbor Field Laboratory, Fish and Wildlife Research Institute, Florida Fish and Wildlife Conservation Commission, Port Charlotte, FL

- 1350 - 1400 **Freshwater Discharge Disrupts Linkages between the Environment and Estuarine Fish Community (STUDENT PRESENTATION)**
Dakota M. Lewis^{1,2} and Geoffrey S. Cook²
¹University of Florida, Gainesville, FL; ²University of Central Florida, Orlando, FL
- 1400 - 1410 **Environmental Hypoxia in Ecologically Important Estuaries and Its Effects on Native Fish Species during Early Development (STUDENT PRESENTATION)**
Magaleate Kostelnik, Bing Ouyang, Paul S. Wills, and Sahar Mejri
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- 1410 - 1420 **Genomic Assessment of Spotted Seatrout Management Stocks along Florida's Atlantic Coast**
Iris Segura-García¹, Douglas H. Adams², Michael McCoy¹, and Krista McCoy¹
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
²Florida Fish and Wildlife Conservation Commission, Melbourne, FL
- 1420 - 1430 **Do Temporal Trends in Common Snook Mercury Levels in the Indian River Lagoon Evidence the Ecological Costs of Mercury Exposure?**
Derek Tremain
Florida Fish and Wildlife Conservation Commission, Melbourne, FL
- 1430 - 1500 Three Minutes, Three Slides 2 – Water Quality and Other IRL Challenges**
Session Chair: Zack Jud, Florida Oceanographic Society
- Coastal Acidification: An Emerging Issue in the Indian River Lagoon**
M. Dennis Hanisak and Kristen S. Davis
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- Water Quality Drivers of Bottlenose Dolphin (*Tursiops truncatus*) Occurrence in the Indian River Lagoon**
Courtney Brooks, Greer Babbe, Laura Issac Norton, Rachel Brewton, Gabrielle Barbarite, Tim Moore, Steve Burton, and Brian Lapointe
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- Changes in the Phosphorus Sorption Capacities of Sediments in Response to Hypoxia in the Indian River Lagoon (STUDENT PRESENTATION)**
Rebecca English and Austin Fox
Florida Institute of Technology, Melbourne, FL
- A Preliminary Characterization of Microcystin Exposure in Estuarine Sentinels in the Indian River Lagoon, Florida (STUDENT PRESENTATION)**
Ami Krasner¹, Wendy Noke Durden², Teresa Jablonski², Agatha Fabry², Megan Stolen³, Annie Page⁴, Wendy Marks⁴, and Spencer Fire¹
¹Florida Institute of Technology, Melbourne, FL; ²Hubbs-SeaWorld Research Institute, Melbourne Beach, FL; ³Blue World Research Institute, Cocoa, FL; ⁴Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- Assessment of Coastal Stormwater Systems for Improved Urban Habitat and Estuarine Ecosystem Management (STUDENT PRESENTATION)**
Imani Ford and Hyun Jung Cho
Bethune-Cookman University, Daytona Beach, FL

Determining Hydrodynamic Habitat Thresholds for Seagrass in a Microtidal, Estuarine Environment (STUDENT PRESENTATION)

Madison Giuntoli, Thirusankaranand Mathavan, Manisha Thenuwara, and Kelly M. Kibler
University of Central Florida, Orlando, FL

First Flash Kinetics of *Mnemiopsis leidyi* Cydippid Larvae

Abigail Blackburn¹, Ed Malkiel¹, Malcolm McFarland¹, Francis Letendre¹, Michael Latz²,
and Michael Twardowski¹

¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL;

²Scripps Institute of Oceanography, San Diego, CA

Parasite Surveys of *Hypanus sabina* and *H. say* Hosts in the Indian River Lagoon Estuary (STUDENT PRESENTATION)

Sarah Sargent¹, Jessica J. Schieber², David W. Kerstetter¹, and Christopher A. Blonar¹

¹Nova Southeastern University, Dania Beach, FL; ²Florida Fish and Wildlife Conservation,
Melbourne, FL

Examining How Environmental, Physical, and Pathological Factors Impact the Reproduction and Distribution of *Crassostrea virginica* in the Northern Indian River Lagoon

Hope Leonard¹, Olivia Escandell¹, Kyle Donnelly¹, Tyler Provoncha¹, and Jenny Hansen²

