IRL COUNCIL
STEM ADVISORY COMMITTEE

This meeting is open to the public

February 11, 2025

1:30 PM – 4:30 PM

Historic Sebastian Elementary School 1235 Main Street, Sebastian, FL 32958

Remote *Link:* https://us02web.zoom.us/j/87313385768

The order of items appearing on the agenda is subject to change during the meeting and is at the discretion of the presiding officer. Anyone wishing to speak on any item is requested to complete a speaker's card.

1. **Call to Order and Pledge of Allegiance** (Dr. Chuck Jacoby, Chair)
2. **Introductions** (Dr. Chuck Jacoby, Chair)
3. **Election of Officers** (Kathy Hill)

   Requested Action: Motion to elect nominated Chair and Vice Chair for Calendar Year 2025.
4. **Agenda Revisions** (Chair)
   Note any known changes and inquire if any members have suggested revisions.
5. **Consent Agenda** (Chair)

   a. Approve November 11, 2024, STEM minutes
   b. Approve Fiscal Year 2026 Tentative Budget
   c. Approve Fiscal Year 2026 EPA Workplan
   d. Approve Fiscal Year 2026 EPA BIL Workplan

   Requested Action: Motion to approve the Consent Agenda.
6. **Public Comment**
7. **Water Quality Reports**
   a. Northern and Central IRL (Lauren Hall, SJRWMD)
   b. Southern IRL (Melanie Parker, SFWMD)

Minutes

2026 Budget

Workplans

8. **Presentation**

Runoff to Resilience – Smart Watersheds

Matt Rea, Director of Technical Partnerships, Brightstorm, a program of The Nature Conservancy, and Jennifer Carpenter, Deputy Executive Director of Conservation & Government Relations, The Nature Conservancy Florida

9. **Old Business**

None

10. **New Business**

a. Fiscal Year 2026 Water Quality Restoration RFP (Daniel Kolodny) **Water Quality**

Requested Action: Motion to recommend that the IRL Council Board of Directors accept the IRLNEP STEM Advisory Committee recommendations and approve the final ranked list of FY 2026 Water Quality Restoration proposals; fund the top proposals contingent and consistent with available funds and budgetary authority; and authorize staff to negotiate and enter into contracts with those applicants.

b. Fiscal Year 2026 Habitat Restoration RFP (Daniel Kolodny) **Habitat Rest**

Requested Action: Motion to recommend that the IRL Council Board of Directors accept the IRLNEP STEM Advisory Committee recommendations and approve the final ranked list of FY 2026 Habitat Restoration proposals; fund the top proposals contingent and consistent with available funds and budgetary authority; and authorize staff to negotiate and enter into contracts with those applicants.

c. Fiscal Year 2026 Community-Based Restoration RFP (Daniel Kolodny) **Comm-Based Rest**

Requested Action: Motion to recommend that the IRL Council Board of Directors accept the IRLNEP STEM Advisory Committee recommendations and approve the final ranked list of FY 2026 Community-Based Restoration proposals; fund the top proposals contingent and consistent with available funds and budgetary authority; and authorize staff to negotiate and enter into contracts with those applicants.

d. Fiscal Year 2026 Science and Innovation RFP (Daniel Kolodny) **Science and Inn**

Requested Action: Motion to recommend that the IRL Council Board of Directors accept the IRLNEP STEM Advisory Committee recommendations and approve the final ranked list of FY 2026 Science and Innovation proposals; fund the top proposals contingent and consistent with available funds and budgetary authority; and authorize staff to negotiate and enter into contracts with those applicants.

e. Invitation to Bid 2024-01: One 2025 Tidewater 2210 Carolina Bay Boat with motor and trailer **Inv to Bid**

Requested Action: Motion to recommend that the IRL Council Board of Directors authorize staff to enter into negotiations and contracting with the lowest bidder in accordance with established procurement procedures.

11. IRLNEP Staff Reports

Ex Dir Report

a. Community Engagement Update (Kathy Hill)
b. Information Technology and Data Science Update (KJ Ayres-Guerra)
c. IRL Project Update (Daniel Kolodny)
d. Executive Director Report (Duane De Freese)

12. Final Comments (Committee, Staff, Public)

13. Next Meeting

Tuesday, May 6, 2025, at 1:30 p.m.
Historic Sebastian Elementary School 1235 Main Street, Sebastian, FL 32958

14. Adjourn

NOTE: If a person decides to appeal any decision made by the Board with respect to any matter considered at such meeting or hearing, he or she will need a record of the proceedings, and that, for such purpose, he or she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based. Section 286.0105, Florida Statutes (2014).

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 48 hours before the workshop/meeting by contacting: Erin Bergman at (314) 347-5854. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800) 955-8771 (TDD) or 1(800) 955-8770 (Voice). For more information, you may contact: Erin Bergman, IRL Council, 1235 Main St, Sebastian, FL 32958, (314) 347-5854, or by email at bergman@irlcouncil.org .

IRL COUNCIL
STEM ADVISORY COMMITTEE

Minutes from the meeting of

November 12, 2024

1:30 PM

Historic Sebastian Elementary School, 1235 Main Street, Sebastian, FL 32958

In-person Attendance: Aaron Adams, Kyle Bartow, Erin Cartmill, Bob Day, Olivia Escandell, Lauren Hall, Chuck Jacoby, Elizabeth Kelly, Melanie Parker, Mitch Roffer, Loraé Simpson, Wendy Swindell, Derek Tremain, Charlie Venuto, Kelly Young

Online Attendance: J. Cho, David Cox, Hannah Herrero, Lisa Krimsky, Malcolm McFarland, Dale McGinnis, Emily Ralston, Chad Truxall, Linda Walters, Wendy Noke-Durden, Leesa Souto

In-person Guests: Tiffany Simpson, Stacy Cecil, Melissa Meisenburg, Sara Wappes, Doug Scheidt, Lauren Kleiman, Christine Eastwick, Steven Bostel, Pete Eggert, Thomas Heller, Holly Sweat, Jeff Eble, Tyler Deal

Online Guests: Paul Sacks, Virginia Barker, Eric Reyier, Kris Kaufman, Krista McCoy, Lori Morris, Jessy Wayles, KJ Ayres-Guerra

1. **Call to Order and Pledge of Allegiance** (Dr. Chuck Jacoby, Chair)

   Dr. Jacoby called the meeting to order at 1:32 p.m. and led the Pledge of Allegiance.

2. **Introductions** (Dr. Chuck Jacoby, Chair)

   Dr. Jacoby led introductions, and Dr. De Freese introduced Kevin Walker, the Project Manager for the NOAA Transformational Grant.

3. **Agenda Revisions** (Dr. Chuck Jacoby, Chair)

   No agenda revisions were brought forward.

4. **Consent Agenda**(Dr. Chuck Jacoby, Chair)

   a. Approve August 20, 2024, STEM minutes
   b. Approve Fiscal Year 2025 Budget Amendment
   c. Approve Request for Qualification (RFQ) solicitations for Grant Writing

   Requested Action: Motion to approve the Consent Agenda.

