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Indian River Lagoon Symposium 2018

Restoration of the Indian River Lagoon

Program Schedule – Technical Sessions
Thursday, February 8, 2018

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

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

0815 - 0830  Welcome
M. Dennis Hanisak, FAU Harbor Branch

0830 - 0900  Keynote Address
Oyster Restoration in the Indian River Lagoon: Past, Present & Future
Linda Walters
University of Central Florida, Orlando, FL

0900 - 0900  Oral Session 1 – Restoration
Session Chair: Jeff Beal, Florida Fish and Wildlife Conservation Commission

0900 - 0915  Flow-Biota Interaction in Restored Shorelines and Oyster Reefs: An Ecohydraulic Analysis of Restoration in Mosquito Lagoon
Kelly M. Kibler, Vasileios Kitsikoudis, David W. Spiering, Linda Walters, and Melinda Donnelly
University of Central Florida, Orlando, FL

0915 - 0930  The Potential of Bivalves to Restore the Indian River Lagoon (FL) after Aureoumbra lagunesis Brown Tides
Eve Galimany, Jessica Lunt, Christopher Freeman, Malcolm Mossop, Arthur Domingos, Jay Houk, Sherry A. Reed, and Valerie J. Paul
Smithsonian Marine Station, Fort Pierce, FL

0930 - 0945  Bivalves at Work: How Effective Are Oysters at Cleaning the St. Lucie River?
Jessica Lunt¹, L.J. Houk¹, and Vincent Encomio²
¹Smithsonian Marine Station, Fort Pierce, FL; ²Florida Oceanographic Society, Stuart, FL

0945 - 1000  Seagrass Restoration Influenced by Small-Scale Distances to Nearby Restored Oyster Reefs
Kathryn A. Tiling and Vincent Encomio
Florida Oceanographic Society, Stuart, FL

1000 - 1030  Break

1030 - 1130  Oral Session 2 – Management & Outreach
Session Chair: Patti Gorman, South Florida Water Management District

1030 - 1045  Mitigating Harmful Algal Blooms in the Indian River Lagoon: How Effective Were the Fertilizer Bans?
Rachel A. Brewton, Lynn E. Wilking, Laura W. Herren, and Brian E. Lapointe
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
1045 - 1100 What Was Up Is down and What Was Down Is Up … How Do We Regain the Balance?  
Lori Morris, Robert Chamberlain, Chuck Jacoby, and Margie Lasi  
St. Johns River Water Management District, Palatka, FL

1100 - 1115 Living Shoreline Designs for Lagoon-front Residents: Living Shoreline Demonstration Site and Wave Tank Modeling  
Jake Zehnder¹, Robert J. Weaver², Jody B. Palmer¹, and Virginia Barker³  
¹Brevard Zoo, Melbourne, FL; ²Florida Institute of Technology, Melbourne, FL; ³Brevard County Natural Resources Management, Melbourne, FL

1115 - 1130 Effectiveness of Public Education at Controlling Nonpoint Source Pollution along the Mosquito Lagoon  
Andrea Orozco, Adeljean Ho, and Hyun Jung Cho  
Bethune-Cookman University, Daytona Beach, FL

1130 - 1215 Three Minutes, Three Slides  
Session Chair: M. Dennis Hanisak, FAU Harbor Branch

Movement and Habitat Use of Spotted Eagle Rays, Aetobatus narinari, along Florida’s East Coast: Implications for Bivalve Restoration and Fisheries in the Indian River Lagoon  
Breanna C. DeGroot¹, Kim Bassos-Hull², Michael P. McCallister³, and Matthew J. Ajemian¹  
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Mote Marine Laboratory, Sarasota, FL

Impacts of Coastal Restoration on Population and Community Dynamics of Sportfish in the Indian River Lagoon  
Jennifer M. Loch and Geoffrey S. Cook  
University of Central Florida, Orlando, FL