¹Brevard Zoo, Melbourne, FL; ²Brevard County Natural Resources, Viera, FL

Shoreline Defense Force! Novel Design of an Educational Wave Flume Illustrates the Impact of Shoreline Habitat on Coastal Erosion Processes

Kelly Kibler¹, Madison Giuntoli¹, Manisha Thenuwara¹, Thirusankaranand Mathavan¹, and
Vincent Encomio²

¹University of Central Florida, Orlando, FL; ²UF/IFAS Extension, Martin and St. Lucie
Counties, Stuart, FL

1500 - 1530 Break

1530 - 1630 Oral Session 4 – IRL Ecology & Biology

Session Chair: Linda Walters, University of Central Florida

1530 - 1540 Investigating the Molecular Mechanisms Driving Super Clam Resilience

Krista A. McCoy^{1,2}, Iris Segura-García¹, Michael W. McCoy^{1,2}, and Todd Z. Osborne³

¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL;

²Florida Atlantic University, Boca Raton, FL; ³Whitney Laboratory for Marine Bioscience,
University of Florida, Marineland, FL

1540 - 1550 What's So Different about Mosquito Lagoon?

Lori Morris¹ and Lauren Hall²

¹St. Johns River Water Management District, Palatka, FL; ²St. Johns River Water Management
District Palm Bay, FL

1550 - 1600 Examining the Interaction Between Nearshore Seagrass Beds, Shoreline Morphology, and Living Shorelines (STUDENT PRESENTATION)

Gabriel Benson¹, Melinda Donnelly¹, Lori Morris², and Linda Walters¹

¹University of Central Florida, Orlando, FL; ²St. Johns River Water Management District,
Palatka, FL

- 1600 - 1610 **Assessing a Decade of Unprecedented Change in the IRL Using Macroalgal Bio-Observatories to Understand Nutrient Sources (STUDENT PRESENTATION)**
 Brian E. Lapointe, Greer M. Babbe, Rachel A. Brewton, Laura W. Heren, and Deanna Webber
 Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- 1610 - 1620 **Evaluating Ecological Community Structure over Long Time Scales in the Northern Indian River Lagoon, FL (STUDENT PRESENTATION)**
 Michelle Shaffer¹, Sarah Stacy Barber¹, and Kristy Lewis²
¹University of Central Florida, Orlando, FL; ²University of Rhode Island, Narragansett, RI
- 1620 - 1630 **Micro-Scale Hydrodynamics within Eastern Oyster Reefs in the Indian River Lagoon, Florida (STUDENT PRESENTATION)**
 Manisha Thenuwara, Thirusankaranand Mathavan, Peter B. Vien, Jyotismita Taye, and Kelly M. Kibler
 University of Central Florida, Orlando, FL
- 1630 - 1700 Three Minutes, Three Slides 3 – IRL Restoration**
 Session Chair: Lori Morris, St. Johns River Water Management District
- Advancing Coral Restoration on St. Lucie Reef (STUDENT PRESENTATION)**
 Gabrielle S. Pantoni¹, David Gilliam², Shane Wever², and Joshua D. Voss¹
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL;
²Nova Southeastern University, Dania Beach, FL
- Potential for Recovery of Seagrass from Seeds in the Indian River Lagoon (STUDENT PRESENTATION)**
 Isabel Bennett^{1,2} and Lauren M. Hall¹
¹St. Johns River Water Management District, Palm Bay, FL; ²Florida Institute of Technology, Melbourne, FL
- Save the Seed: Sexual reproduction of *Halodule wrightii* in Mosquito Lagoon, FL (STUDENT PRESENTATION)**
 Carla Perscky^{1,2}, Nicole Jerrell², Madison Serrate², Melinda Donnelly², Paul Sacks², and Linda Walters²
¹Oregon State University, Corvallis, OR; ²University of Central Florida, Orlando, FL
- Seagrass Census: Assessing Viable Seagrass Fragments Abundance in the Wrack Line (STUDENT PRESENTATION)**
 Nicole Jerrell, Madison Serrate, Melinda Donnelly, and Linda Walters
 University of Central Florida, Orlando, FL
- Hydro-morphologic Regime in Black Mangrove Pneumatophores**
 Jyotismita Taye¹, Manisha Thenuwara¹, Thirusankaranand Mathavan¹, Peter B. Vien¹, David J. Cannon², and Kelly M. Kibler¹
¹University of Central Florida, Orlando, FL; ²Cooperative Institute for Great Lakes Research, University of Michigan, Ann Arbor, MI
- Assessing Wrack Biodiversity in the Indian River Lagoon Amid Changing Shoreline Conditions (STUDENT PRESENTATION)**
 Madison Serrate, Nicole Jerrell, Melinda Donnelly, and Linda Walters
 University of Central Florida, Orlando, FL