   MOTION WAS MADE BY BOB DAY TO APPROVE THE CONSENT AGENDA. MOTION WAS SECONDED BY DAVID COX. MOTION PASSED UNANIMOUSLY.

5. **Public Comment**

None

6. Water Quality Reports

a. Northern and Central IRL (Lauren Hall, SJRWMD)

Ms. Lauren Hall presented the rainfall data from August through October, noting that recent hurricanes have led to increased rainfall. As a result of these rain events, water depth had also risen, and salinity levels had decreased. The decline in temperature is typical for this season. Dissolved oxygen levels remain at approximately 2 mg/L, and low concentrations of chlorophyll-a were reported, with no significant algal blooms observed. Turbidity spikes were noted as a consequence of storms. Changes in Dissolved Organic Matter (FDOM) were recorded at the Vero and Eau Gallie monitoring sites. Overall, water clarity has been maintained.

The 2024 Preliminary Seagrass Cover report indicated growth in specific areas, with significant increases observed at the Northern IRL Epcot and Southern IRL Midway sites. The most notable rises occurred at South Mosquito Lagoon Biolab and North Banana River KARS Park. However, the Central IRL Shooters sites did not show any seagrass coverage.

b. Southern IRL (Dr. Melanie Parker, SFWMD)

Dr. Parker reported that the data was through November 3rd, and the weekly averages covered October 28 through November 3rd. The greatest freshwater inflow has occurred from the Tidal Basin and the C-23 and C-24 Basins. Early September saw a large influx associated with heavy rainfall; the late September peak was due to Hurricane Helene. Hurricane Milton contributed to the early October inflow. There were no releases from Lake Okeechobee.

The salinity for the most recent 7-day period fell into the damaging range for oysters at the HR1 site at the surface and lower stressful ranges on the bottom. The US1 Bridge site was in the lower stressful range. The salinity at the A1A bridge remained in the optimal range. Salinity decreased sharply in September and remained low most of the past couple of months, with a brief increase occurring between rain events. Juvenile oyster (spat) recruitment rates peaked in May and June. Settlement rates began decreasing in July and continued to decrease over recent months when salinities were below optimal (<10) for oysters. The fall months see another peak, but the low salinities have kept larval oyster numbers low.

Oyster density was lower in 2024 but increased slightly during the September survey. This suggests that older adult oysters have survived the lower salinities.

7. Presentations

a. Space Florida Warf Study Update

Mr. Pete Eggert, VP of Environmental Health and Safety at Space Florida, presented the *Wharf Study Update*. The presentation started with an introduction to Space Florida, its mission and the impetus for conducting a study of maritime intermodal transportation. The goal is to provide a sustainable long-term solution to support space transportation operations and meet industry and government needs for an improved quinti-modal transportation system. A robust discussion concluded the presentation.

b. NOAA Transformational Habitat Restoration Grant Award Update

Dr. Duane De Freese, Executive Director of the IRLNEP, gave the *NOAA Transformational Habitat Restoration Grant Award Update.* The timeline and cost value were reported. The responsibilities of the IRLNEP staff were outlined, and Kevin Walker, the Project Manager, was introduced. The details of the progress to date were covered, and the story map of restoration sites and the Socio-Economic Assessment of Data draft have been completed. A list of Project Deliverables was submitted.

8. Old Business

None

9. New Business

2025 IRL Council Meeting Calendar

Ms. Bergman presented the tentative dates. Dates are chosen due to the availability of the Council Chamber space. It was noted that the November 11th meetings fell on Veteran's Day. Ms. Bergman subsequently contacted the City of Sebastian to determine new dates for November meetings and presented this information at the Board of Directors meeting.

Requested Action: Motion to recommend the IRL Council Board of Directors approve the 2025 IRL Council Meeting Calendar.

MOTION WAS MADE BY WENDY SWINDELL TO RECOMMEND THAT THE IRL COUNCIL BOARD OF DIRECTORS APPROVE THE 2025 IRL COUNCIL MEETING CALENDAR WITH NOVEMBER DATES AVOIDING VETERN'S DAY. MOTION WAS SECONDED BY BOB DAY. MOTION PASSED UNANIMOUSLY.

10. IRLNEP Staff Reports

a. Community Engagement Report (Kathy Hill)

Ms. Hill reviewed the metrics for Facebook and Instagram social platforms. The top post had 4.3M views. Six new podcasts are available. The Community Engagement Coordinator's activities were highlighted, and 684 interactions took place in Fiscal Year 2024.

b. Information Technology and Data Science Update (AJ Ayres-Guerra)

Ms. Ayres-Guerra announced two webinars were delivered this quarter, completed courses including the ADA Compliance and the Master Gardener. Ms. Ayres-Guerra sat on the IRC interview panel for the new Lands Asset and Data Manager and worked on the NOAA Required Monitoring Plan.

c. IRL Project Update (Duane De Freese)

Dr. De Freese presented on behalf of Mr. Kolodny that twenty-six projects were completed in Quarter four, with fifteen projects still in progress. Fiscal Year 2025 will see twenty-six new projects beginning.

d. Executive Director Report (Duane De Freese)

Dr. De Freese gave an update on the Executive Director's activities and the impact of the articles in the Frontiers in Marine Science publication. Also highlighted was the work completed by the summer intern, Victoria Carpenter. A request was made for members to complete the survey of the vital signs. The IRL Council will celebrate a decade of progress as a host agency for the IRLNEP and 35 years as a National Estuary Program in 2025.

11. Final Comments (Committee, Staff, Public)

No final comments were made.

12. Next Meeting

Tentative, Tuesday, February 11, 2025, at 1:30 p.m.
Historic Sebastian Elementary School, 1235 Main Street, Sebastian, FL 32958

13. Adjourn

The meeting was adjourned at 3:39 p.m. p.m.

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DRAFT

RESOLUTION NO. 2025-01

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE IRL COUNCIL ADOPTING THE TENTATIVE BUDGET FOR THE 2026 FISCAL YEAR

WHEREAS, the IRL Council was created via Interlocal Agreement to carry out the goals of the Indian River Lagoon National Estuary Program; and

WHEREAS, the IRL Council held a public hearing to consider the tentative Budget;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE IRL COUNCIL, THAT:

Section 1. The Fiscal Year 2026 Tentative Budget is attached as Exhibit "A".

Section 2. The Fiscal Year 2026 Tentative Budget is hereby adopted.

Section 3. This Resolution shall become effective immediately upon passage.

DONE at_____, Florida, this_____day of_____,2025.