Left in Their Wake: Impacts of Boating and Bioeroders on Oyster Reef Restoration  
Iris J. Fang, Linda J. Walters, Titchenda Chan, Kevin Mackie, and Kelly Kibler  
University of Central Florida, Orlando, FL

A Post-Restoration Analysis: How Does Intertidal Oyster Reef Restoration Effect Avian Community Structure and Behavior in Mosquito Lagoon?  
Michelle Shaffer, Melinda Donnelly, and Linda Walters  
University of Central Florida, Orlando, FL

Hydrodynamic Limitations to Mangrove Recruitment and the Implications for Living Shoreline Restoration  
Christian Pilato, Kelly Kibler, and Linda Walters  
University of Central Florida, Orlando, FL

Using Saltmarsh Grasses and Groundcovers to Support Natural Mangrove Recruitment on Appropriate Shorelines  
Kirk Fusco  
Florida Department of Environmental Protection, Indian River Lagoon Aquatic Preserves, Fellsmere, FL

Living Docks: Promoting the Growth of Benthic Communities for Improved Water Quality  
Ryan P. Christiansen, Kelli Z. Hunsucker, and Robert J. Weaver  
Florida Institute of Technology, Melbourne, FL
“Livin for the Lagoon”, an Outreach Program to Promote Homeowners to Adopt Lagoon Friendly Landscaping Practices
Sara Piotter and Maryam Ghadiri
Environmental Learning Center, Vero Beach, FL

Community-Scale Enhancement and Restoration of the Rose Bay Watershed in Volusia County
Katie Tripp¹, Paul Haydt², Erica Hernandez³, and Ron Brockmeyer³
¹Save the Manatee Club, Maitland, FL; ²East Coast Greenway Alliance, Palm Coast, FL; ³St. Johns River Water Management District, Palatka, FL

1215 - 1315 Lunch (provided)

1315 - 1430 Oral Session 3 – Monitoring/Water Quality
Session Chair: Chuck Jacoby, St. John’s River Water Management District

1315 - 1330 Spatiotemporal Changes in the Indian River Lagoon Microbiome
David J. Bradshaw II and Peter J. McCarthy
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

1330 - 1345 Relationships between Dissolved Nutrients, Environmental Variables, and Acidification in the Indian River Lagoon
Bret Kaiser and Brian Lapointe
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

1345 - 1400 A Tale of Two Summers: Using IRLON Data to Compare the Effects of the Lake Okeechobee Discharges of 2016 and 2017 on the St. Lucie Estuary
Nicole Stockley, James Sullivan, Dennis Hanisak, Malcolm McFarland, and Kristen Davis
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

1400 - 1415 Impacts of Dredging, Hurricanes and Seasonality on Fluxes of Nitrogen and Phosphorus from IRL Sediments
Austin L. Fox, John H. Trefry, and Stacey L. Fox
Florida Institute of Technology, Melbourne, FL

1415 - 1430 Highlights from a Two-Year Time Series for Chemical Forms of Nitrogen and Phosphorus in Tributaries to the Northern Indian River Lagoon
John H. Trefry, Austin L. Fox, and Stacey L. Fox
Florida Institute of Technology, Melbourne, FL

1430 - 1500 Three Minutes, Three Slides
Session Chair: Zack Jud, Florida Oceanographic Society

Extent of Shoreline Degradation in Urbanized Areas on the East Coast of Central Florida
Suzanne Connor, Melinda Donnelly, Michelle Shaffer, Stephanie Garvis, Annie Roddenberry, Kelly Kibler, and Linda Walters
University of Central Florida, Orlando, FL

Evaluating the Effectiveness of Living Shorelines in Mitigating Non-point Source Pollution and Increasing Soil Carbon Storage in the Mosquito Lagoon
Mallory Brooks, Adeljean L. Ho, and Hyun J. Cho
Bethune-Cookman University, Daytona Beach, FL
A Mechanical Method to Prevent Invasive Species Recruitment
Kelli Z. Hunsucker, Emily Ralston, Harrison Gardner, and Geoffrey Swain
Florida Institute of Technology, Melbourne, FL