How Oyster Reefs Influence Hydrodynamic Conditions in the Indian River Lagoon

Peter B. Vien, Thirusankaranand Mathavan, Manisha Thenuwara, Jyotismita Taye, and Kelly M. Kibler (STUDENT PRESENTATION)
University of Central Florida, Orlando, Florida

Using Wildlife Trail Cameras to Monitor Faunal Responses to Biodegradable Oyster Reef Restoration Materials (STUDENT PRESENTATION)

Tara Blanchard, Paul Sacks, Melinda Donnelly, and Linda Walters
University of Central Florida, Orlando, FL

Exploring Oyster Reefs through Virtual Reality: Comparing Methods of Science Outreach (STUDENT PRESENTATION)

Katherine Harris¹, Carley Metcalf², Ryan P. McMahan¹, and Linda Walters¹
¹University of Central Florida, Orlando, FL; ²Marine Discovery Center, New Smyrna Beach, FL

1700 Day 1 Closing Remarks

Duane De Freese, Indian River Lagoon Council & Indian River Lagoon National Estuary Program

Announcements and Transition to Poster Session & Reception

1730 - 2000 Poster Session & Reception (Open to the public, too!)

1930 Announcement of Student Awards (Auditorium)

Mobile Educational Wave Flume on Display

The Kibler Ecohydraulics Lab in the Department of Civil, Environmental and Construction Engineering at the University of Central Florida has created a mobile educational wave flume designed to demonstrate coastal erosion and the impact of natural features (“natural infrastructure”) as a defense against erosion. During the breaks, lunches, and poster session/reception, the wave flume is on display under the pavilion behind the Education Center. Please check it out! Resource materials, including a how-to kit, with materials, design specs, and lesson plans for how the flume can be used with various audiences and settings, are also available!

How to Vote on People’s Choice Student Awards

This year we will again have three People’s Choice Student Awards. Each registrant will be able to vote once in each of the three categories: Best 10-Minute Oral Presentation, Best 3-Minute Oral Presentation, and Best Poster.

In the following poll, please select the presentations that you thought were most deserving of this recognition: <https://www.crowd.live/IRLS2024>. Polls will close at 19:00.

Friday, February 23, 2024

0830 - 0930 Oral Session 5 – Fish 3

Session Chair: Loraé Simpson, Florida Oceanographic Society

0830 - 0840 Fisheries Studies from a Mosquito Control Perspective

Brandon Chadwick¹, Sherry Burroughs¹, and Jon Shenker²

¹Indian River Mosquito Control District, Vero Beach FL; ²Florida Institute Technology, Melbourne, FL

0840 - 0850 Mosquito Impoundments as Fish Nurseries: Variability in Habitat Structure, Fish Species Composition and Emigration into the Indian River Lagoon

Rachel Reinhard^{1,2}, Margaret Rodrigue^{1,2}, David Fuss², M. Dennis Hanisak¹ and Jonathan Shenker^{2,3}

¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Indian River Land Trust, Vero Beach, FL; ³Florida Institute of Technology, Melbourne, FL

0850 - 0900 Ichthyoplankton Recruitment within Mangrove-dominated Mosquito Control Impoundments

Margaret Rodrigue¹, Jonathan Shenker², and M. Dennis Hanisak¹

¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Florida Institute of Technology, Melbourne, FL

0900 - 0910 Assessment of Fish Spawning Aggregations in Southeast Florida: Residency and Movement Patterns of Gray Snapper off Southeast Florida

Erick Ault¹, Dayna Hunn¹, Chris Taylor², and Xaymara Serrano³

¹Florida Fish and Wildlife Conservation Commission, Tequesta, FL; ²NOAA Center for Coastal Fisheries and Habitat Research, Beaufort, NC; ³NOAA Coral Reef Conservation Program, West Palm Beach, FL

0910 - 0920 A Brief Overview of Fisheries-Independent Monitoring in the Southern IRL and Surrounding Areas