By: _____
Joe Earman, IRL Council Chair

ATTEST:

_____
Kim Adkinson, IRL Council Secretary

Approved as to legal form and sufficiency:

_____
Glen J. Torcivia
IRL Council, Legal Counsel

IRL Council
FY 2026 Tentative Budget
Exhibit A

REVENUES	
Federal Section 320	$ 850,000
Federal Infrastructure Investment and Jobs Law Final Year	$ 909,800
IRL License Plate	$ 125,000
Member Contributions	$1,500,000
NOAA Transformational Habitat Year 2	$2,484,320
TOTAL REVENUES	$5,869,120
EXPENDITURES	
Other Expenditures	$4,996,148
IRL Council Strategic Program, IRLNEP 2026 EPA 320 Work Plan, IRLNEP 2026 Infrastructure Work Plan, 2026 NOAA Workplan, 2026 Revenue Unencumbered	
Salaries & Benefits	$ 657,762
Facilities Expenses	$ 38,000
Rent, Utilities, Equipment Maintenance, Communications	
Administrative Costs	$ 79,000
Postage, Office Supplies, Insurance, Printing, Travel, Licenses & Subscriptions, Dues, Professional Development	
Administrative Services	$ 98,210
Legal, Accounting, Auditing, IT Services, Legal Ads	
TOTAL EXPENDITURES	$5,869,120
Agency Balance Beginning of Year	$ 0
Fund Balance - Beginning of Year	$ 0
Fund Balance – End of Year	$ 0

FY 2026 Tentative Budget Expenditure Detail (Narrative)

- OTHER EXPENDITURES ($4,996,148)
    1. IRL Council Strategic Program ($743,633) includes the following:
        a. Water Quality Restoration Project(s) - $350,000
        b. Habitat Restoration Project(s) -$150,000
        c. Community-Based Restoration Project(s) - $140,000
        d. Small grants program - $25,000
        e. IRLNEP Technical Support of Conferences and Workshops - $25,000
        f. USF Technical Support Year 3 - $53,633
    2. IRLNEP FY2026 EPA Workplan ($850,000) includes the following:
        a. Science and Innovation RFP - $200,000
        b. Communication Support: Service contracts for web/graphics/design support, scientific and other publications, other contract support as needed, and expanded social media and support for communication intern. Includes service contracts with IDEAS, Brandt Ronat, Firefly, and O'Hara - $100,726
        c. Biodiversity Inventory - $25,000
        d. 3 Atmospheric Deposition Monitoring Stations - $128,765
        e. 3 Community Engagement coordinators (Salary Only) - $227,509
        f. Harmful Algal Bloom Monitoring Contracts - $150,000
        g. EPA Travel (mandatory) - $18,000
    3. IRLNEP FEDERAL INFRASTRUCTURE INVESTMENT AND JOBS LAW Workplan ($909,800)
        a. Priority Communities Restoration Project(s) - $409,800
        b. Seagrass Nursery Network - $500,000
    4. NOAA Transformational Habitat FY2026 Workplan ($2,484,320) includes the following:
        a. Personnel - $124,000
        b. Contractual - $187,490
        c. Other - $2,136,181
        d. Supplies - $5,000
        e. Indirect - $31,649
    5. FY 2026 Revenue Unencumbered - $8,395

- SALARIES AND BENEFITS ($657,762)
    1. Salaries and 35% fringe rate for the Executive Director, Deputy Director, Chief Operating Officer, Administrative Coordinator, and GIS/IT Scientist.
    2. 35% fringe rate only for the 3 Community engagement coordinators

    Note: Additional $99,000 of staff salary is covered as part of the NOAA Transformational Habitat Workplan.

- FACILITIES EXPENSES ($38,000)
    1. Rent and Leases - $20,000
    2. Equipment Maintenance - $3,000
    3. Equipment and Communications - $15,000

- ADMINISTRATIVE COSTS ($79,000)
    1. Travel General - $25,000
    2. Postage and Mailing - $1,000
    3. Office Supplies - $5,000
    4. Dues, Licenses, and Subscriptions - $25,000
    5. Printing - $3,000
    6. Insurance - $15,000
    7. Staff Training and Professional Development - $5,000

- ADMINISTRATIVE SERVICES ($98,210)
    1. Legal - $35,000
    2. Accounting - $42,000
    3. Auditing - $20,210
    4. IT Services and Compliance - $500
    5. Legal Ads - $500

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For supporting documentation regarding the following:

Fiscal Year 2026 EPA Workplan

Fiscal Year 2026 EPA BIL Workplan

Please refer to the Resolution 2025-01 document, page 3, for information.

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CATEGORY 1: WATER QUALITY RESTORATION

Rank	Applicant	Project	Requested Funding	Cost Share Match	Match %	Total Project Cost	Score	Above 70%?	Eligible?	Funding Amount	Category Total Remaining
											$350,000.00
1	Brevard County	Indian River Lagoon 50+ Quick Connects to Sewer	$350,000	$350,000	50	$700,000	195	89%	**Y**	$350,000	$0
2	City of Port St. Lucie	Septic to Sewer Conversions to Reduce Nitrogen Pollution in Known Hot Spots in the City of Port St. Lucie	$300,000	$300,000	50	$600,000	191	87%	**Y**	$0	$0
3	Grand Harbor Community Association, Inc.	Grand Harbor Stormwater Management Restoration Project	$140,000	$450,000	76	$590,000	146	66%	**N**	$0	$0

Executive Summary

Title of Project	*Brevard County – Indian River Lagoon, 50+ Quick Connects to Sewer*
Lead Organization and Partners:	**Lead Organization:** Save Our Indian River Lagoon Program – Brevard County, Natural Resources Management Department **Partners:** Property owners of at least 50 septic properties within the Indian River Lagoon watershed
Project Locations:	Indian River Lagoon, Brevard County 50+ Quick Connects to Sewer
Key CCMP Vital Sign(s):	***Impaired Waters and Wastewater***
IRLNEP Contribution and Source:	$350,000 (scalable), IRL Council
Partner Match:	$350,000; 50%
Total Project Cost:	$700,000

Project Description: Properties on septic are a source of nutrient pollution to the IRL through septic drain field contributions to groundwater. Converting to sewer effectively eliminates this source of nutrient pollution to the Lagoon. This project will provide funding to convert at least 50 septic properties within the Indian River Lagoon watershed to sewer and will eliminate 375 lbs.-TN/year to the IRL. The 50+ eligible quick connect properties will be approved and reimbursed through the Save Our Indian River Lagoon (SOIRL) – Quick Connect to Sewer Voluntary Grant Program. Approved property owners within the IRL watershed are eligible for up to $12,000 (for gravity main connection) or up to $24,000 (for force main connection or gravity main connection that requires a pump) to cover costs related to connecting to sewer, decommissioning the existing septic tank(s), and restoring the site to pre-existing condition. This project is scalable; for example, to connect 25 properties, the requested funding would be halved.

Key Outputs (Deliverables): Brevard County will provide the following deliverables: estimated total nutrient reduction to the IRL (lbs.-TN/year), a property list, a copy of the approved SOIRL Quick Connect Grant Program application for each property, itemized invoice(s) for each property, proof of payment from the County to the property owner or designated plumber for each property, proof of passing final sewer inspection from the designated municipality, and proof of passing final FDOH inspection of septic abandonment for each property.

Key Outcomes (Benefits to the IRL): The short-term benefits of the 50+ Quick Connects to Sewer Project will be the immediate elimination of 375 lbs.-TN/year to the Indian River Lagoon watershed. Medium-to-long term benefits to the IRL include (a) a sustained increase in civic awareness and engagement with IRL issues, (b) a sustained reduction in groundwater pollution to the IRL as the removed septic systems will no longer contribute to pollution to the watershed, and (c) a reduction of risks to human health and marine life by eliminating potential pathogen contamination from failing septic systems.

Water Quality Restoration - Executive Summary

Title of Project	Septic to Sewer Conversions to Reduce Nitrogen Pollution in Known Hot Spots in the City of Port St. Lucie
Lead Organization and Partners	City of Port St. Lucie (lead organization), Harbor Branch Oceanographic Institute-Florida Atlantic University (HBOI/FAU, partners)
Project Location	The project location is in central Port St. Lucie near the Sagamore Waterway, Elkcam Waterway, and Monterrey Waterway, which discharge to the North Fork of the St. Lucie River. The project area is approximately 4,301 acres. Latitude: 27.293690, Longitude: -80.353317.
Key CCMP Vital Sign(s)	Impaired Waters, Wastewater, Monitoring and Data Sharing, Citizen Engagement and Education
IRLNEP Contribution and Source	$300,000, IRL Council
Partner Match	$300,000, 50%, cash from property owners in known Hot Spots
Total Project Cost	$600,000

Project Description
To determine sources of degraded water quality in the North Fork of the St. Lucie Estuary, the City of Port St. Lucie contracted with HBOI/FAU to conduct the 2018-2020 *Microbial Source Tracking of Bacteria Pollution in the St. Lucie River* study. That study confirmed elevated fecal coliform levels and nutrient concentrations in certain Hot Spots within City limits. The greatest concentrations consistently occurred in densely urbanized areas encompassing the Sagamore, Elkcam, and Monterrey drainage basins, which directly drain into like-named waterways discharging into the North Fork of the St. Lucie River. Aging residential septic systems in those areas contribute to nutrient concentrations and coliform bacterial count pollution.

IRLNEP funding will enable Port St. Lucie to expand its ongoing septic to sewer conversion program. The proposed Hot Spot Septic Grant Program will support converting 69 residential septic systems in the target areas to Port St. Lucie's low-pressure sanitary sewer system. Targeted property owners within the known Hot Spots will be eligible to participate in the septic conversion grant program, covering 50% of their costs. The City will also offer 10-year interest-free connection fee loans to participating owners to cover remaining conversion costs. The project is expected to benefit the Indian River Lagoon by removing 6.12 pounds of total nitrogen per converted septic system annually or 422.28 pounds of total nitrogen annually. Nutrient pollution is the main cause of toxic algal blooms in the Indian River Lagoon system. Fewer algal blooms will protect marine life and preserve key habitat.

Map and Photos
See attached.

Key Outputs (Deliverables)
69 homes converted from using aging septic systems to the City's sanitary sewer system; elimination of a combined total of 422.28 pounds of nitrogen annually.

Key Outcomes (Benefits to the IRL)
Short-term benefits: Enhanced community understanding in the Hot Spot neighborhoods; initial nutrient reductions
Mid-term benefits: Incentivizing the conversion of 69 septic systems in the Hot Spot neighborhoods; significant nutrient reductions; improved protection of the Indian River Lagoon
Long-term benefits: Fewer algal blooms; habitat improvements; restoration of biological diversity

EXECUTIVE SUMMARY

Title of Project	Grand Harbor Stormwater Management Restoration Project
Lead Organizations and Partners	Grand Harbor Community Association, Inc. (GHCA); with Grand Harbor Audubon as a partner on selected issues
Project Location	The Project is located in Grand Harbor, Indian River County (Latitude 27° 40' 59.5339" N, Longitude 80° 24' 18.8383" W)
Key CCMP Vital Sign (s)	Stormwater, Impaired Waters; Citizen Engagement/Education
IRLNEP Contribution and Source	$140,000
Partner Match	$450,000
Total Project Cost	$590,000

Project Description

Grand Harbor, a 930-acre residential and golfing community, has an extensive, but deteriorating infrastructure of 28 interconnected stormwater retention ponds, which ultimately direct stormwater to our mangrove estuary, which in turn flows to the Indian River Lagoon (IRL).

There is extensive erosion around the ponds, which has not only increased siltation, but also reduced the size of the planted littoral zones (shallow shelves). Silting has significantly affected the flow of water between ponds and reduced the permanent volume of water the ponds hold, adversely affecting retention time, and flood control capabilities.

Two years ago, GHCA, following the Developers' transfer of the community to the residents, began a multi-year program of restoring our stormwater management system, initially focusing on the highest priority ponds (Phase 1) which were so classified because of their degree of deterioration with respect to loss of stormwater holding capacity and vegetation/wildlife habitat due to erosion and siltation. Future phases will address the remaining ponds in addition to our estuary which connects to the IRL.

We are seeking funding from IRLC to accelerate completion of Phase 1 of our overall restoration program. There are 10 Phase 1 ponds, of which 7 will have been restored by the start of the IRLC's FY2026. For FY2026, the Project will focus on the remaining three Phase 1 ponds.

Key Outputs (Deliverables)

It is estimated that this Project will result in an annual reduction of 15.2 pounds of TN discharging to the IRL, and 6.8 pounds of TP. When all 28 of the ponds are restored, it is estimated that there will be an annual reduction of 165.6 pounds of TN and 53.1 pounds of TP. Additionally, this Project will enhance the stormwater holding capacity of these three ponds by an estimated 13 acre-feet (37% improvement); restore and stabilize a total of over 6,500 linear feet of shoreline; and, replant an estimated 1.5 acres of native nutrient reducing littoral vegetation (a 50% improvement).

Key Outcomes (Benefits to the IRL)

Short-term (1-2 years): This Project will restore three high priority ponds to their original design specifications to the extent practicable, which in turn will reduce the volume of stormwater and nutrient loads going into the IRL.

Medium-term (3-4 years): This Project will complete our Phase 1 program to restore our most critical ponds and allow us to move forward to restore Phase 2 ponds and our estuary.

Long-term (5-10+ years): Grand Harbor's program of restoration and ongoing maintenance of all stormwater ponds and estuary will ensure that stormwater volume and nutrient load reductions are sustained, thereby assisting in the achievement of nutrient reduction targets for the IRL.

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CATEGORY 2: HABITAT RESTORATION										Funding Amount	Category Total Remaining
Rank	Applicant	Project	Requested Funding	Cost Share Match	Match %	Total Project Cost	Score	Above 70%?	Eligible?		$150,000.00
1	Hubbs-SeaWorld Research Institute	Coconut Point Shoreline Restoration – Phase 1 Design & Engineering	$59,169	$59,822	50.3	$118,991	183.2	83%	Y	$59,169	$90,831
2	Jupiter Narrows Conservation Alliance, Inc.	Protecting & Restoring Our Mangrove-Seagrass Ecosystem in the Jupiter Narrows Project	$75,000	$150,000	66.7	$225,000	176.2	80%	Y	$75,000	$15,831

Executive Summary

Title of project	Coconut Point Shoreline Restoration – Phase 1 Design & Engineering
Lead organization and partners	Hubbs-SeaWorld Research Institute, Brevard Zoo, Brevard County EEL Program
Project location	Melbourne Beach, FL (28.010518, -80.536229)
Key CCMP vital signs	Seagrasses, filter feeders, living shorelines, climate ready estuary
IRLNEP contribution and source	$59,169; IRL Council
Partner match	$59,822 (50% match)
Total project cost	$118,991

Project Description:
The Coconut Point Shoreline Restoration project is an urgent, multi-phase effort to restore and enhance impaired shoreline along the Indian River Lagoon (IRL). This support request for habitat restoration (category 2) focuses on removing a 250 ft seawall and restoring up to 500 ft of historic seagrass, shellfish and shoreline habitat on two abutting Melbourne Beach properties managed respectively by Hubbs-SeaWorld Research Institute (HSWRI) and the Brevard County Environmentally Endangered Lands (EEL) program. The importance of the project lies in its potential to protect important conservation assets and restore critical habitats to improve the ecological health of the IRL.

The Phase 1 objective proposed here is to develop a feasible, 'shovel-ready' design and engineering plan to (1) protect critical conservation assets threatened by reoccurring flooding, (2) safeguard the rapidly eroding shoreline of Brevard County's Coconut Point Sanctuary, and (3) restore historic shellfish, seagrass, and shoreline habitats. With engineering support from Tetra Tech and in coordination with project partners, we intend for this effort to serve as a model for resilient and sustainable IRL shoreline restoration.

Key Outputs (Deliverables):
Task 1 planning deliverable (Q2): Summary Site Report. Details pilot seagrass outplanting and oyster recruitment survey results, wetland and boundary delineation, GIS shoreline erosion assessment, stakeholder engagement, a "no action" vulnerability assessment, and two candidate conceptual engineering designs.
Task 2 permitting deliverable (Q4): State and federal permit application packages. Based on advisory committee, stakeholder, and agency feedback and 90% engineering design plan.

Key Outcomes (Benefits to IRL):
Short-term Outcomes (1-2 years): Phase 1 will deliver a fully developed and permitted engineering plan that will lay the groundwork for efficient implementation of subsequent construction and monitoring phases.
Medium-term Outcomes (3-4 years): Installation and monitoring of both constructed (man-made) and living design components to maximize erosion and flood control and restoration of seagrass, shellfish, and shoreline habitats.
Long-term Outcomes (5-10+ years): Improvement to the ecological conditions of the restoration site, with establishment of a resilient, self-sustaining shoreline ecosystem.

EXECUTIVE SUMMARY:

Title of Project	Protecting & Restoring Our Mangrove-Seagrass Ecosystem in the Jupiter Narrows Project
Lead Organization and Partners:	Jupiter Narrows Conservation Alliance, Inc. (JNCA)
Project Location:	Indian River/Intracoastal Waterway in the vicinity of S. Beach Road Bridge (Cato's Bridge) within the Jupiter Inlet Aquatic Preserve. 26° 57' 16.302" N; 80° 04' 41.296" W
Key CCMP Vital Sign(s):	Habitat Quality: Seagrasses; Spoil Islands
IRLNEP Contribution and Source:	$75,000.00, IRL Council
Partner Match:	$150,000.00, 67% JNCA
Total Project Cost:	$225,000.00

Project Description:

The Protecting & Restoring Our Mangrove-Seagrass Ecosystem in the Jupiter Narrows Project is an innovative pilot project that consists of constructing approximately 240 linear feet (lf) of wave-attenuating breakwaters, mangrove toe protection, mangrove plantings and seagrass enhancement (.50 acres) in the Jupiter Inlet area of the IRL. This project directly addresses the CCMP Vital Signs for Habitat Quality: Seagrasses and Spoil Islands. Secondary project effects include other CCMP Vital Signs of Living Resources: Biodiversity and Forage Fisheries as well as Communicate-Coordinate-Collaborate: Citizen Engagement and Education. The project will utilize environmentally friendly materials and innovative designs that mimic natural processes to sustainably reduce erosion, wave energy from storms and boat wakes, and habitat degradation, thereby enhancing the ecosystem's resilience. The project is expected to start upon receipt of the fully executed agreement, anticipated by October 1, 2025, and to be completed by June 30, 2026.

Key Outputs (Deliverables):

- **Seagrass Habitat Enhancement**: .50 Acres of enhanced Seagrass Habitat
- **Spoil Island Restoration and Protection**: 240 lf of wave-attenuating breakwaters, mangrove toe protection and Mangrove Habitat
- **Final Project Report:** Comprehensive report summarizing the results, lessons learned, insights and recommendations for future IRL projects.

Key Outcomes (Benefits to the IRL):

Short-Term Benefits

1. Accelerated restoration and removal of stressors to seagrasses and mangroves within the southernmost IRL.
2. Spoil island enhancement and mangrove habitat restoration
3. Increased biodiversity and restore sustainable diverse forage fish habitat

Medium-Term Benefits

1. Enhanced Ecosystem Services: Reduced wave energy and increased carbon sequestration.
2. Sustainable Fisheries: Enhanced nursery habitat supports adjacent fishery populations.
3. Community Engagement and Education: Greater public conservation awareness and support.

Long-Term Benefits

1. Resilient Ecosystem: Self-sustaining seagrass and mangrove ecosystem resilient to changes.
2. Economic Benefits: Boost in tourism and water-related recreational activities.
3. Climate Change Mitigation: Significant carbon sequestration by mature habitats.

CATEGORY 3: COMMUNITY-BASED HABITAT RESTORATION

Rank	Applicant	Project	Requested Funding	Cost Share Match	Match %	Total Project Cost	Score	Above 70%?	Eligible?	Funding Amount	Category Total Remaining
											$150,000.00
1	Coastal Connections, Inc.	Reducing Debris in the IRL Part 2: Developing a long term management plan for monofilament recycling across Indian River County	$35,650	$36,352	50.5	$72,002	207.3	86%	**Y**	$35,650.00	$104,350.00
2	Indian River Mosquito Control District	Indian River Mosquito Control District Living Shoreline Improvement Project	$25,000	$13,793	35.6	$38,793	174.6	73%	**N**	$0.00	$104,350.00

Executive Summary

Project Title:	**Reducing Debris in the IRL Part 2: Developing a long term management plan for monofilament recycling across Indian River County**
Lead Organization and Partners:	**Lead Organization:** Coastal Connections, Inc. (CCinc) **Partners:** Florida Fish and Wildlife Conservation Commission
Project Location:	40+ bin locations across Indian River County, with multiple bins serving priority communities: Gifford (27.67786° N, 80.38716° W), Vero Beach (27.63885° N, 80.39484° W), and Florida Ridge (27.58673° N, 80.37794° W)
CCMP Vital Signs:	Trash-Free Waters (Healthy Communities), Citizen Engagement (Communicate-Collaborate-Coordinate), Species of Concern (Living Resources)
IRL-NEP Contribution and Source:	$35,650 IRL Council
Partner Match:	$38,514 = Volunteer In-Kind Match (108.03% Match)
Total Project Cost:	$35,650

Project Description:

The state-wide Monofilament Recovery and Recycling Program is overseen and managed by the Florida Fish and Wildlife Conservation Commission (FWC) to create a coordinated and strategic effort to remove marine debris in the form of fishing line from waterways to reduce harmful and preventable wildlife entanglements and habitat degradation. In 2024 CCinc revitalized the monofilament recycling program in Indian River County. To continue the success of this program, tubes need to undergo annual maintenance and continue to be monitored and managed while a long-term funding strategy is developed to sustain the program well into the future. With the help of the IRL Council, CCinc will be able to continue to educate and involve our community, manage and monitor the monofilament recycling program to remove fishing-related debris from the environment and help federally protected sea turtles survive and thrive in their Indian River Lagoon home.

Key Outputs:

As a community restoration project, the revitalization of the “Fishing Line Recycling'' program in Indian River County is primarily focused on involving our community members to make a big difference for the health of the Lagoon and all who call it home. Throughout the timeline of this project, CCinc will engage community members through quarterly sorting days, our tube monitoring schedule, materials repurposing, and an Adopt A Tube sponsorship opportunity, which will allow for more widespread outreach to local businesses and service groups. By engaging our community, more people will be aware of this program and want to do their part to contribute to restoring the lagoon and removing marine debris from our environment.

Key Outcomes:

There will be many Short-term, Mid-term, and Long-term benefits made from revitalizing this program, but none are more notable than the number of community members that will be educated and included in restoring the IRL, and the poundage of monofilament line that is diverted from the environment. This will be done through volunteer engagement serving a cumulative 3,483 service hours within the first two years of the program through the station surveys, quarterly community sorting days, and a new community sponsorship opportunity. Through all of these engagements, our community will become more aware of the monofilament recycling program, and more people will begin to use and become educated about our monofilament recycling tubes, contributing to more monofilament recycling and diversion out of our ecosystem. We also aim to see a decrease in sea turtle and manatee entanglement-related stranding events in Indian River County and the IRL due to a reduction in fishing-related debris along the shoreline and in the water.

Grant Proposal for Community-Based Living Shoreline Restoration

Indian River Mosquito Control District Living Shoreline Improvement Project	
Lead Organization and Partners:	Indian River Mosquito Control District
Project Location:	Northwest shoreline of Water Tower impoundment. Latitude: 27°41'19.65"N Longitude: 80°23'0.98"W
Key CCMP Vital Sign(s):	Living Shorelines
IRLNEP Contribution and Source:	$25,000, IRL Council
Partner Match:	$10,000 28.5%, Indian River Mosquito Control District
Total Project Cost:	$35,000

Project Description

The Indian River Mosquito Control District is seeking the Community-Based Restoration Projects Grant to pursue a living shoreline project to help to stabilize the shoreline of the Water Tower impoundment dike. In the past, the District has always repaired the impoundment dike after major storm events and this location has historically sustained a heavy amount of damage. For the impoundment to function correctly, there is an elevation that needs to be maintained for a specific water level to be achieved. Saltmarsh mosquitos oviposit their eggs in the impounded wetland, so controlling water levels allows for source reduction for reproduction. Last year, the elevation was found to be below the required elevation. This led to the District being unable to effectively control mosquitoes in the area. In response to this, we have been looking for ways to have a more permanent fix to the issue that we've been facing. The plan is to utilize coir logs to reinforce 1,635 linear feet of shoreline to allow planted vegetation to recruit and establish a self-sustaining population. With a team of skilled individuals and the equipment ready to go, we would install the coir logs and bring the impoundment road up to the desired elevation. All work will be conducted in house. After repairs are completed, a planting event would be held to educate and involve volunteers and students in our living shoreline event and the importance of rotational impoundment management.

Key Outputs

- Restoring habitat along ~1635 feet of the lagoon through shoreline stabilization utilizing a living shoreline.
- Perform a volunteer planting event where participants will be educated in the District's goals, the importance of impoundments and our environmental future.
- Reduction of sediment deposition into adjacent wetlands through shoreline reinforcement.
- Monitoring project success through plant mortality replacement and dike restoration to meet required elevations

Key Outcomes

- Short term- Restoration of an impoundment dike ensuring reliable source reduction of mosquito oviposition.
- Medium term- Save taxpayer money in order for allocation to other transformative projects.
- Long term- Reduction of sediment deposition into the adjacent wetlands and lagoon.

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CATEGORY 4: SCIENCE AND INNOVATION

Rank	Applicant	Project	Requested Funding	Cost Share Match	Match %	Total Project Cost	Score	Above 70%?	Eligible?	Funding Amount	Category Total Remaining
											$200,000.00
1	Florida Institute of Technology	Suffocating Sand: Mapping Hypoxia and its Impacts on Benthic Nutrient Fluxes and Sediment Chemistry in IRL. Phase 4	$78,260	$84,147	51.8%	$162,407	198.6	90%	Y	$78,260	$121,740
2	Hubbs-SeaWorld Research Institute	Harmful Algal Bloom Toxin Exposure, Health Impacts, and Minimally Invasive Sampling in Marine Mammal Sentinels in the Indian River Lagoon, Florida	$61,968	$29,111	32.0%	$91,079	187.9	85%	Y	$61,968	$59,772
3	Marine Resources Council	Testing the effectiveness of hybrid living shoreline restoration at a crucial wading bird rookery in the Central Indian River Lagoon	$25,212	$62,632	71.2%	$87,844	160.5	73%	N	$0	$59,772
4	Florida Oceanographic Society	Eco-physiological importance of a diverse seagrass microbiome to control growth in the nursery and build resilience to transplantation stress	$98,600	$32,359	24.7%	$130,959	158.1	72%	N	$0	$59,772

Title of Project	Title: Suffocating Sand: Mapping Hypoxia and its Impacts on Benthic Nutrient Fluxes and Sediment Chemistry in IRL, Phase IV
Lead Organization and Partners:	**Lead Organization**: Florida Tech (Austin Fox Ph.D). **Partners (match):** Brevard County Department of Natural Resources (V. Barker and M. Culver). **Partners (Logistics and Advising):** FWC, SJRWMD, Brevard Zoo
Project Location	This project will be carried out in the IRL/BRL between the Eau Gallie and A1A causeways. Project centered at 28˚17'50"N, -80˚38'25"W.
Key CCMP Vital Signs:	Legacy Loads and Healthy Sediments, Filter Feeders, Harmful Algal Blooms, 21st Century Communities, Monitoring, Science & Technology Innovation
IRLNEP Contribution and Source:	$ 78,260 IRL Council
Partner Match:	$5,388 (FIT) + $78,750 (Brevard County) = (51.8% of total)
Total Project Cost:	$162,398

Project Description:

Building on prior efforts, this study will map hypoxia in IRL over multiple years and investigate biogeochemical consequences of chronic, short-term hypoxia, including decreased capacity to sequester phosphorus, diminished removal of nitrogen and increased sulfide. Quantifying impacts of hypoxia in areas experiencing different extents of hypoxia will help lagoon managers better assess the assimilative capacity of IRL, the foundation of management strategies including TMDLs and BMAPs. These data will assist stakeholders in identifying areas most suited for restoration with increased probabilities of success towards restoration of water, sediment and habitat quality. This is accomplished by adding sediment and redox based metrics to habitat suitability indices (HSI) and working with SJRWMD to incorporate hypoxia and substrate into water quality models. Using a relatively low-cost network of continuous monitoring stations, DO will be tracked with nutrient fluxes and phosphorus sorption capacity measured at sites experiencing different extents of hypoxia throughout the study area between the Eau-Gallie and A1A Causeways. This study supports listed water quality monitoring (nutrient and DO) within the Banana River BMAP (WBID 3057) with several moorings located in small IRL priority communities. These data directly support restoration projects utilizing IRLNEP-funded Seagrass Nurseries to help identify trends in water and substrate quality that contributed to varied outcomes and directly support work by FWC on the NOAA grant. Improved outcomes and improved site selection can promote coastal resilience and improved water quality while addressing IRLNEP 2026 priorities, action items and 2030 CCMP priority areas and monitoring incorporated into BMAPs and TMDLs.

Key Outputs (Deliverables):

Datasets and maps for bottom water dissolved oxygen plus reports showing the extent and duration of hypoxia, the phosphorus sorption capacity and benthic fluxes of N and P from contrasting areas experiencing varying durations of hypoxia.

Key Outcomes (Benefits to the IRL):

Short term: Guidance for stakeholders based on data to date, metrics to quantify hypoxia over a multi-year period linking water quality to natural and restored expansions or changes in seagrass cover and other restoration efforts. **Medium term:** Data to support improved site selection for restoration (e.g., improving metrics for HSI). Incorporation of sediment and water quality data into models used by resource managers (e.g., SJRWMD). **Long term:** Improved water, sediment and habitat quality plus improved public perception resulting from informed placement and enhanced success of restoration projects.

INDIAN RIVER LAGOON NATIONAL ESTUARY PROGRAM
FY 2026 PROPOSAL APPLICATION: Executive Summary

Title of Project	Harmful Algal Bloom Toxin Exposure, Health Impacts, and Minimally Invasive Sampling in Marine Mammal Sentinels in the Indian River Lagoon, Florida
Lead Organization and Partners:	Lead: Hubbs-SeaWorld Research Institute (HSWRI); Partners: Harbor Branch Oceanographic Institute (HBOI), Center for Environmental Sciences and Engineering (CESE)
Project Location	IRLNEP watershed and the IRL-Halifax Buffer Planning Boundary
Key CCMP Vital Sign(s):	Harmful Algal Blooms, Monitoring and Data, Science and Technology Innovation, Species of Concern
IRLNEP Contribution and Source:	$61,968, IRL Council
Partner Match:	$29,111, 32% match by HSWRI and CESE
Total Project Cost:	$91,079

Project Description:
Common bottlenose dolphins (*Tursiops truncatus truncatus*) inhabiting the Indian River Lagoon (IRL) are an immunocompromised stock of conservation priority. The status of this protected stock can serve as a barometer of human and environmental health threats by exposing the presence and deleterious effects of harmful algal bloom (HAB) toxins. Numerous HAB toxins are of concern to IRL health, including domoic acid (DA), saxitoxin (STX), brevetoxin (PbTx), microcystin (MC), okadaic acid (OA), and lyngbyatoxin-A. However, IRL wildlife are not routinely evaluated for exposure and toxicity, severely limiting our understanding of the occurrence and potential health consequences. This study will measure the levels of fourteen HAB toxins in tissues and respiratory vapor ("blow") of stranded IRL dolphins and correlate findings to disease identified via histopathology. Blubber and blow will also be validated as novel, pre-mortem, and minimally invasive sampling sites for HAB toxin screening. Study findings will help elucidate HAB toxin exposure risks and inform future research, monitoring, and interventions for the safety of humans, pets, and wildlife that utilize IRL waters. Expected outcomes for presentation and publication include 1) quantification of fourteen HAB toxins in IRL dolphin liver, kidney, blubber, and blow, 2) correlation of HAB toxin exposure with the type and severity of systemic disease, and 3) validation of novel sampling sites (blubber and blow) for future, minimally invasive HAB toxin screening in free-ranging IRL dolphins.

Key Outputs (Deliverables):
1) Peer-reviewed manuscript submission, 2) locally disseminated data reports, and 3) professional presentations describing a) HAB toxin load and trends in IRL dolphins, b) HAB toxin reference ranges based on sample type, c) health status correlated to HAB toxin load, and d) validation of novel, minimally invasive sample sites for future HAB toxin screening in free-ranging IRL dolphins.

Key Outcomes (Benefits to the IRL):
1) An improved understanding of threats to IRL dolphin health can inform management decisions of veterinarians, biologists, public health officials, and policymakers to help reduce HAB toxin exposure risks to humans, pets, and wildlife (short-term).
2) Data regarding HAB toxin load and concurrent health state can inform future conservation and monitoring of the IRL dolphin stock (short- to long-term).
3) Upon successful validation, blubber and blow HAB toxin screening programs can be implemented to enhance early warning monitoring efforts (short- to long-term).
4) Citizen scientists and students will be trained in IRL health science (short-term).

EXECUTIVE SUMMARY

Title of Project	Testing the effectiveness of hybrid living shoreline restoration at a crucial wading bird rookery in the Central Indian River Lagoon
Lead Organization and Partners:	Lead: Marine Resources Council Partners: Florida Fish and Wildlife Conservation Commission, Brevard Zoo
Project Location	Bird Island; adjacent to 2300 Front St, Melbourne, FL 32901
Key CCMP Vital Sign(s):	Living Shorelines, Biodiversity, Species of Concern, Monitoring and Data, Science & Technology Innovation
IRLNEP Contribution and Source	$25,212.19; Category 4/US EPA
Partner Match:	$310,000 FWC, $30,000 Brevard Zoo
Total Project Cost:	$365,212.19

Project Description:
Bird Island, located off of Front Street Park in Downtown Melbourne, is one of the few remaining wading bird rookeries within the Indian River Lagoon. As such, it provides essential ecosystem services for the Lagoon by supporting the diverse avian population. Over recent decades, the island has endured significant erosion and loss of mangrove trees. Under current erosion rates, Bird Island could disappear within five to ten years and structural intervention is needed to restore the island to suitable and sustainable avian habitat. MRC, along with partner organizations, are proposing to construct a hybrid living shoreline to add landmass and protect the island from wave action. Breakwater deployment and sediment infilling behind the breakwater will support island restoration and the planting of additional mangroves. This proposal, specifically, is to cover the living shoreline installation, water quality and sediment health monitoring, and research portions of the Bird Island Restoration Project, complementing construction activities covered by other funding sources. As hybrid shoreline restoration projects become more widespread, there is a need to test their effectiveness in improving water quality and sediment health. The monitoring and testing included in this project will provide much-needed data documenting the rate of change in habitat health parameters around a prefabricated breakwater hybrid living shoreline.

Key Outputs (Deliverables):
- 0.5-1.0 acres of habitat restored
- Transformative impact of new technology
- 1 peer review publication expected within 2-year project timeline

Key Outcomes (Benefits to the IRL):
- Rare wading bird breeding habitat restored to support avian biodiversity
- Local improvements to water quality through hybrid living shoreline restoration
- Key data needed to test the effectiveness of hybrid living shorelines using prefabricated modules

Executive Summary

Title: Eco-physiological importance of a diverse seagrass microbiome to control growth in the nursery and build resilience to transplantation stress	
Lead Organization:	Florida Oceanographic Society
Project Location:	Florida Oceanographic Society 890 Ocean Blvd., Stuart, Florida 34996
Key CCMP Vital Sign(s):	*Seagrass* (Level 1), *Climate Ready Estuaries* (Level 2), *Biodiversity, Monitoring, and Data Sharing* (Level 2), and *Science, Technology, and Innovation* (Level 3).
IRLNEP Contribution & Source:	$98600.48, IRL Council
Partner Match:	$34,381.44, Florida Oceanographic Society
Total Project Cost:	$132,981.92

Seagrass ecosystems, critical for coastal health, face significant threats from human activities. In Florida's Indian River Lagoon (IRL), seagrass loss exceeds 50%, and low restoration success hinders efforts to revitalize these vital habitats. This project aims to enhance seagrass restoration success by investigating the roles of the microbiome and out planting methods in plant resilience and growth. This project will inform new standard operating procedures that IRLNEP funded nurseries will help develop during Florida Oceanographic hosted workshops (Data Sharing).

Project Description Summary: Most restoration projects in the IRL source their seagrass from established nurseries, where their grass is grown in play sand and harvested for transplantation. One commonly overlooked factor that likely strongly influences success is the below-ground interactions between seagrass and sediment microbes (Biodiversity). To understand the magnitude to which seagrass rely on their below ground microbiome, mesocosm experiments will identify the microbial taxa and their connection with seagrass growth and resilience (Science, Technology, and Innovation). This project will:

- Enhance seagrass restoration success by identifying the role of the below-ground microbiome.
- Identify key microbial taxa, and their impact on seagrass growth and resilience.
- Facilitate researchers' ability to develop strategies that optimize nursery practices and improve transplantation outcomes.

Key Outputs:

- **Microbiome Influence:** The project will explore how microbial communities in the soil impact seagrass growth, stress tolerance, and survival before and after transplantation.
- **Microbiome Augmentation:** The researchers will test the efficacy of augmenting the soil microbiome with beneficial bacteria to promote seagrass growth and resilience.
- **Restoration Techniques:** The study will compare two planting methods: matting and sodding, to determine their effects on seagrass health and survival after transplantation.
- **Improved Restoration Success:** By understanding the role of the microbiome, the project aims to develop more effective restoration techniques, increasing the survival and growth of transplanted seagrasses.
- **Standardized Protocols:** The findings will contribute to the development of standardized operating procedures for seagrass nurseries and restoration projects in the IRL.
- **Enhanced Ecosystem Health:** Successful seagrass restoration will improve water quality, support biodiversity, and protect coastal communities from erosion and storm surges.

Key Outcomes:

- By addressing the critical role of the microbiome in seagrass ecology, this project has the potential to significantly advance seagrass restoration efforts in the IRL and other coastal ecosystems.

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Bid opening information can be found here one page 2: https://onelagoon.org/wp-content/uploads/ITB2024-01.pdf

Public Bid Opening	February 7, 2025 **@ 10:30 AM ET**	**Public Opening Options for Attendance:** **-In Person-** 1235 Main Street Sebastian, Florida 32958 **-Virtual-** ZOOM Conference One tap mobile: US: +13052241968,,82813018647#,,,,*952111# Meeting URL: https://us02web.zoom.us/j/82813018647?pwd=GFfmOiV9tAa3zIwXuP2Y7YgVoleaHj.1 Meeting ID: 828 1301 8647 Passcode: 952111

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Duane De Freese, PH.D.
Executive Director Activity Summary (November 2024 – February 2025)

Administrative Activities at Federal Level

- Site visit and field trip with César Zapata, Acting Deputy Regional Administrator and John Nicholson, Chief of Staff Region 4 EPA (January 6-8, 2025)
- EPA Region 4 Office of Inspector General audit and a project site visit by five auditors evaluating BIL-funded projects that have been completed with FY22-23 funding (February 14-16, 2025)
- Briefing with Representative Mike Haridopolos, new Congressman for Florida's 8th District

Leadership Activities

- Association of National Estuary Programs board and member of Government Affairs Committee
- Southeast Coastal Ocean Observing Regional Association Advisory Board. Attended SECOORA board meeting, Charleston SC (December 9-12, 2024)
- Chair, Southeast and Caribbean Disaster Recovery Partnership Advisory Board. Participation in 9th Annual Meeting in Wilmington NC (February 4-5, 2025)
- Florida HAB Task Force meetings to develop and edit the HAB Task Force Consensus #3 document (2025). Final report available on-line at https://myfwc.com/research/redtide/taskforce/
- Florida Ocean Alliance Board member; participated in regular meetings
- Florida Estuaries Alliance member, participated in regular meetings
- Attended 2024 annual State of the Port at Port Canaveral (November 20th)

Water Quality and Habitat Restoration

- NOAA Tier-1 Implementation Monitoring Plan revisions for NOAA transformational habitat restoration grant and technical support to partners (IRLNEP team effort)
- Monthly intergovernmental IRL HAB water conditions Zoom calls
- Continued development of One Lagoon Habitat Restoration Plan

Science/Technical Support to Stakeholders and Partners

- Continuing communications:
  - Space Florida staff re: KSC growth
  - East Coast Zoological Foundation - Brevard Zoo Aquarium Project founders
  - advisory support to Space Coast EDC re: regional wastewater treatment plant to serve central Brevard and KSC complex
  - multiple water technology industry representatives
- Initial discussions with Dr. James Kendall, Regional Director, Gulf of Mexico Regional Office, Bureau of Ocean Energy Management and Alan Leonard, Director of the National Oceanographic Partnership Program (NOPP) Office at Integrated Systems Solutions, Inc. Discussion was intersection of ocean and space technology innovation. Meeting was a result of the Southeast Natural Resource Leadership Workgroup meeting at Space Florida/KSC in November 2024
- Smart watersheds technology discussions with The Nature Conservancy. TNC invited to give presentation to IRLNEP Management Conference at February 2025 meetings

Media and Community Engagements

- Palmer PB magazine feature article; photo shoot at FL Oceanographic Society (November 29th).and phone interview (December 6th)
- Responded to information inquiries from Tampa Bay Times
- Attended day-long event featuring world renowned angler and traveler, Jeff Currier, hosted by the Backcountry Fly Fishing Association of Brevard (December 7th)
- Attended Dr. Martin Luther King Jr. commemoration event at the FL Tech (January 21st)
- Leadership Brevard presentation (December 19th)
- Lead Brevard board member IRL orientation and boat tour (January 10th)

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