A Review of Dolphin Disentanglements in the Indian River Lagoon for 2017
Steve Burton1, Wendy Marks1, Adam Schaefer1, Anne Sleeman1, Laurie Alexio1, Marilyn Mazzoil1, Wendy Noke Durden2, and Annie Page-Karjian1
1Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; 2Hubbs-SeaWorld Research Institute, Melbourne, FL

Harmful Algal Blooms in the IRL: Plenty to Choose from
Paul E. Hargraves
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; Smithsonian Marine Station, Fort Pierce, FL

Source Tracking Agricultural and Urban Nutrient Inputs into the North Fork of the St. Lucie River
Jordan A. Madio, Lynn E. Wilking, Rachel A. Brewton, and Brian E. Lapointe
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

The IRL as a Vehicle to Integrate STEM and the Humanities in Secondary Education
Karlheinz Haas and Nathaniel Osborn
The Pine School, Hobe Sound, FL

Creating Positive Environmental Attitudes and Connections with Nature through Youth Outdoor Exploration and Adult Environmental Education Training
Sarah Christopherson and Maryam Ghadiri
Environmental Learning Center, Vero Beach, FL

1500 - 1530 Break

1530 - 1645 Oral Session 4 – Ecology
Session Chair: Valerie Paul, Smithsonian Marine Station

1530 - 1545 MarineGEO: A Smithsonian-led Global Observatories Network Designed to Understand Change in Coastal Ecosystems
Dean S. Janiak1, C.J. Freeman1, J. Campbell1, J. Seemann2, D. Branson1, V.J. Paul1, and J.E. Duffy3
1Smithsonian Marine Station, Fort Pierce, FL; 2Smithsonian Tropical Research Institute, Bocas del Toro, Panama; 3Smithsonian Environmental Research Center, Edgewater, MD

1545 - 1600 Dynamics of Fish Community Diversity within the Indian River Lagoon
Brittany Troast1, Richard Paperno2, and Geoffrey Cook1
1University of Central Florida, Orlando, FL; 2Florida Fish and Wildlife Conservation Commission, Melbourne, FL

1600 - 1615 The Impacts of Major Weather Events on Oyster Populations in the St. Lucie Estuary
Richard Radigan and Melanie Parker
Florida Fish & Wildlife Conservation Commission, St. Petersburg, FL
Integrating Flow-Cytometric and Molecular Tools to Characterize Bloom Dynamics of Nano- and Picoplanktonic Algae in the Indian River Lagoon
Eric Muhlbach, Charles Tilney, Laura Markley, Karen Henschen, Stephanie Keller-Abbe, Celia Villac, Cary Lopez, Susan Badyak, Edward Phlips, Lauren Hall, Margaret Lasi, Ashley Parks, Richard Paperno, Doug Adams, Karen Vaughan, Dwayne Edwards, Jacob Schneider, Kyle Wald, and Katherine Hubbard
1Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL; 2University of Florida, Gainesville, FL; 3St. Johns River Water Management District, Palatka, FL; 4Florida Fish and Wildlife Conservation Commission, Melbourne, FL

Internal Nutrient Cycling in the Indian River Lagoon: Is Nitrogen Fixation an Overlooked Source for Blooms?
Joshua Papacek, Edward Phlips, Margaret Lasi, and Patrick Inglett
1University of Florida, Gainesville, FL; 2St. Johns River Water Management District, Palatka, FL

Can Elevated Salinity Trigger the Viable But Nonculturable State in the Marine Pathogen Vibrio vulnificus?
Brandon McHenry, Gabby Barbarite, and Peter McCarthy
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

Growth-Irradiance Relationships of Pyrodinium bahamense
Sugandha Shankar, Cary B. Lopez, and Katherine A. Hubbard
Florida Fish & Wildlife Conservation Commission, St. Petersburg, FL