Peter Wilson¹, Erick Ault¹, Dayna Hunn¹, Jim Whittington¹, Bailey Reins¹, Ashton Lyon¹, Eli Bradley¹, and Philip Stevens²

¹Florida Fish and Wildlife Conservation Commission, Tequesta, FL; ²Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL

0920 - 0930 Insights into Indian River Lagoon Fish Population Genetics and Implications for Lagoon Biodiversity and Management

Jeff A. Eble

Hubbs-SeaWorld Research Institute, Melbourne Beach, FL

0930 - 1000 Three Minutes, Three Slides – Potpourri

Session Chair: Elizabeth Salewski, South Florida Water Management District

Fish Ecological Modeling Informs Restoration Efforts in the IRL

Jesse R. Blanchard¹ and Ralph G. Turingan²

¹Florida International University, Miami FL; ²Florida Institute of Technology, Melbourne, FL

Listening to the Lagoon: An Overview of the Lake Worth Lagoon Acoustic Receiver Array

Erick Ault¹, Jennifer Báez², Tom Twyford³, Dayna Hunn¹, and Bailey Reins¹

¹Florida Fish and Wildlife Conservation Commission, Tequesta, FL; ²Palm Beach County Department of Environmental Resource Management, West Palm Beach, FL; ³West Palm Beach Fishing Club, West Palm Beach, FL

Managing Mosquitoes with Blood, Fish and Weirs in Brevard County: Striking a Balance in and around the Indian River Lagoon

Joseph Faella, Jonathan Linder, Bridget Coffey-Picco, and Maxwell Reynolds
Brevard County Mosquito Control, Titusville, FL

Atlantic Mole Crab (*Emerita talpoida*) Abundance and Distribution on the Space Coast

Michaela Stenerson, Robert Sluka, Madeline Padgett, and Noah Guthrie
A Rocha USA, Titusville, FL

Martin County Seagrass Restoration Project: Taking a Comprehensive Approach to Restoring Seagrass Habitat in the Indian River Lagoon (IRL)

Michael A. Yustin¹ and Patrick Zuloaga²

¹Martin County Board of County Commissioners, Stuart, FL; ²Tetra Tech Inc., West Palm Beach, FL

Accessing Blue Carbon Finance from Habitat Restoration in the Indian River Lagoon: Results from a Feasibility Study on Seagrass Restoration

Ryan P. Moyer¹, Kathleen Onorevole¹, Scott Settlemyer¹, Madeline Regenye¹, Rebecca Dickson¹, Danielle Richter², and Andrew Walker²

¹TerraCarbon LLC, Peoria, IL; ²Fish and Wildlife Foundation of Florida, Saint Petersburg, FL

Stormwater Monitoring as a Crucial Contribution of Citizen Science on Behalf of IRL Restoration

Jeffrey Greenberg¹, James Yount², Andri Evagarou², Peter Gay³, Michael Myjak⁴, and Charles Lindahl⁵

¹A Rocha USA, Titusville, FL; ²Eastern Florida State College, Cocoa, FL; ³Astronaut High School, Titusville, FL; ⁴Speak Up Titusville, Titusville, FL; ⁵Texas A&M University, Bryan, TX

1000 - 1030 Break

1030 - 1130 Oral Session 6 – Potpourri

Session Chair: Jessy Wayles, Indian River Lagoon National Estuary Program

1030 - 1040 Big Sawfish in the Southern Indian River Lagoon: What Are They Doing?!

Andrew Wooley¹, Lukas Heath¹, Dylan Yakich¹, Sarah Webb^{2,3}, Michael McCallister², and Gregg Poulakis¹

¹Fish and Wildlife Conservation Commission, Port Charlotte, FL; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ³South Florida Water Management District, West Palm Beach, FL

1040 - 1050 Parasite Diversity of Cryptobenthic Fishes in the IRL

Christopher Moore¹, Iris Segura-Garcia^{1,2}, Michael McCoy¹, and Krista McCoy¹

¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Smithsonian Marine Station, Fort Pierce, FL

1050 - 1100 Something's Fishy: Bottlenose Dolphin (*Tursiops truncatus*) Feeding in the Indian River Lagoon, Florida

Lauren Clance, Brooke Davis, Kristen Eisele, Tracy Kowalczyk, Wendy Marks, Lydia Moreland, Nicole Pegg, Steve Burton, and Annie Page

Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

- 1100 - 1110 **Dead Dolphins Dated by Stranding Domain along Florida's Coastline**
Laura Lesyna¹, Greg O'Corry-Crowe¹, Annie Page-Karjian¹, Elizabeth Stratton², and Tim Moore¹
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL;
²National Oceanic and Atmospheric Administration Fisheries, Miami, FL
- 1110 - 1120 **To Cage or Not to Cage Seagrass: Is There Even a Question?**
Loraé T. Simpson¹, Morgan K. Gilligan¹, and Douglas M. Scheidt²
¹Florida Oceanographic Society, Stuart, FL; ²Herndon Solutions Group/NEMCON, Kennedy
Space Center, FL
- 1120 - 1130 Closing Remarks**
M. Dennis Hanisak, FAU Harbor Branch

Posters

Posters will be displayed all day in the Education Annex (Posters #1-30), Ed Center Lab (Posters #31-42), and the Gallery (Posters #43-48). During the poster session, presenters of odd-numbered posters will minimally be at their posters between 1730 and 1815; presenters of even-numbered posters will minimally be at their posters between 1815 and 1900. We also encourage students to be at their posters during the second half of the lunch break. **Please join us in the Auditorium for the presentation of student awards at 1930.**

- 1. Microplastic and Cellulose Fiber Ingestion by Juvenile Estuarine Invertebrates from Restored Oyster Reefs in the Indian River Lagoon (STUDENT PRESENTATION)**
Luciana Banquero, Stefannia Tasayco, Paul Sacks, Joshua Fnu, Lei Zhai, and Linda Walters
University of Central Florida, Orlando, FL
- 2. Mercury Concentrations in Key IRL Fishery Species: Individual, Temporal, and Spatial Patterns**
Autumn Biddle and Derek Tremain
Florida Fish and Wildlife Conservation Commission, Melbourne, FL
- 3. Does Mangrove Encroachment on Oyster Reefs in The Indian River Lagoon Enhance Blue Carbon Storage? (STUDENT PRESENTATION)**
Nicole Boisson, Linda J. Walters, Paul Sacks, and Lisa Chambers
University of Central Florida, Orlando, FL
- 4. Exchange of Juvenile Tarpon (*Megalops atlanticus*) between a Mosquito Impoundment and the Indian River Lagoon Estuary**
Philip Stevens¹, Eli Bradley², Erick Ault², Dayna Hunn², Peter Wilson², and Sarah Webb³
¹Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL; ²Florida Fish and Wildlife Conservation Commission, Tequesta, FL; ³South Florida Water Management District, West Palm Beach, FL
- 5. Iron's Influence on Water Clarity and Sediment Carbon Storage in the Indian River Lagoon (STUDENT PRESENTATION)**
Hanna Bridgham, Mason Thackston, Owen Silvera, and Jordon Beckler
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- 6. The Seagrass Isn't Always Greener at the Other Site: Variability in Seagrass Benthic Communities Across the Indian River Lagoon**
Sabrina Castellanos¹, Lorae T. Simpson², Conor MacDonnell², and L. Holly Sweat¹
¹Smithsonian Marine Station, Fort Pierce, FL; ²Florida Oceanographic Society, Stuart, FL
- 7. Leveraging Mosquito Impoundments to Treat Eutrophic Waters in the Indian River Lagoon, FL (STUDENT PRESENTATION)**
Taryn Chaya and Todd Z. Osborne
Whitney Laboratory for Marine Bioscience, University of Florida, St. Augustine, FL
- 8. Quantification of Secondary Microplastics Produced by Plastic Restoration Materials**
Naija Cheek, Linda J. Walters, Paul Sacks, Melinda Donnelly, and Lisa G. Chambers
University of Central Florida, Orlando, FL
- 9. Benthic Infaunal Responses to Mangrove Restoration (STUDENT PRESENTATION)**
Jessica Cline
Florida Institute of Technology, Melbourne, FL & Marine Resources Council, Palm Bay, FL
- 10. The Response of Benthic Infauna to Environmental Muck Dredging at Sykes Creek (Indian River Lagoon, Merritt Island, Florida) (STUDENT PRESENTATION)**
Jessica Cline, Sean Crowley, Mara Skadden, Conor Wong, and Kevin B. Johnson
Florida Institute of Technology, Melbourne, FL

