

**PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS**

WORKSHOP SUMMARY

Meeting Date: September 24, 2024

Department: Environmental Resources Management

I. EXECUTIVE BRIEF

Title: Lake Worth Lagoon Seagrass Mapping Presentation

Summary: On June 12, 2024, at the Lake Worth Lagoon Initiative Steering Committee Meeting, Commissioner Gregg K. Weiss requested that the Lake Worth Lagoon (LWL) Seagrass Mapping Presentation be given to the Board of County Commissioners (BCC) at a later Workshop Meeting. Deborah Drum, Director of Environmental Resources Management (ERM) and Mayra Ashton, Senior Environmental Analyst of ERM, Habitat Enhancement and Restoration Section of the Environmental Enhancement and Restoration Division, will be presenting to the BCC. Districts 1, 2, 4, and 7 (SS)

Background and Policy Issues: Just twenty (20) miles long, the Lake Worth Lagoon (LWL) exceeds expectations in ecological and economic value. A 2019 Economic Valuation study estimated the value of recreational uses and business activities related to the Lagoon at \$813.9 million per year. The total value of tangible and intangible benefits associated with the Lagoon is estimated at \$5.37 billion.

The health of LWL is inextricably connected to the activities and inputs occurring across a voluminous watershed that is forty two (42) times the size of the Lagoon itself. The mission of the Lake Worth Lagoon Management Plan (Plan) is to sustain and build upon the progress already made in protecting and restoring it. The Plan presents achievable goals and actions for improving water quality, enhancing habitat, protecting fish and wildlife, preparing for a changing climate, and fostering public awareness and responsible enjoyment of the Lagoon over the next decade.

A key Action Plan (HE-3) in the Plan is to “maintain and expand seagrass habitats.” Seagrass is an important ecological barometer of water quality and an essential habitat that provides food, shelter, and nursery area for numerous marine and estuarine dependent species. Staff will provide a brief update on the latest results of seagrass monitoring in LWL.

Attachment:

1. LWL Seagrass Mapping Presentation
-

Recommended by: Deborah Drum 9-5-24 SAS 9/5/24
Department Director **Date**

Approved by: [Signature] 9/12/24
Deputy County Administrator **Date**

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact:

| Fiscal Years | 2024 | 2025 | 2026 | 2027 | 2028 |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|
| Capital Expenditures | _____ | _____ | _____ | _____ | _____ |
| Operating Costs | _____ | _____ | _____ | _____ | _____ |
| External Revenues | _____ | _____ | _____ | _____ | _____ |
| Program Income (County) | _____ | _____ | _____ | _____ | _____ |
| In-Kind Match (County) | _____ | _____ | _____ | _____ | _____ |
| NET FISCAL IMPACT | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> |
| # ADDITIONAL FTE POSITIONS (Cumulative) | _____ | _____ | _____ | _____ | _____ |
| Is Item Included in Current Budget? | Yes _____ | | No <u>X</u> | | |
| Does this Item include the use of Federal Funds? | Yes _____ | | No <u>X</u> | | |
| Does this Item include the use of State Funds? | Yes _____ | | No <u>X</u> | | |


Budget Account No.:

Fund _____ Department _____ Unit _____ Object _____ Program _____

B. Recommended Sources of Funds/Summary of Fiscal Impact:

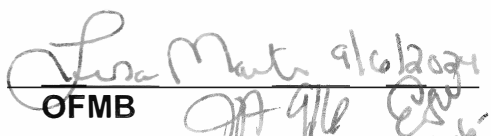


There is no fiscal impact associated with this informational update.

C. Department Fiscal Review:



III. REVIEW COMMENTS

A. OFMB Fiscal and /or Contract Dev. and Control Comments:

| | |
|---|--|
| <p> OFMB </p> | <p> Contract Development and Control mws 9/11/24</p> |
|---|--|

B. Legal Sufficiency:


_____ 9/12/24
Assistant County Attorney

C. Other Department Review:

Department Director
Environmental Resources Management

(THIS SUMMARY IS NOT TO BE USED AS A BASIS FOR PAYMENT.)



Lake Worth Lagoon Seagrass Mapping Presentation



Palm Beach County
Board of County Commissioners Workshop
September 24, 2024

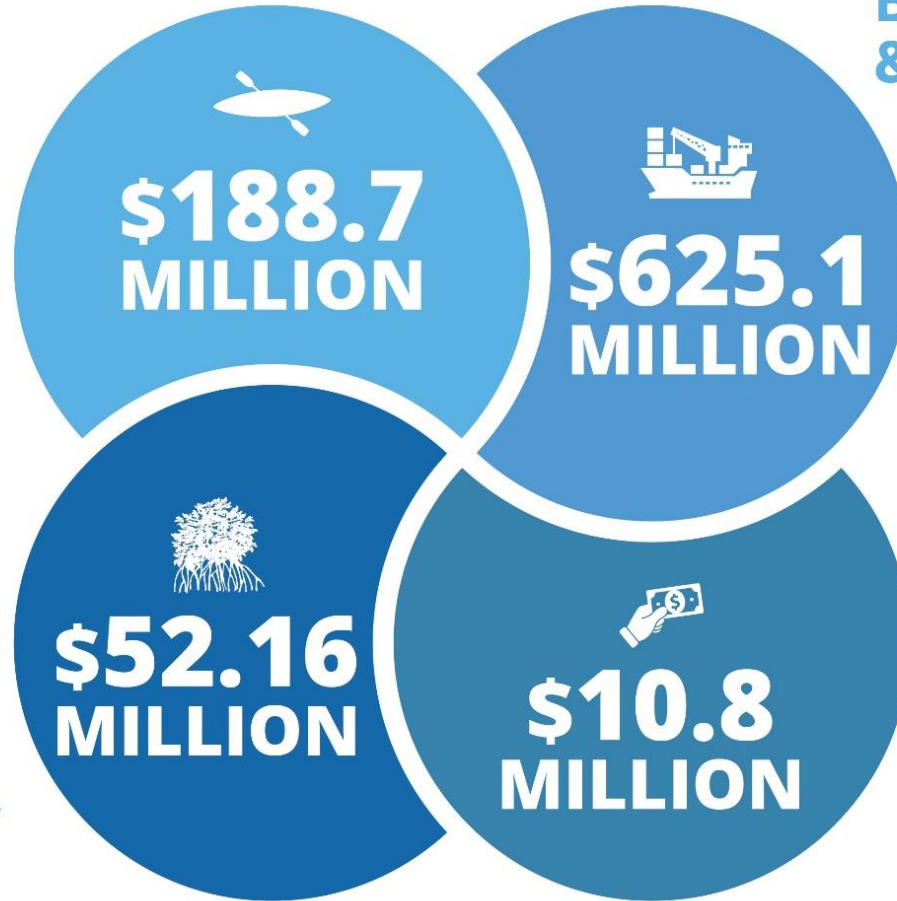
Deb Drum, Department Director, Environmental Resources Management
Mayra Ashton, Ph.D., Senior Environmental Analyst, Environmental Resources Management