Light in St. Lucie Estuary before and after Irma: A Snapshot
Amanda Kahn and Jeffrey L. Beal
1South Florida Water Management District, West Palm Beach; 2Florida Fish and Wildlife Conservation Commission, Fort Pierce, FL

Characterization of Elasmobranch Distribution and Habitat Use in the Southern Indian River Lagoon
Grace Roskar, Michael P. McCallister, and Matthew J. Ajemian
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

Cradle to Grave Records of IRL Dolphins
Marilyn Mazzoil, Elisabeth Howells, Adam Schaefer, Steve Burton, Megan Stolen, and Elizabeth Titcomb
1Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; 2Hubbs-SeaWorld Research Institute, Melbourne Beach, FL

Coastal Restoration: A Florida Master Naturalist Special Topic Program
R. LeRoy Creswell and Martin Main
University of Florida Sea Grant, Fort Pierce, FL

Studying Seahorses through Collaboration, Education, and Citizen Science
Nancy Pham Ho and Adeljean L.F.C. Ho
1Coastal Biology Incorporated, Sanford, FL; 2Bethune-Cookman University, Daytona Beach, FL
Inspiring at-Risk Middle-School Girls to Achieve STEAM Careers through a Summer Mentorship Program
Sarah Rhodes-Ondi
Environmental Learning Center, Vero Beach, FL

The Junior Scientists Program: Research by the Next Generation to Preserve Our Natural Resources for All Generations
M. Dennis Hanisak¹, Yasmin Ortiz¹,², John Hart¹, David Heuberger³, and Sarah Rhodes-Ondi³
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Indian River State College, Vero Beach FL; ³Indian River Land Trust, Vero Beach, FL

Closing Comments and Transition to Poster Session & Reception
1730 - 1900 Poster Session & Reception (Open to the public, too!)

Posters will be displayed all day in the Education Annex (Posters #1-30) and the Gallery (Posters #31-40). During the poster session, presenters of odd-numbered posters will be at their posters between 1730 and 1815; presenters of even-numbered posters will be at their posters between 1815 and 1900.

There will be a coffee station at both locations during breaks. We also encourage students to be at their posters during the second half of lunch break.

1. **Organic Contaminants as Ecological Markers in Young-of-the-Year Scalloped Hammerhead Sharks**
   Douglas H. Adams¹ and Kady Lyons²
   ¹Florida Fish and Wildlife Conservation Commission, Melbourne, FL; ²California State University Long Beach, Long Beach, CA

2. **Go with the Tide: Impact of High Water on Boring Sponge Establishment**
   Katie Adams, Jesse Blount, Elizabeth Boggs, Cynthia Maza Perez, Sheridan Strang, Ayssel Tanbari, Iris J. Fang, and Linda J. Walters
   University of Central Florida, Orlando, FL

3. **Identification of Bottlenose Dolphin Prey within the IRL, Utilizing Images Collected during Observed Dolphin Feeding Behaviors**
   Dan Albrecht¹, Kaitlin Grell¹, Dana Katz¹, Jordan Waldron¹, Brandy Nelson², Elizabeth Murdoch Titchcomb², and Marilyn Mazzoli²
   ¹Florida Atlantic University, Boca Raton, FL; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

4. **Survey of Mosquito Populations in the Crab Burrows of the Coastal Oaks Preserve**
   Lauren Amos¹,², Jaime Vazquez¹,², Kyle Juarez¹,², Rebeca Naveda¹,², Andrew Cassera¹,², and Ben Worthley¹,²
   ¹Vero Beach High School, Vero Beach, FL; ²Junior Scientists Program

5. **Assessing the Role of Estuarine Impoundments and Marine Mammal Exclusion Devices on Red Drum Movement Patterns**
   Steven Baker¹, Eric Reyier², Bonnie Ahr², and Geoffrey Cook¹
   ¹University of Central Florida, Orlando, FL; ²Integrated Mission Support Services, Kennedy Space Center, FL