11. **“Plastic Rain” in the Indian River Lagoon (STUDENT PRESENTATION)**
 Jordyn Collis, Paul Sacks, Katherine Harris, Advanced Marine Biology Undergraduate Students, and Linda Walters
 University of Central Florida, Orlando, FL
12. **The Occurrence of Seagrass Adjacent to Environmental Dredging for Polluted Organic Sediment Removal in a Sub-tropical Lagoon (STUDENT PRESENTATION)**
 Sean Crowley¹, Kevin B. Johnson², Connor Wong¹, Mara Skadden¹, and Jessica Cline¹
¹Florida Institute of Technology, Melbourne, FL; ²Tarleton State University, Stephenville, TX
13. **Oyster Spat Monitoring in the Southern Indian Lagoon and St. Lucie Estuary: 2020-2024**
 Nicholas Curto, Sarah Cole, and Loraé T. Simpson
 Florida Oceanographic Society, Stuart, FL
14. **Investigating the Relationship Between Sediment Characteristics and Populations of Seagrass at the Coastal Oaks Preserve (STUDENT PRESENTATION)**
Lydia Dalglish^{1,3}, Calista Huff^{2,3}, Cecelia Lander^{1,3}, Jay Seals Lappas^{1,3}, Kayla Osowski^{1,3}, Journey Setzer^{1,3}, Marcos Vilorio^{1,3}, and Web Webster^{1,3}
¹Vero Beach High School, Vero Beach, FL; ²Indian River Charter High School, Vero Beach, FL; ³Junior Scientists Program 2023-2024
15. ***Syngnathus louisianae* Distribution and Habitat Associations in the Indian River Lagoon**
 Nicholas W. Davis
 Bethune-Cookman University, Daytona Beach, FL
16. **Evaluating the Antifouling Efficacy of Ultraviolet Light on the Barnacle *Amphibalanus amphitrite***
 Sarah Davis and L. Holly Sweat
 Smithsonian Marine Station, Fort Pierce, FL
17. **Native Plant Species Dominate a Restored Tidal Marsh in the Coastal Oaks Preserve (STUDENT PRESENTATION)**
Sophie Denninger^{1,4}, Eliza Dinenberg^{1,4}, Jacob Komarnicki^{2,4}, Owen Long^{2,4}, Billy Wade^{3,4}, Gianna Walker^{2,4}, and Kennedy Wile^{2,4}
¹Indian River Charter High School, Vero Beach, FL; ²Vero Beach High School, Vero Beach, FL; ³Sebastian River High School, Sebastian, FL; ⁴Junior Scientists Program
18. **Evaluating the Impacts of Marine Science Programming on Students in Underserved Communities (STUDENT PRESENTATION)**
 Katelyn DiGirolomo-Alvarez¹, Josephine Story¹, Jennifer Cutter¹, Laura Issac-Norton¹, Bryan Nichols², and Gabrielle Barbarite¹
 Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
 Florida Atlantic University, Boca Raton, FL
19. **Assessing Nutritional Condition in Common Bottlenose Dolphins (*Tursiops truncatus truncatus*) Inhabiting the Northern Indian River Lagoon**
 Wendy Noke Durden, Agatha Fabry, and Teresa Jablonski
 Hubbs-SeaWorld Research Institute, Melbourne Beach, FL
20. **Halifax River Oyster Project (STUDENT PRESENTATION)**
 Christina Gabriel, Ranijah Howard, Shawna Brooks, and Antoinette Destefano
 Bethune Cookman University, Daytona Beach, FL
21. **An Elementary School Teacher’s View: Best Practices for Engaging Students in Mangrove Conservation**
 Mary Lynn Hess¹, Melinda Donnelly², and Linda J. Walters²
¹Goldsboro Elementary Magnet School, Sanford, FL; ²University of Central Florida, Orlando, FL