Economic Value of Lake Worth Lagoon Estuary

RECREATION

FISHING: \$3.4M
DIVING: \$5.2M
BOATING: \$7.3M
BIRDBWATCHING: \$2M



BUSINESS & COMMERCE

4,726 FULL TIME JOBS
\$375 MILLION (60%) OF ECONOMIC ACTIVITY IS FROM THE PORT OF PALM BEACH

VALUE OF LAGOON HABITATS

FOR FISH AND WILDLIFE, WATER QUALITY PROTECTION, CLIMATE MITIGATION

INCREASED SPENDING IN THE LOCAL ECONOMY

DUE TO INCREASED RESIDENTIAL PROPERTY VALUE

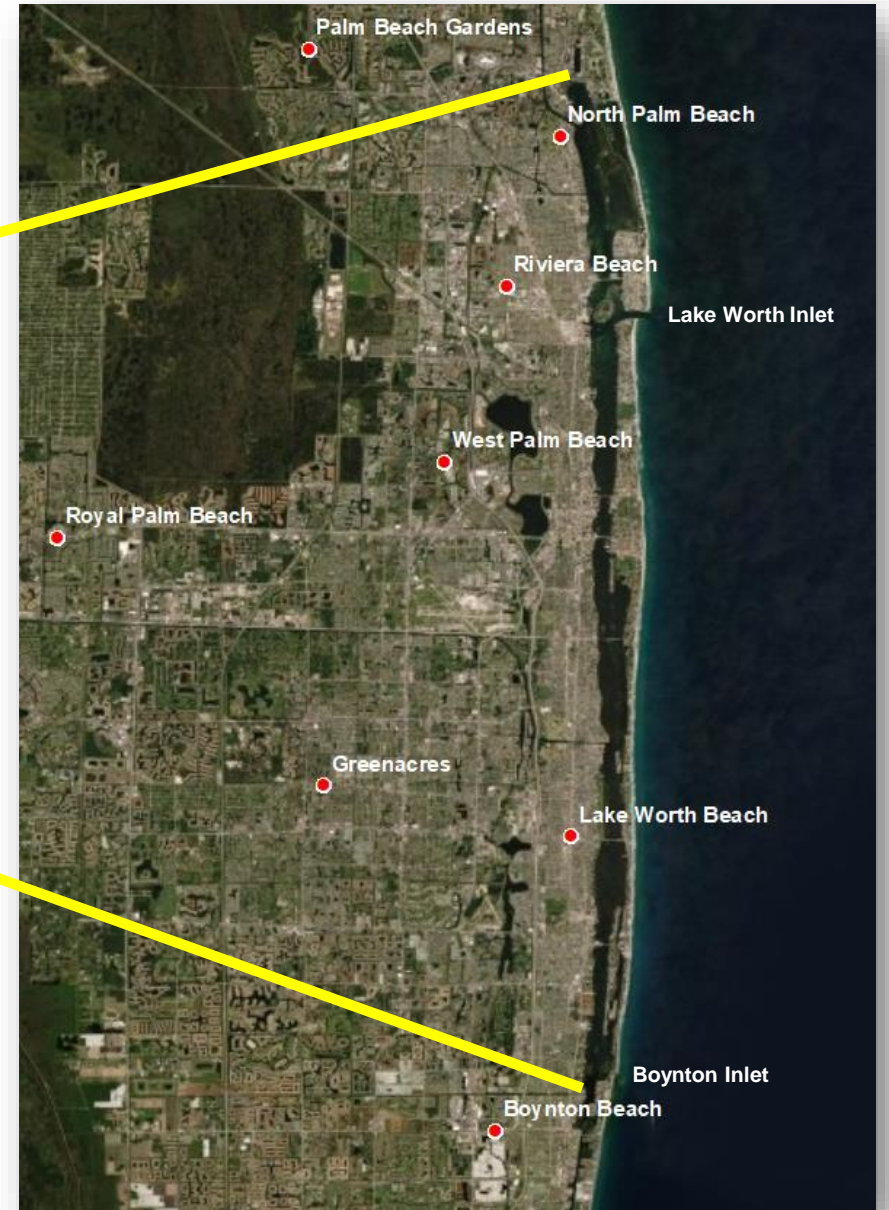
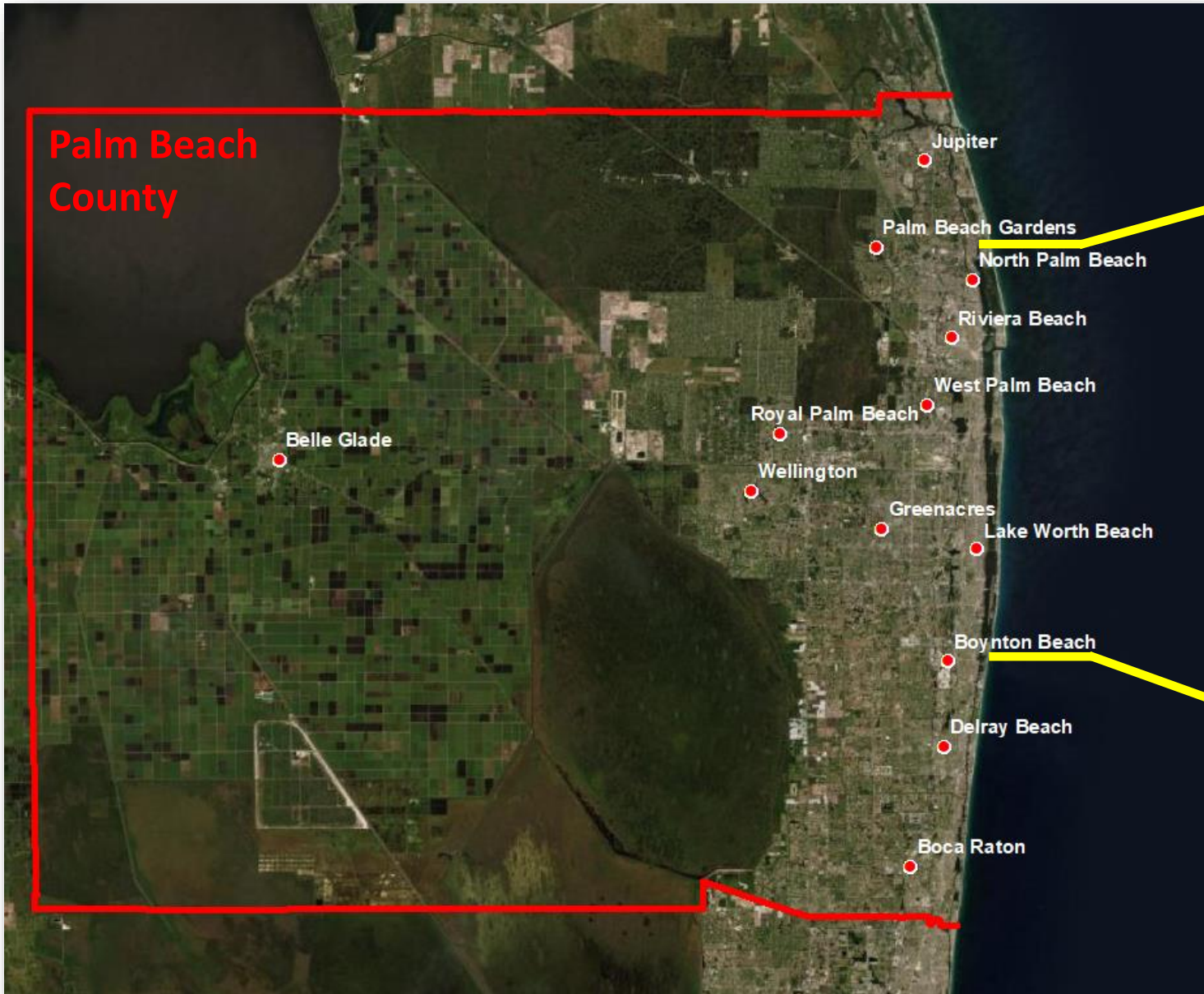
ADDITIONAL REAL ESTATE VALUE ON LAGOON WATERFRONT:

SINGLE-FAMILY HOME: \$73,761 CONDOMINIUM UNIT: \$11,292

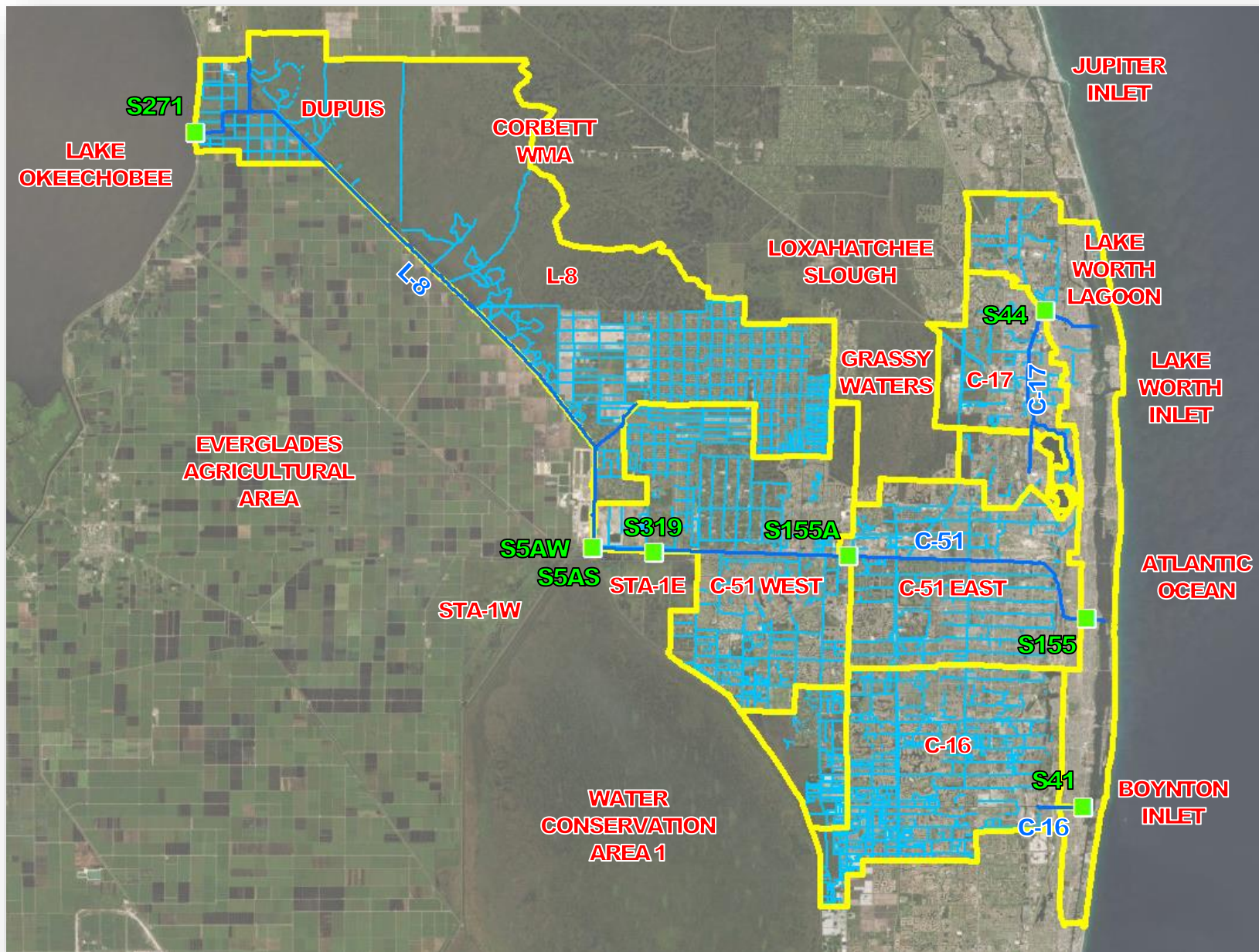
NOTE: Annual Figures
DRAFT; Subject to Revision