6. **Effect of Water Quality Sterilization Methods on Survival and Growth of Seagrass Fragments**
   Joshua Bantillo¹ and Kathryn A. Tiling²
   ¹Indian River State College, Fort Pierce, FL; ²Florida Oceanographic Society, Stuart, FL

7. **Hurricane Irma Effects on St. Lucie Estuary Water Quality Assessed by a Surface Water Flow through System**
   Sarah Bornhoeft and Cassondra Thomas
   South Florida Water Management District, West Palm Beach, FL

8. **The Application of Ultraviolet Exposure to Prevent Biofilm Formation and Reduce Invasive Species Transport**
   Cierra Braga, Kelli Hunsucker, Harrison Gardner, and Geoffrey Swain
   Florida Institute of Technology, Melbourne, FL

9. **Friend or Foe: Effects of Wrack Accumulation on Mangrove Growth in Mosquito Lagoon**
   Julia Carlin, Noah Friedland, Taylor Martin, Tori Golston, Melinda Paduani, Rebecca Sweatman, Michelle Shaffer, Suzanne Connor, Melinda Donnelly, and Linda Walters
   University of Central Florida, Orlando, FL
10. Influence of Culverts on Mangrove Fouling Communities in the Coastal Oaks Preserve
Nicole Cicco\textsuperscript{1,3}, Tommy Dalton\textsuperscript{1,3}, William Long\textsuperscript{1,3}, Dylan Ruggieri\textsuperscript{1,3}, and Cassidy Wagner\textsuperscript{1,3}
\textsuperscript{1}Vero Beach High School, Vero Beach, FL; \textsuperscript{2}Indian River Charter High School, Vero Beach, FL; \textsuperscript{3}Junior Scientists Program

11. Baseline Habitat Characterization within the Coastal Oaks Preserve
Daniel Colbert\textsuperscript{1,3}, Isabella Thompson\textsuperscript{1,3}, Sara McFarlane\textsuperscript{1,3}, and Alexander Harrison\textsuperscript{1,3}
\textsuperscript{1}Vero Beach High School, Vero Beach, FL; \textsuperscript{2}Sebastian River High School, Sebastian, FL; \textsuperscript{3}Junior Scientist Program

12. Use of Surface Elevation Tables to Measure Sediment Elevation Changes Due to Living Shoreline Restoration
Glenn Coldren\textsuperscript{1,3}, Clayton Sims\textsuperscript{2}, and Vincent Encomio\textsuperscript{3}
\textsuperscript{1}Indian River State College, Fort Pierce, FL; \textsuperscript{2}Florida Atlantic University, Jupiter, FL; \textsuperscript{3}Florida Oceanographic Society, Stuart, FL

13. Tracking the Changes in Quality of Water as It Moves through the Coastal Oaks Preserve
Kaitlyn Conklin\textsuperscript{2,4}, Juliette D’Alessandro\textsuperscript{2,4}, Connor Riley\textsuperscript{1,4}, Per Sander\textsuperscript{1,4}, and Shania Suarez\textsuperscript{1,4}
\textsuperscript{1}Vero Beach High School, Vero Beach, FL; \textsuperscript{2}Sebastian River High School, Sebastian, FL; \textsuperscript{3}Indian River Charter High School, Vero Beach, FL; \textsuperscript{4}Junior Scientists Program

14. Assessing Genetic Diversity within Populations of Smooth Cordgrass to Ensure Effective Restoration Efforts
Michelle Gaynor, Linda Walters, and Eric Hoffman
University of Central Florida, Orlando, FL

15. Habitat Use by Bottlenose Dolphins in the Indian River Lagoon
Rachael Grelle\textsuperscript{1}, Scott Markwith\textsuperscript{1}, Marilyn Mazzoil\textsuperscript{2}, Elizabeth Murdoch Titcomb\textsuperscript{2}, and Richard Paperno\textsuperscript{3}
\textsuperscript{1}Florida Atlantic University, Boca Raton, FL; \textsuperscript{2}Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; \textsuperscript{3}Florida Fish and Wildlife Commission, Melbourne, FL