- 22. IRLON: It's Not Plug and Play!**
Chris Hoey, Scott Hurley, Samantha Moloney, Victoria Guitarte, Bryon Botson, Kristen S. Davis, and M. Dennis Hanisak
 Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- 23. Development of a Coupled Physical-Biogeochemical Model for C44 Canal and Linking Lake Okeechobee with St. Lucie Estuary**
 Mingshun Jiang, Jordon Beckler, and Owen Silvera
 Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- 24. Education and Advocacy toward Marine Debris Prevention and Reduction (STUDENT PRESENTATION)**
 Kyleigh Leaf, Parisa Ebraimbabaie, Elnaz Khodaei, and Hyun Jung Cho
 Bethune-Cookman University, Daytona Beach, FL
- 25. Habitat Utilization and Distribution of two Sympatric Dasytid Stingrays in the Indian River Lagoon (STUDENT PRESENTATION)**
 Hannah Lesko¹, Logan Exton¹, Jessica Schieber², and David Kerstetter¹
¹Nova Southeastern University, Dania Beach, FL; ²Florida Fish and Wildlife Conservation Commission, Melbourne, FL
- 26. Growth and Survival of Manatee Grass at Different Salinities in the Indian River Lagoon: A Mesocosm Experiment to Assess Restoration Potential (STUDENT PRESENTATION)**
 Alicia Lopez, Sailor Scheinkman, Natalie Sperry, Sean Crowley, Tyler Provoncha, Ken Lindeman, and Austin Fox
 Florida Institute of Technology, Melbourne, FL
- 27. Five Year Overview of Fish Disease and Mortality Reports in the Indian River Lagoon**
 Kyle Luba¹ and Douglas H. Adams²
¹Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL; ²Florida Fish and Wildlife Conservation Commission, Melbourne, FL
- 28. Maximizing Nitrogen Removal in a Bioreactor by Adjusting C:N Ratios and Residence Times (STUDENT PRESENTATION)**
 Mary MacDonald, Austin Fox, and Stacey Fox
 Florida Institute of Technology, Melbourne FL
- 29. Hydrodynamic Habitat Threshold Model for Oyster Restoration in Microtidal Estuarine Environments (STUDENT PRESENTATION)**
 Thirusankaranand Mathavan, Madison Giuntoli, Manisha Thenuwara, and Kelly Kibler
 University of Central Florida, Orlando, FL
- 30. Examining the Plasticity of the Syngnathids spp. in the Northern IRL (STUDENT PRESENTATION)**
 Lakean McGregor and Sarah Krejci
 Bethune-Cookman University, Daytona Beach, FL
- 31. NASA DEAP Institute: A Three-University Consortium toward Improving Satellite Data-based Flash Flood Segmentation using Machine Learning (STUDENT PRESENTATION)**
 Kisha Mulenga, Hyun Jung Cho, and Juan Calderon
 Bethune-Cookman University, Daytona Beach, FL
- 32. Impacts of Glyphosate on Algae Blooms in the Indian River Lagoon (STUDENT PRESENTATION)**
 Caroline Muscat¹, Tyler Provoncha¹, Austin Fox², Hope Leonard^{1,2}, and Connor Wong²