SOURCE: Everglades Law Center & PFM Group Consulting LLC

Lake Worth Lagoon Estuary



Watershed Characteristics and Infrastructure



Challenges

Shoreline Hardening



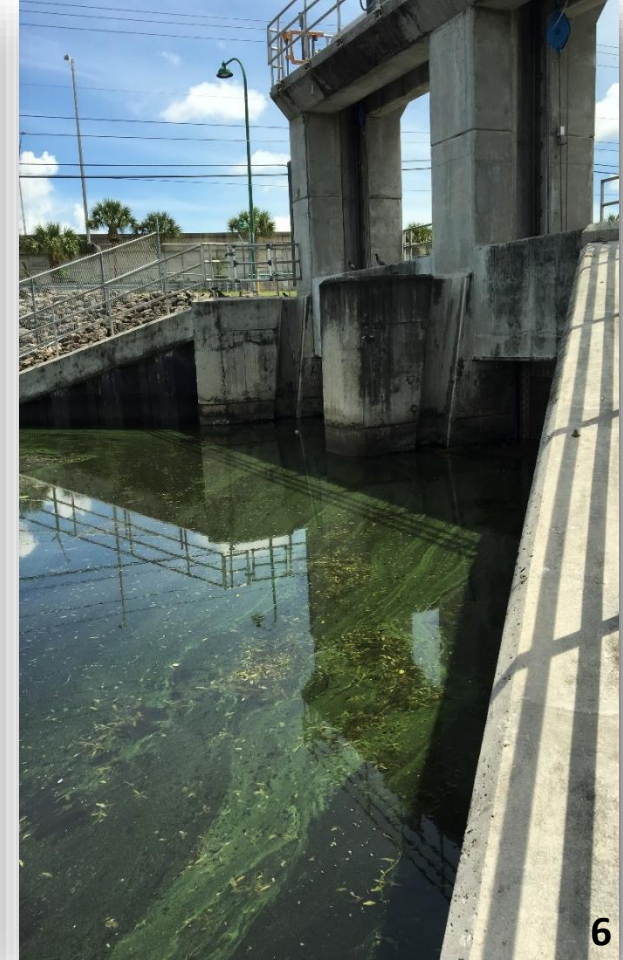
Stormwater Discharges



Limited Flushing in Central Lagoon

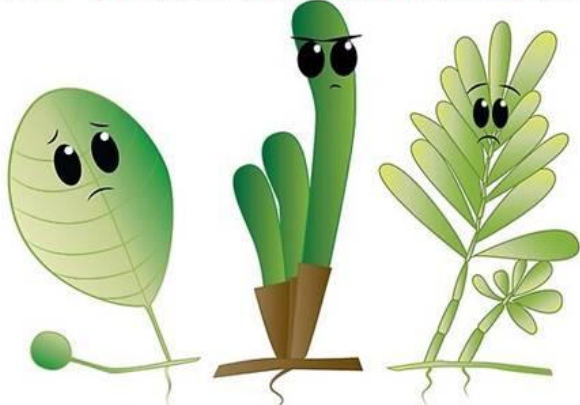


Algae



2023 Lagoon-wide Seagrass Mapping

**WHEN YOU ARE THE
RAINFOREST OF THE OCEAN,
BUT CORALS GET ALL THE LOVE**







sad seagrass noises

- Analysis of changes in species densities and distributions through out the Lagoon (changes in bed locations, outer bed boundaries – bed contractions/expansions, extent of cover) for the three lagoon segments.
- Field verification/ground truthed data from over 1260 sites throughout the lagoon between April and October 2023.
- Mapped 2,079 acres of seagrass in the Lake Worth Lagoon.

2023 SEAGRASS HABITAT CLASSIFICATIONS

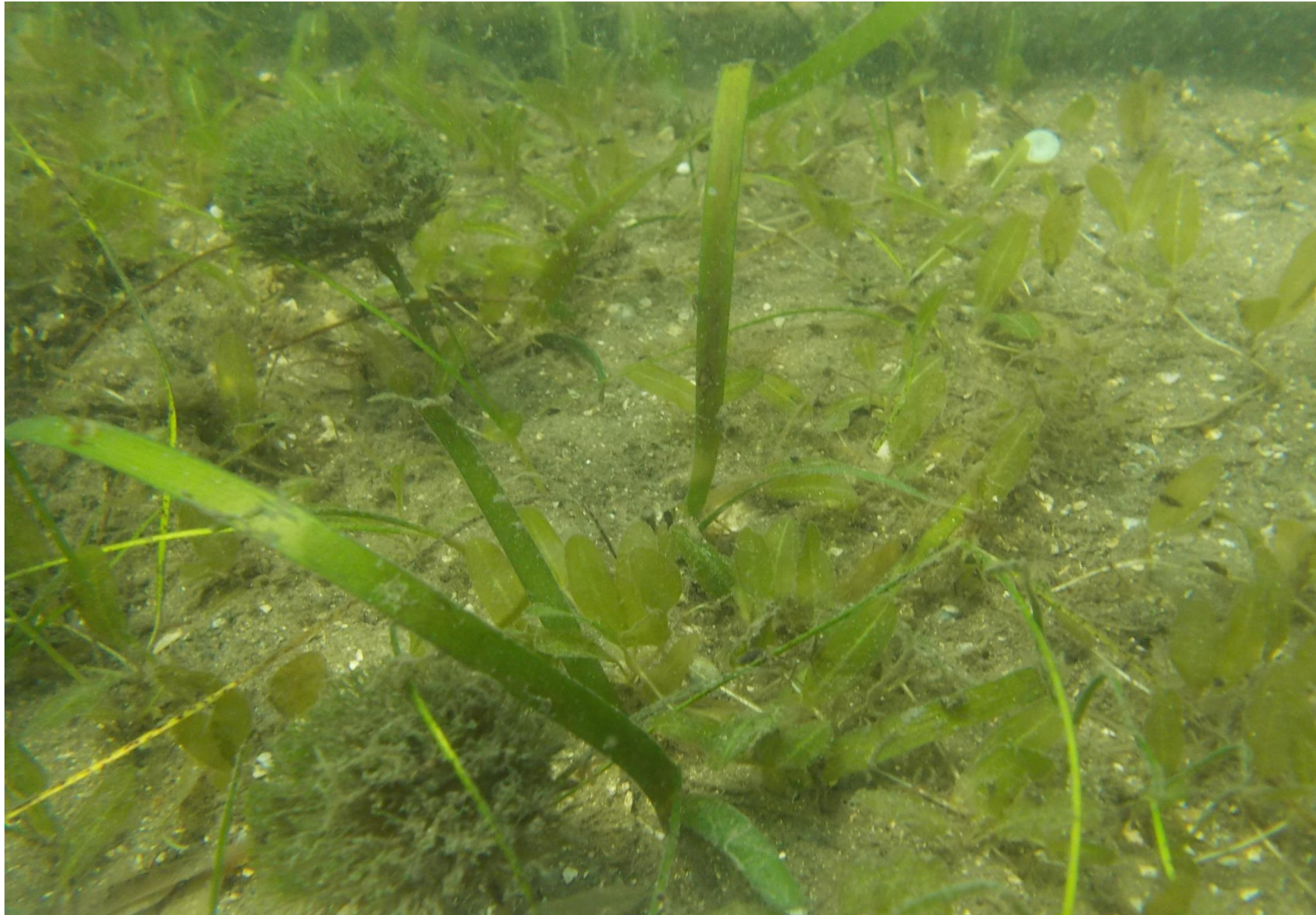
Coverage scores were grouped into categories that could be symbolized by different colors for each polygon.

| | Ave. Coverage | % Cover Value |
|--|---------------|---------------------|
|  Moderate to High Density Seagrass Habitat | (2.01 – 5) | >25% - 100% |
|  Low Density / Patchy Seagrass Habitat | (0.51 – 2) | Numerous - < 25% |
|  Zone of Seagrass Occurrence | (0.01 – 0.5) | One to a few sprigs |
|  Unvegetated Potential Seagrass Habitat - Maximum 4.0 ft (NGVD 29) depth contour and/or seagrass present in 2013 but not 2018 | | |



Coastal Eco-Group Inc.

Bottom Line Up Front



From 2018 to 2023 there was a Lagoon-wide gain of **528 acres of seagrass**

- North segment gained 209 acres
- Central segment gained 118 acres
- South segment gained 201 acres

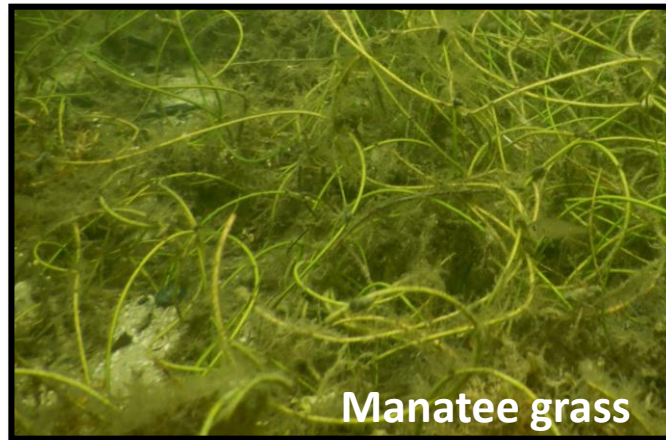
2023 was year with most seagrass mapped since Lagoon-wide mapping started back in 2007 with 2,079 acres mapped

2018

NORTH LAGOON





2023 Seagrass Summary

- Between 2018 and 2023, overall seagrass cover in the north segment increased by 209 acres, due to expansion of seagrass beds south of Blue Heron Bridge, for a total 1,509 acres mapped in the north lagoon.
- Distribution of *S. filiforme* (manatee grass) extended south of the inlet.



Legend

BBIndex

-  Moderate to High Density SG Habitat
-  Low Density / Patchy SG Habitat
-  Zone of SG Occurrence
-  Unvegetated Potential SG Habitat

2023

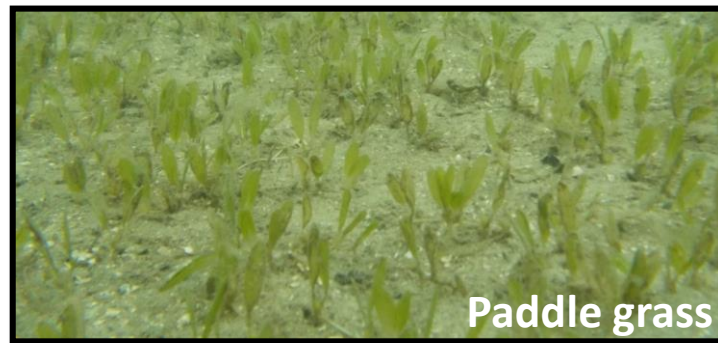


2018

CENTRAL LAGOON





2023 Seagrass Summary

- In 2018, a total of 1.2 acres of seagrass were found in the central segment of the LWL in shallow waters at Snook Islands and South Cove Natural Area.
- In 2023, 119 acres of seagrass were recorded throughout the central segment based on verification of the 2018 habitat polygons.

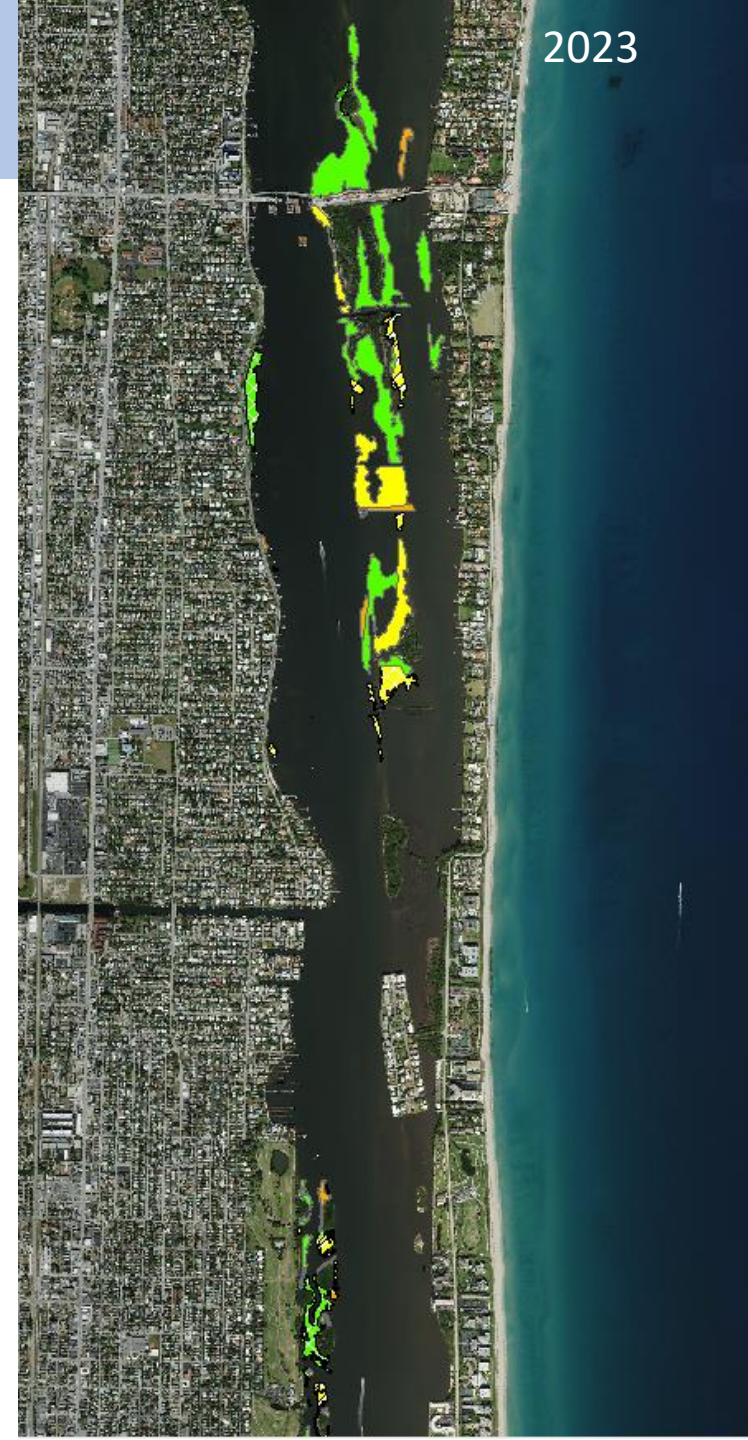


Legend

BBIndex

-  Moderate to High Density SG Habitat
-  Low Density / Patchy SG Habitat
-  Zone of SG Occurrence
-  Unvegetated Potential SG Habitat

2023



2018

SOUTH LAGOON





2023 Seagrass Summary

- A loss of nearly 100 acres of seagrass occurred from 2013 to 2018 between the central/south Lagoon boundary and the Ocean Blvd Bridge.
- Natural recruitment and expansion of seagrass beds in 2023 accounted for a 201 acre increase in seagrass in the south segment for a total 451 acres mapped.

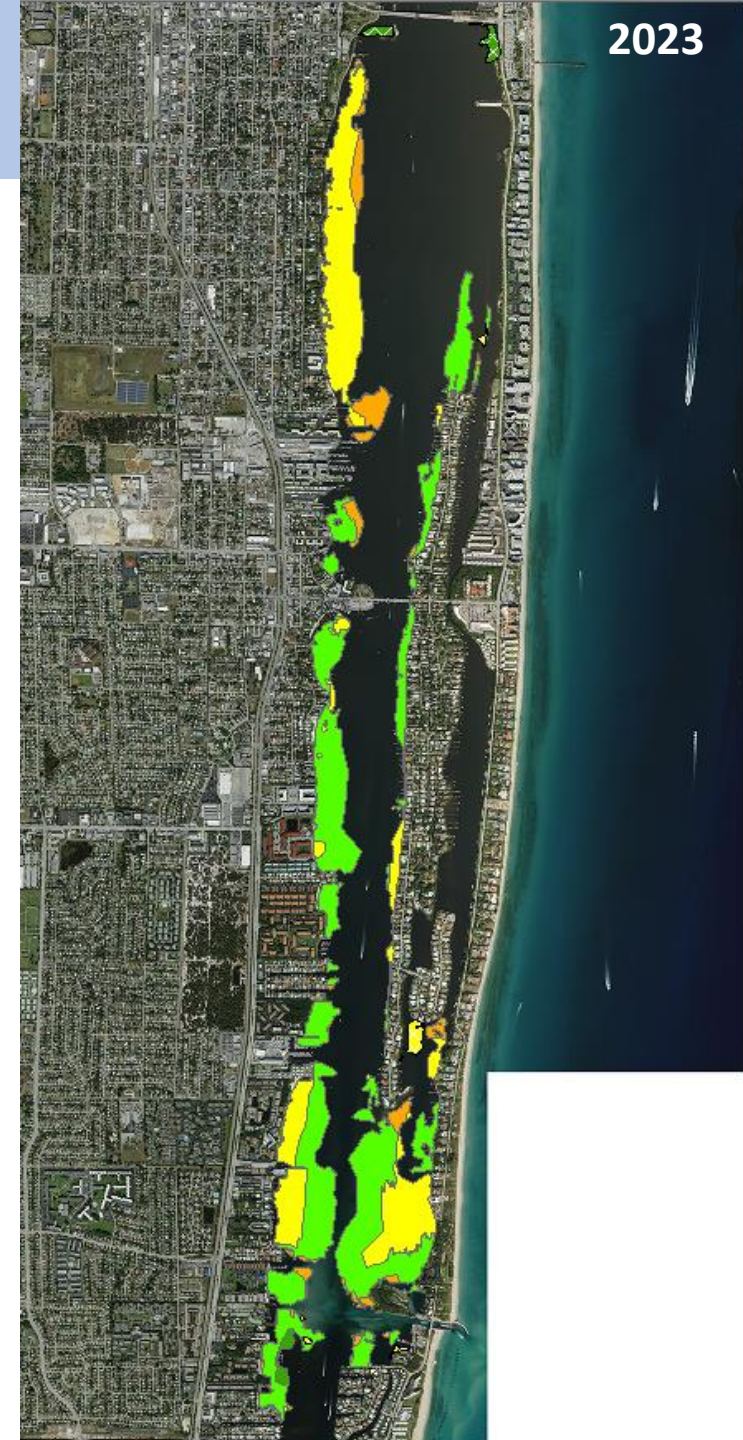
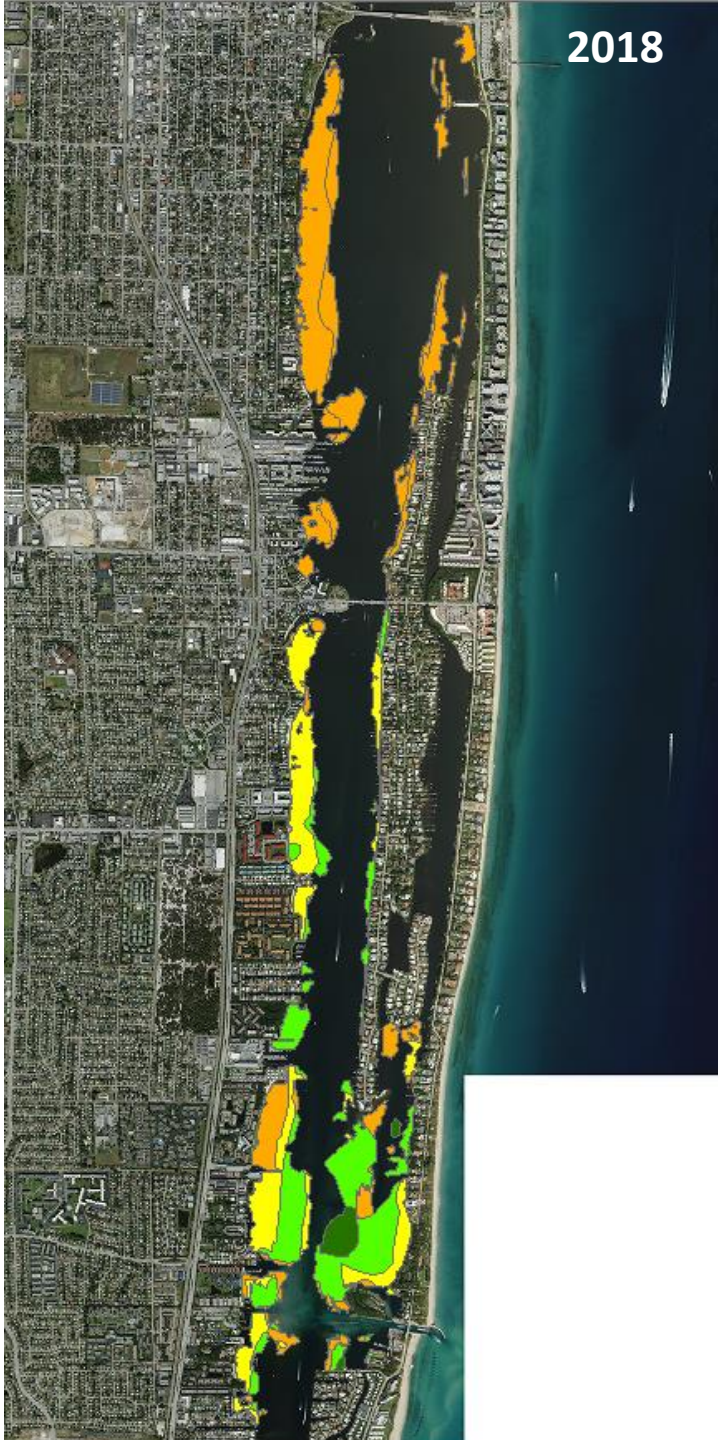


Legend

BBIndex

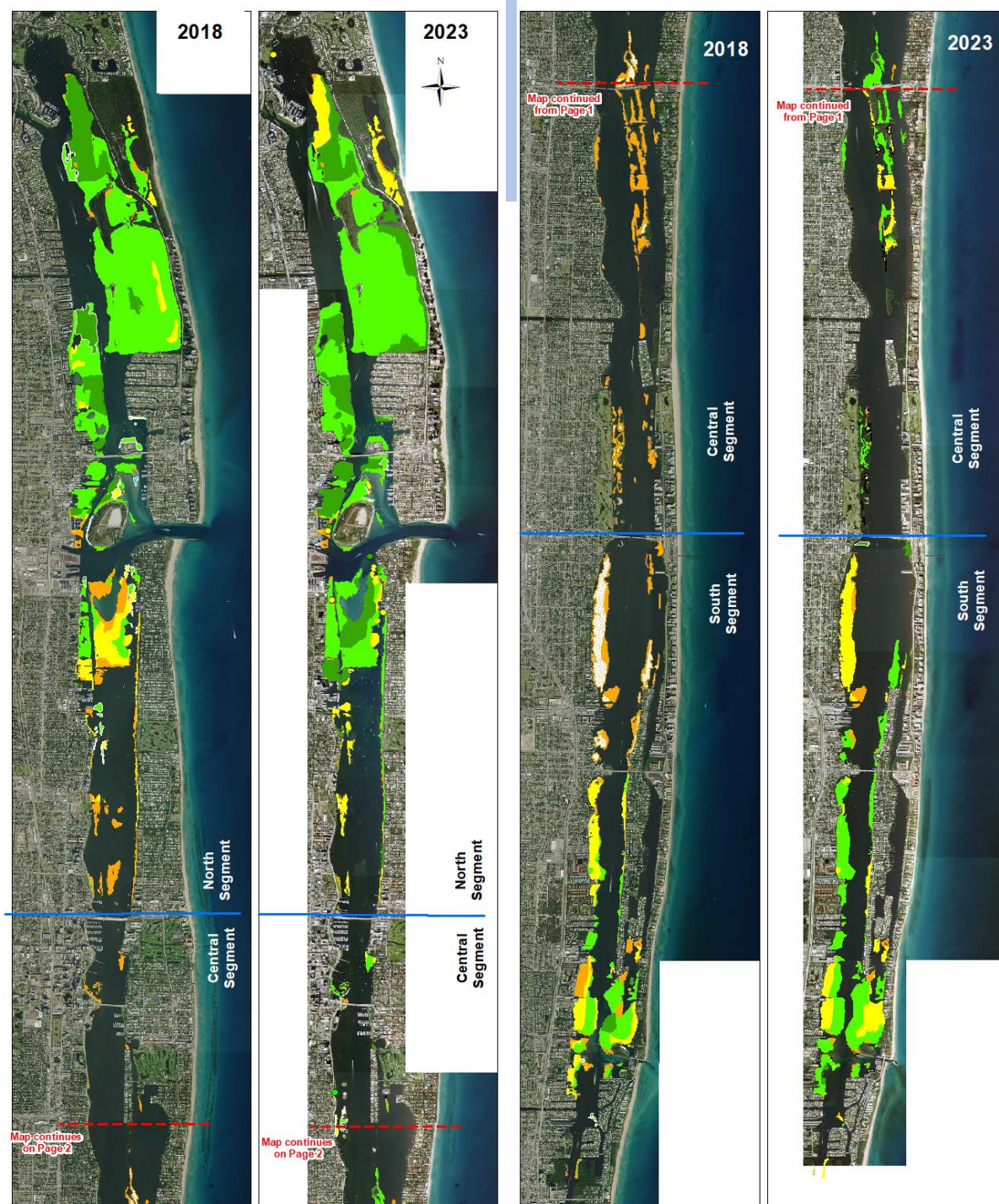
-  Moderate to High Density SG Habitat
-  Low Density / Patchy SG Habitat
-  Zone of SG Occurrence
-  Unvegetated Potential SG Habitat

2023



Summary

2023 Lake Worth Lagoon Seagrass Mapping



- Multiple factors likely contribute to the overall shifts in seagrass habitat throughout the lagoon over time.
- Long-term monitoring revealed a strong correlation between seagrass cover and water clarity as well as seagrass cover and salinity.
- Water clarity and salinity in the north segment and southern extent of the south segment are strongly influenced by the inlets and are more conducive to support healthy seagrass habitat.
- The central lagoon is influenced by freshwater inflows which frequently lower salinities below tolerances for many seagrass species and contribute nutrients, sediments and contaminants.

Thank You for Supporting Lake Worth Lagoon!
Please check out our Management Plan at: www.lwli.org