Shan Guruvadoo\textsuperscript{1}, Gregory Dusek\textsuperscript{2}, Chris Zervas\textsuperscript{2}, Colleen Roche\textsuperscript{2}, and Rachel Krasna\textsuperscript{2}
\textsuperscript{1}Bethune-Cookman University, Daytona Beach, FL; \textsuperscript{2}National Ocean Service, NOAA, Silver Spring, MD

17. Interannual Variability in the Indian River Lagoon, Florida, Measured by a Network of Environmental Sensors
M. Dennis Hanisak and Kristen S. Davis
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

18. Oyster Reef Restoration and Living Shoreline Stabilization: Impacts on Infaunal Communities in Shallow-Water Estuaries
Katherine Harris and Aiesha Stevens
University of Central Florida, Orlando, FL

19. How Does Restoration Influence Carbon Cycling in Oyster Reefs? An Evaluation of CO\textsubscript{2} Emissions and Microbial Activity in Restored Oyster Reefs of the Indian River Lagoon
Nia R. Hurst, Bryan Locher, and Lisa G. Chambers
University of Central Florida, Orlando, FL

20. Hydrodynamic Modeling of the Indian River Lagoon
Mingshun Jiang
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
21. The Effects of Nutrient Treatments on *Rhizophora mangle* Growth and Survival
Kamelah Jones¹, Melinda Donnelly¹, Richard Baptiste², Jeff Beal³, Annie Roddenberry³, and Paul S. Wills²
¹University of Central Florida, Orlando, FL; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ³Florida Fish and Wildlife Conservation Commission, Fort Pierce, FL.

22. The Search for Florida East Coast Diamondback Terrapins (*Malaclemys terrapin tequesta*) in the Southern Indian River Lagoon
Richard C. Jones¹, Nancy Pham Ho², Emily Dark³, Jon A. Moore¹, and Jeffrey Herr¹
¹Florida Atlantic University, Jupiter, FL; ²Coastal Biology Incorporated, Sanford, FL; ³Florida Department of Environmental Protection-Indian River Lagoon Aquatic Preserves, Fort Pierce, FL.

23. Utilizing a Molecular Protocol for the Identification of Hybrid Western Atlantic Seahorses, *Hippocampus erectus × H. reidi*
Alexandra Katz¹, Nancy Pham-Ho², and Jeff Bush¹
¹Vero Beach High School, Vero Beach, FL; ²Coastal Biology, Inc., Gainesville, FL.

Phyllis A. Klarmann¹, Gretchen Ehlinger², Patricia Gorman¹, Amanda McDonald¹, Michael Simmons², Patrick Pitts³, and Dave Rudnick⁴
¹South Florida Water Management District, West Palm Beach, FL; ²United States Army Corps of Engineers, Jacksonville, FL; ³United States Fish & Wildlife Service, Vero Beach, FL; ⁴Everglades National Park, Homestead, FL.

25. Assessment of Oyster (*Crassostrea virginica*) Health in Natural vs. Restored Reefs in the Northern, Central and Southern Indian River Lagoon, Florida
Susan Laramore¹, Elizabeth Urban-Gedamke¹, Carolyn Sinacore¹, Emily Davidson¹, Alycia Shatters¹, Erica Rose¹, Reika Yu², Jeffrey Beal³, Emily Dark⁴, and Matthew R. Anderson⁴
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Boston University, Boston, MA; ³Florida Fish and Wildlife Conservation Commission, Fort Pierce, FL; ⁴Florida Department of Environmental Protection-Indian River Lagoon Aquatic Preserves, Fort Pierce, FL.

26. Early Impacts of Restoration on Nutrient Cycling of Oyster Reefs in Mosquito Lagoon
Bryan Locher, Nia Hurst, and Lisa G. Chambers
University of Central Florida, Orlando, FL.