¹Brevard Zoo, Melbourne, FL; ²Florida Institute of Technology, Melbourne, FL

- 33. *Rhizophora mangle* (Red Mangrove) Growth and Survival in Different Habitats in Mosquito Lagoon, Florida (STUDENT PRESENTATION)**
Mekail Negash, Melinda Donnelly, Mason, Lisa Chambers, and Linda Walters
University of Central Florida, Orlando, FL
- 34. Biodiversity Associated with the Salt Marsh Shoreline at Jones' Pier Conservation Area (STUDENT PRESENTATION)**
Chase Nelson^{1,2,3}, Emmy Dichter^{1,2,3}, Kiley Donovan^{1,2,3}, Millicent Critchfield^{1,2,3}, and Selma Memet^{1,2,3}
¹Saint Edwards School, Vero Beach, FL; ²Indian River County Conservation Lands Division Program, Vero Beach, FL; ³Inwater Research Group, Jensen Beach, FL
- 35. The Relations between Water Quality and Fish in the Impoundments of the Coastal Oaks Preserve (STUDENT PRESENTATION)**
Daniela Nunez^{1,3}, Jasmyne Williams^{1,3}, Alexa Luna^{2,3}, and Lindsay Scheele^{2,3}
¹Vero Beach High School, Vero Beach, FL; ²Sebastian River High School, Sebastian, FL; ³Junior Scientists Program 2023-2024
- 36. Using Environmental and Prey Characteristics to Describe Sport Fish Abundance in an Estuarine Environment (STUDENT PRESENTATION)**
Jemimah Olajide, Christopher Crowder, and Geoffrey Cook
University of Central Florida, Orlando, FL
- 37. IRL Biodiversity: Review and Gap Analysis of Northern Indian River Lagoon Biodiversity**
Madeline Padgett, Michaela Sternerson, Noah Guthrie, and Robert D. Sluka
A Rocha USA, Titusville, FL
- 38. Dynamic Nature of Hydrology and Benthic Vegetation of Mosquito Control Impoundments (STUDENT PRESENTATION)**
Providence Pangira¹, Jonathan Linder², Bridget Coffey², Jiyahna Price¹, Sarah Gaudreault³, and Hyun Jung Cho¹
¹Bethune-Cookman University, Daytona Beach, FL; ²Brevard County Mosquito Control, Titusville, FL; ³Riverside Conservancy, Edgewater, FL
- 39. Seed Bank, Viability, and Germination of *Ruppia maritima* within Seagrass Beds and Mosquito Control Impoundments of Indian River Lagoon (STUDENT PRESENTATION)**
Jiyahna Price¹, Jonathan Linder², Bridget Coffey², Providence Pangira¹, Sarah Gaudreault³, and Hyun Jung Cho¹
¹Bethune-Cookman University, Daytona Beach, FL; ²Brevard County Mosquito Control, FL; ³Riverside Conservancy, Edgewater, FL
- 40. Using Unmanned Aircraft Systems (UAS) to Assess Body Condition of Common Bottlenose Dolphins (*Tursiops truncatus truncatus*) in the Indian River Lagoon, Florida (STUDENT PRESENTATION)**
Jessica Provenzano¹, Wendy Noke Durden², Teresa Jablonski², Agatha Fabry², and Spencer Fire¹
¹Florida Institute of Technology, Melbourne, FL; ²Hubbs-SeaWorld Research Institute, Melbourne Beach, FL
- 41. Detection of Multiple Algal Toxins in Whitespotted Eagle Rays from Florida Coastal Waters (STUDENT PRESENTATION)**
Ariadna Rojas Corzo¹, Breanna DeGroot¹, Brianna Cahill¹, Kim Bassos-Hull², and Matthew J. Ajemian¹
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Mote Marine Laboratory, Sarasota, FL

- 42. Comparison of Results of Different Oyster Reef Construction Strategies in the Indian River Lagoon**
Paul Sacks¹, Tyler Provoncha², Olivia Escandell², Jenny Hansen³, Melinda Donnelly¹, and Virginia Barker³
¹University of Central Florida, Orlando, FL; ²Brevard Zoo, Melbourne, FL; ³Brevard County Natural Resources Management, Viera, FL
- 43. Results of Pilot Seagrass Transplanting Efforts in the Indian River Lagoon Using Nursery-Reared *Halodule wrightii***
Amber Santoso¹, Olivia Escandell¹, Don Deis¹, Bob Virnstein², Hope Leonard¹, and Tyler Provoncha¹
¹Brevard Zoo, Melbourne, FL; ²Seagrass Ecosystems Analysts, Gainesville, FL
- 44. Fish Use of Habitat Restoration Sites in Lake Worth Lagoon – A Model for IRL Restoration Efforts**
Jacob Schneider¹, Scott Markwith², and James Whittington³
¹Florida Fish and Wildlife Conservation Commission, Melbourne, FL; ²Florida Atlantic University, Boca Raton, FL; ³Florida Fish and Wildlife Conservation Commission, Tequesta, FL
- 45. Niche Partitioning in Benthic Fish Predators in the Indian River Lagoon**
Klara Scriptor¹ and Matthew Scriptor²
¹Florida Virtual Schools; ²Ecological Associates, Inc., Jensen Beach, FL
- 46. Assessing the Net Advantage of Living Shoreline Stabilization on the Ecological Success of a Restoration Method for *Halodule wrightii* (STUDENT PRESENTATION)**
Angie Tasayco, Carla Perscky, Gabriel Benson, Federico Borghesi, Linda Walters, and Melinda Donnelly
University of Central Florida, Orlando, FL
- 47. Aquatic Plants in Coastal Urban Stormwater Structures as Potential Habitats for *Mansonia* Mosquitoes**
Khanyisile Tshabalala, Anna B. Ponce, and Hyun Jung Cho
Bethune-Cookman University, Daytona Beach, FL
- 48. Hardhead and Gafftopsail Catfish in the Indian River Lagoon: Abundance, Distribution and Diet, Including Egg Predation in Horseshoe Crab Spawning Aggregations**
Jon Shenker¹, Richard Paperno², Derek Tremain², and Ashley Yarbrough²
¹Florida Institute of Technology, Melbourne, FL; ²Florida Fish and Wildlife Conservation Commission, Melbourne, FL