27. Juvenile *Tursiops truncatus* Case Study: Monofilament Entanglement Damage and Recovery
Wendy Marks¹, Adam M. Schaefer¹, Annie Page-Karjian¹, Robert Lyman², and Steve P. Burton¹
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Animal Emergency and Referral Center, Fort Pierce, FL.

28. Habitat Suitability for Snook in Indian River Lagoon using GIS and Acoustic Telemetry
Manuel McIlroy¹ and Joy Young²
¹Florida Atlantic University, Boca Raton, FL; ²Florida Fish and Wildlife Commission, Tequesta, FL.

29. Nutrient Content and Restoration Ability of Wrack on Living Shorelines in the Indian River Lagoon
Tasnim Mellouli, Lisa Chambers, Janet Ho, and Linda Walters
University of Central Florida, Orlando, FL.
30. Assessing Treatment Wetland Efficacy in Stormwater Treatment Utilizing Native Wetland Plants
   Timothy R. Murphy, Samuel Mwenda, Adeljean L. Ho, and Hyun J. Cho
   Bethune-Cookman University, Daytona Beach, FL

31. Quantifying Movement Patterns and Nursery Habitat Use of Endangered Scalloped Hammerhead Sharks along the Canaveral Bight
   Olivia Myers¹, Eric Reyier², Bonnie Ahr², and Geoffrey Cook¹
   ¹University of Central Florida, Orlando, FL; ²Kennedy Space Center Ecological Program, Kennedy Space Center, FL

32. Impact of Wrack Accumulation on Living Shoreline Stabilization
   Jessica Needham, Michelle Shaffer, Rebecca Sweatman, Melinda Donnelly, and Linda Walters
   University of Central Florida, Orlando, FL

33. Nekton Response to Habitat Restoration: A Case Study from Lake Worth Lagoon, Florida
   Richard Paperno¹, Scott Markwith², Erin McDevitt³, Eric Anderson⁴, and James Whittington¹
   ¹Florida Fish and Wildlife Conservation Commission, Melbourne, FL; ²Florida Atlantic University, Boca Raton, FL; ³Florida Fish and Wildlife Conservation Commission, West Palm Beach, FL; ⁴Palm Beach County Department of Environmental Resources Management, West Palm Beach, FL

34. Plastics under a Microscope: Accumulation of Microplastics in Oyster Spat in Mosquito Lagoon
   Megan Robbins and Linda Walters
   University of Central Florida, Orlando, Florida

35. Relationships between Water Quality and the Microbiome of Elasmobranchs in the Southern Indian River Lagoon
   Grace Roskar¹, Matthew J. Ajemian¹, Brandie Brooks², Luke Yrastorza¹, and Adam M. Schaefer¹
   ¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²University of North Florida, Jacksonville, FL

36. The Pine School Lemelson-MIT InvenTeam: Giving "Eyes and Ears" to ORCA's Kilroy"
   Ahmed Samar, George Ma, and Faith Hill
   The Pine School, Hobe Sound, Florida

37. Assessing the Effects of Oyster Reef Restoration on Macroinvertebrate Assemblages in Mosquito Lagoon, FL
   Adam R. Searles and Geoffrey Cook
   University of Central Florida, Orlando, FL

38. How Destructive is Lake Okeechobee Outflow? A Comparison of Watershed Runoff and Lake Okeechobee Releases on Macrobenthic Communities
   Michelle Stephens, Sherry Reed, and Jessica Lunt
   Smithsonian Marine Station, Fort Pierce, FL

39. Development of a Statistical Model to Predict Percent Cover of Benthic Organisms Present in the Indian River Lagoon
   Ann Wassick, Kelli Hunsucker, and Geoff Swain
   Florida Institute of Technology, Melbourne, FL

40. Microbial Source Tracking of Bacterial Pollution in the North Fork of the St. Lucie Estuary
   Lynn E. Wilking, Rachel A. Brewton, Jordan A. Madio, and Brian E. Lapointe
   Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL