



# Palm Beach County Lake Worth Lagoon Update



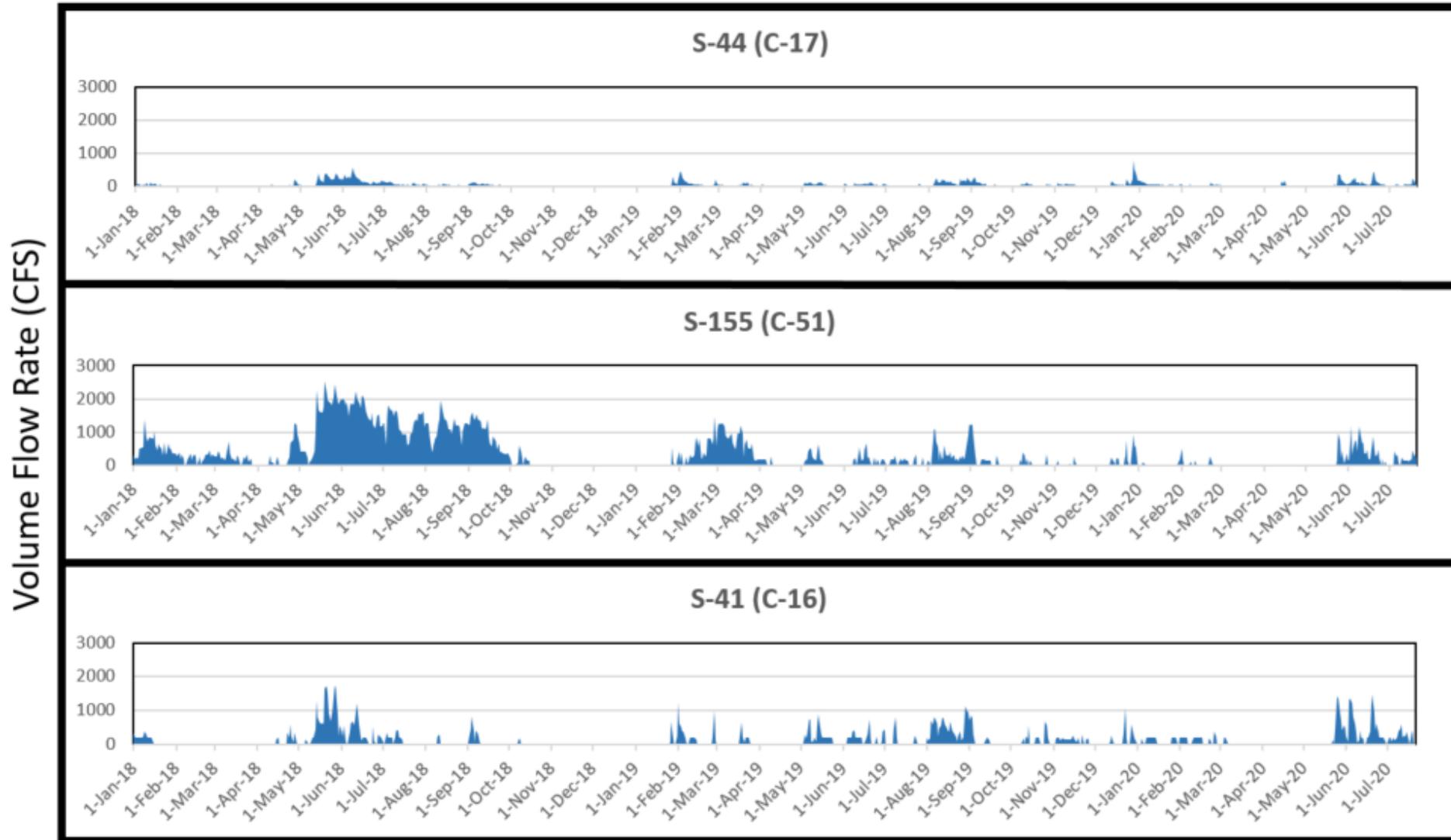
## LAKE WORTH LAGOON INITIATIVE



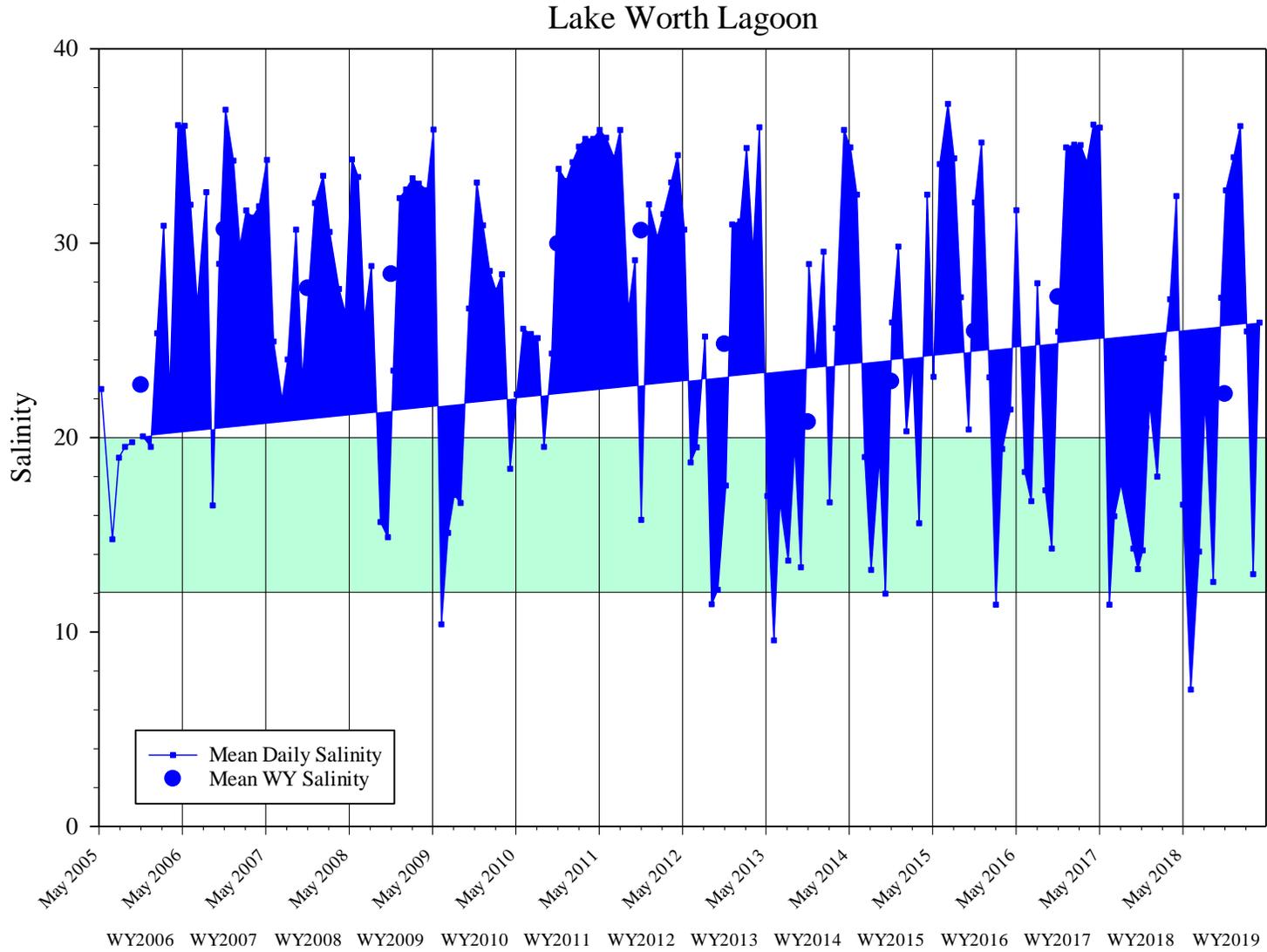
Palm Beach County Water Resources Task Force

July 23, 2020

# Lake Worth Lagoon Freshwater Input (1/1/18 - 7/1/20)



# Mean Daily Salinity and Mean Water Year Salinity Measured at Oyster Stations in the Central LWL



Green band represents the optimal salinity range for oysters in the LWL (12-20)

# 2013 & 2018 Lake Worth Lagoon Seagrass Habitat Maps

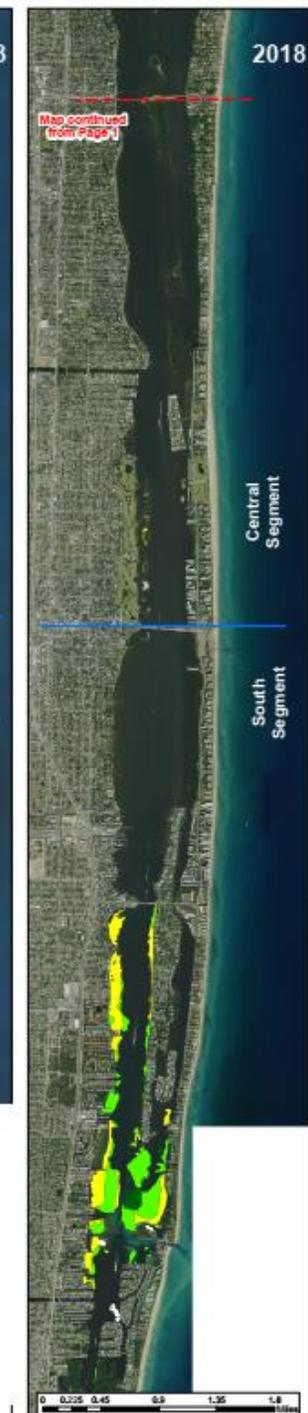
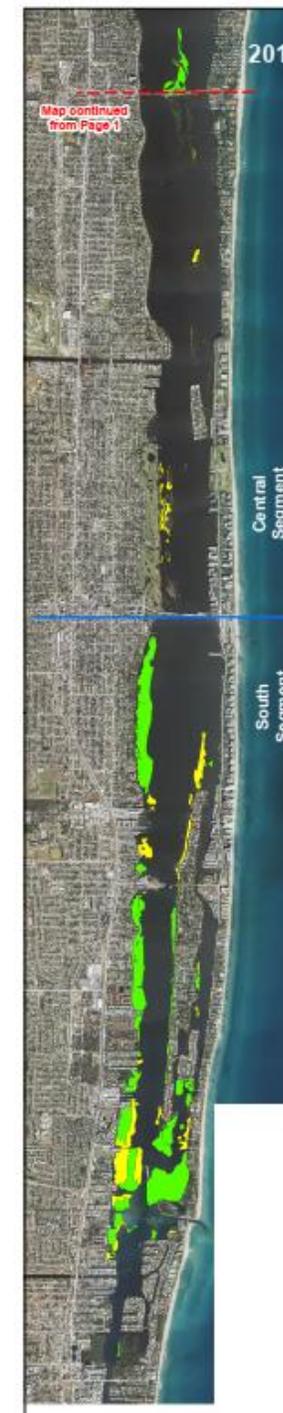
## 2013

-  Moderate to High Density Seagrass Habitat
-  Low Density / Patchy Seagrass Habitat
-  Zone of Seagrass Occurrence

## 2018

-  Moderate to High Density Seagrass Habitat
-  Low Density / Patchy Seagrass Habitat
-  Emergent Low Density / Patchy Seagrass Habitat
-  Zone of Seagrass Occurrence

Note: The 2018 seagrass habitat acreages include polygons based on expansion/retraction of the 2013 polygons and new seagrass habitats delineated in 2018 that were not previously captured in the 2013 map (outlined in white). The acreages of the new seagrass habitats not delineated prior to 2018 are included with the overall acreages for 2018 and displayed separately in the bottom table.



# SEAGRASS MAPPING RESULTS- 2018 VS. 2013

**2013 Acreage Summary**

	North Segment	Central Segment	South Segment	LWL Total
<b>2013 Seagrass Habitats</b>				
Moderate to High Density Seagrass Habitat	588	-	2	590
Low Density / Patchy Seagrass Habitat	528	16	266	809
Zone of Seagrass Occurrence	91	12	82	184
Unvegetated Potential Seagrass Habitat	72	105	88	265
Unvegetated Softbottom	-	71	-	71
Not Surveyed	4	2	2	9
All Habitat Total	1283	205	439	1927
<b>Total Seagrass Habitat</b>	<b>1207</b>	<b>27</b>	<b>349</b>	<b>1582</b>

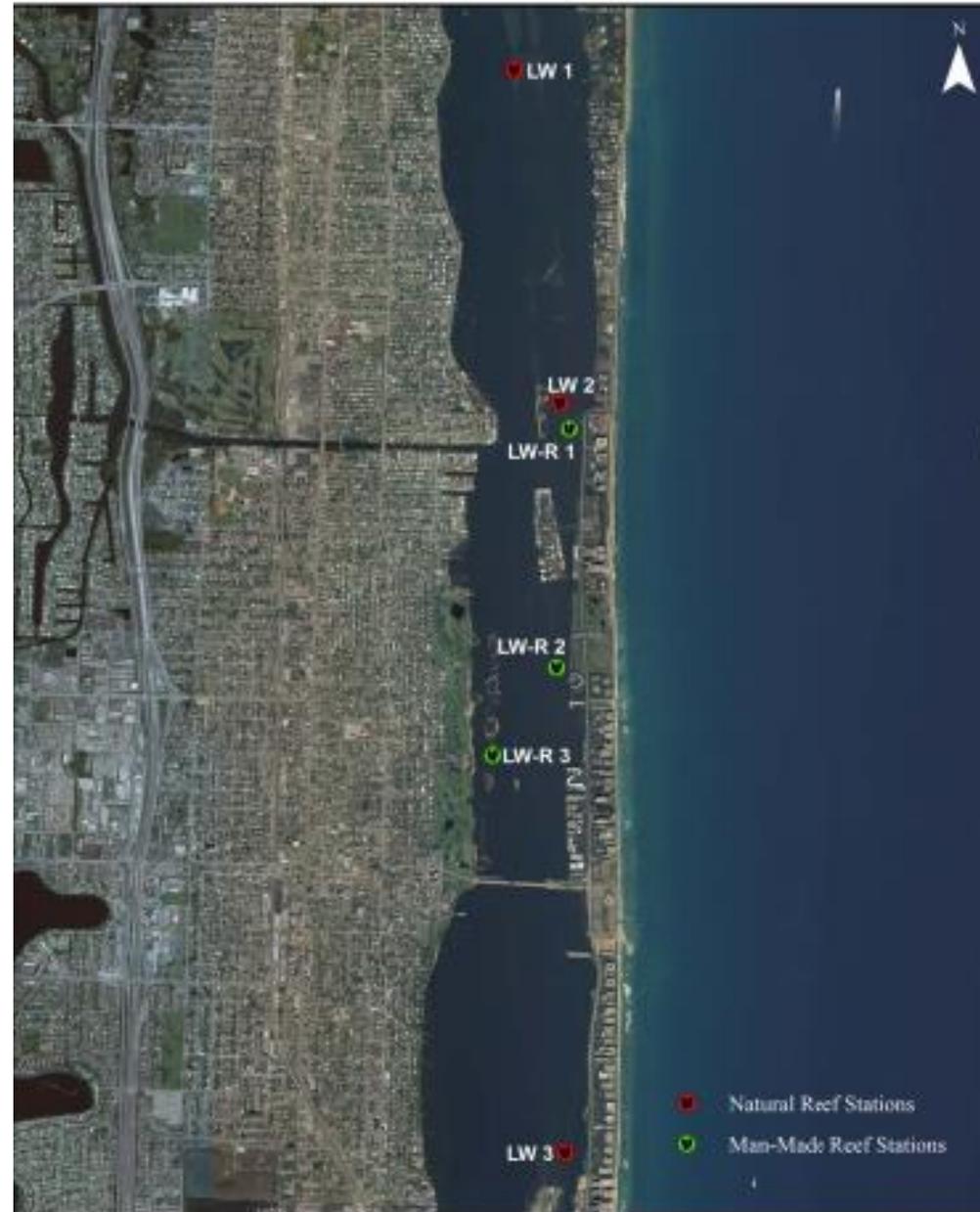
**2018 Acreage Summary**

	North Segment	Central Segment	South Segment	LWL Total
<b>2018 Seagrass Habitats</b>				
Moderate to High Density Seagrass Habitat	256	-	15	271
Low Density / Patchy Seagrass Habitat	881	-	121	1002
Emergent Shoal Low Density / Patchy Seagrass Habitat	1	-	-	1
Zone of Seagrass Occurrence	162	1	114	277
Unvegetated Potential Seagrass Habitat	150	109	101	360
Unvegetated Potential Seagrass Habitat (2013)	-	26	97	26
All Habitat Total	1451	137	448	2036
<b>Total Seagrass Habitat</b>	<b>1301</b>	<b>1</b>	<b>249</b>	<b>1552</b>

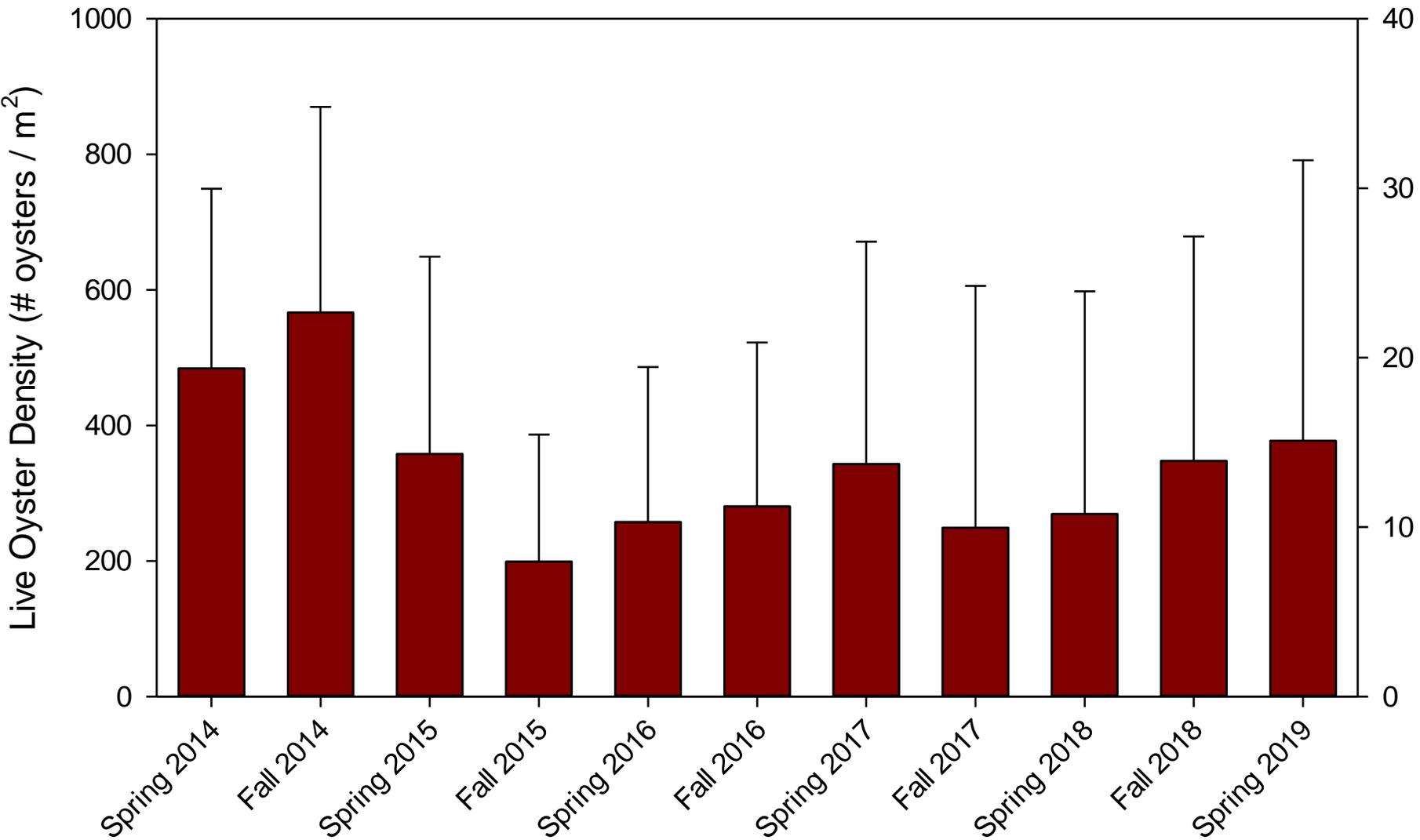
- Similar to the 2007 and 2013 surveys, the north segment had the greatest areal extent of seagrass cover in 2018 (1,301 acres).
- The central segment had only 1.2 acres of seagrass in 2018; this was due to seagrass habitat at the PBCERM Snook Islands and South Cove restoration project areas.
- The overall percentage of sites with no seagrass increased between 2013 and 2018, accompanied by an increase in the percentage of sites with less than 5% cover of seagrass with lagoon-wide declines in the number and percentage of sites with > 5% cover.

<b>New Seagrass Habitats Added in 2018 (outlined in white)</b>				
Moderate to High Density Seagrass Habitat	41	-	1	42
Low Density / Patchy Seagrass Habitat	20	-	1	21
Emergent Shoal Low Density / Patchy Seagrass Habitat	1	-		1
Zone of Seagrass Occurrence	16	-	0	16
Unvegetated Potential Seagrass Habitat	2	-	0	2
All New Habitat Total	80	0	2	82
<b>Total New Seagrass Habitat</b>	<b>78</b>	<b>0</b>	<b>2</b>	<b>80</b>

# Oyster Monitoring Locations in the LWL



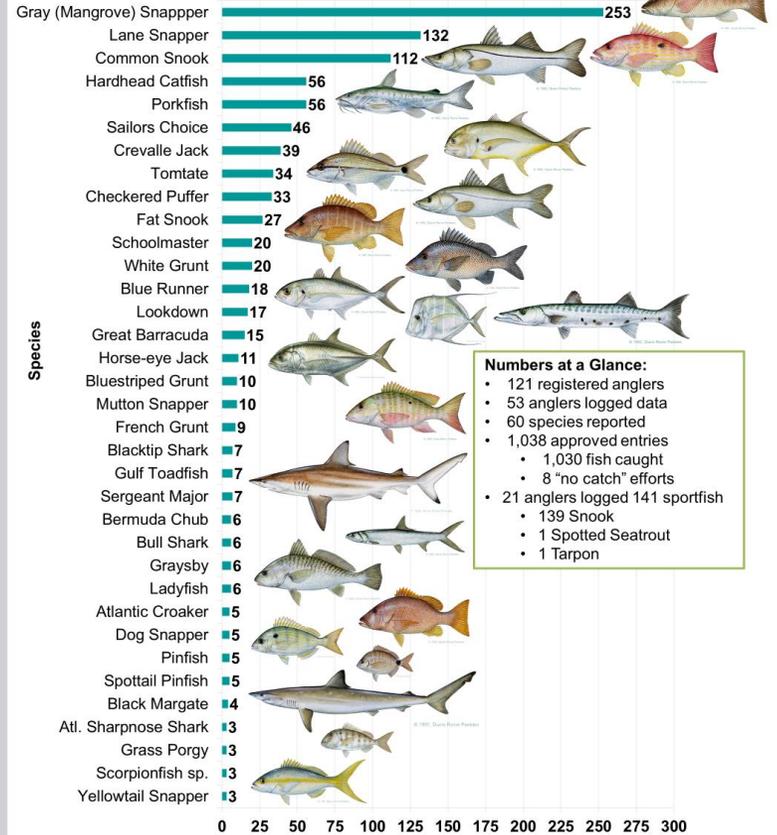
# Mean density ( $\pm$ S.D.) of live oysters present during spring and fall surveys in LWL from 2014 - 2019





# lake worth LAGOON FISHING CHALLENGE

May 24 – July 7, 2019  
Total Fish Caught per Species



**Numbers at a Glance:**

- 121 registered anglers
- 53 anglers logged data
- 60 species reported
- 1,038 approved entries
  - 1,030 fish caught
  - 8 "no catch" efforts
- 21 anglers logged 141 sportfish
  - 139 Snook
  - 1 Spotted Seatrout
  - 1 Tarpon

**2 or less of the following species were also caught:**

- |                      |                       |                      |
|----------------------|-----------------------|----------------------|
| Bluefish (2)         | Horseshoe Crab (1)    | Spanish Mackerel (1) |
| Gray Triggerfish (2) | Leatherjacket (1)     | Spotted Seatrout (1) |
| Hairy Blenny (2)     | Nurse Shark (1)       | Striped Burrfish (1) |
| Pigfish (2)          | Sand Perch (1)        | Striped Mojarra (1)  |
| Sheepshead (2)       | Scrawled Cowfish (1)  | Striped Mullet (1)   |
| Silver Jenny (2)     | Sharksucker (1)       | Tarpon (1)           |
| Bonnethead (1)       | Silver Porgy (1)      | Tripletail (1)       |
| Caesar Grunt (1)     | Southern Flounder (1) |                      |
| Hogfish (1)          | Southern Stingray (1) |                      |

Images courtesy of Diane Rome Peebles





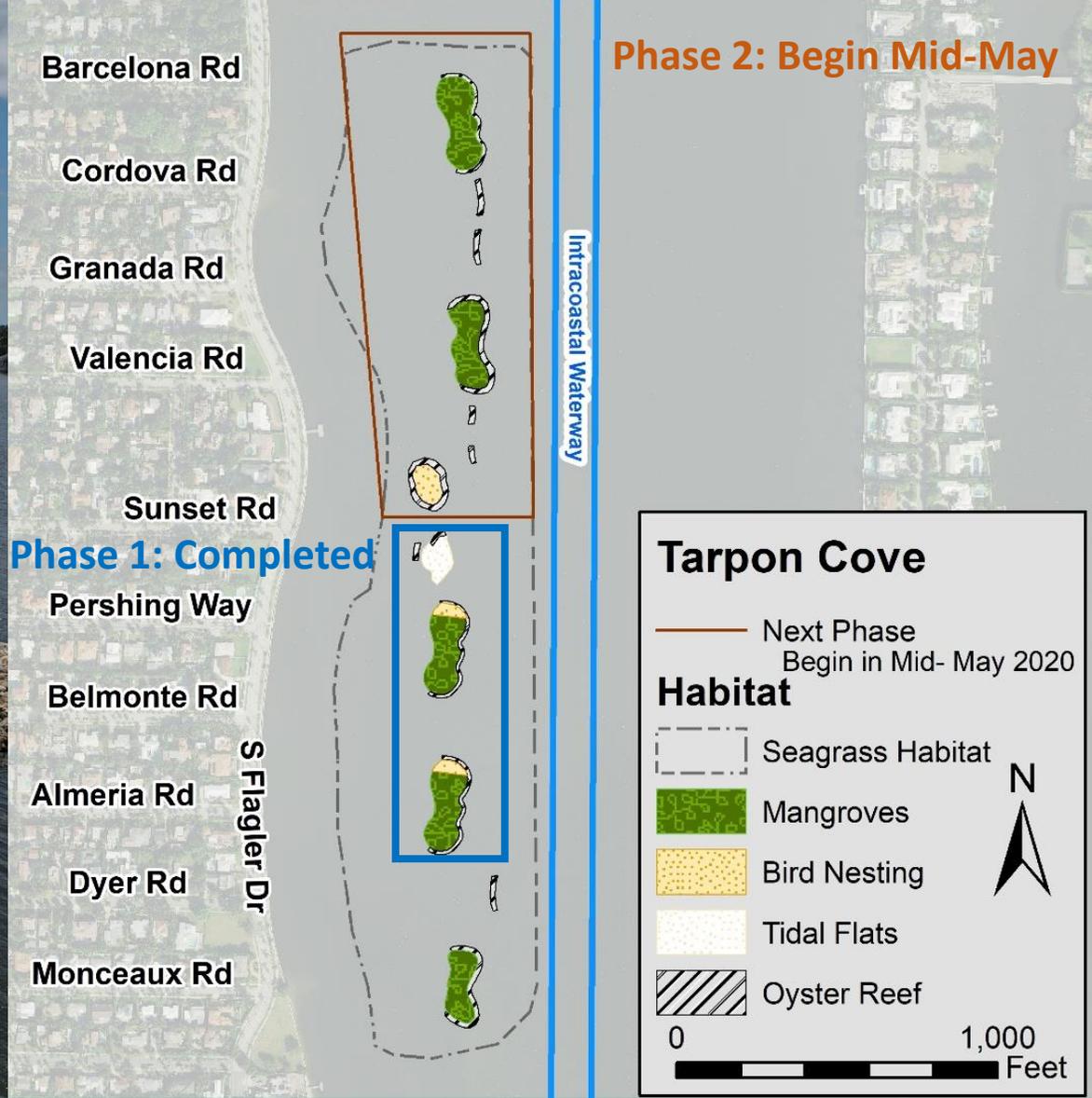
Seine net at Grassy Flats restoration site in the Central Lake Worth Lagoon



Snook collected while sampling in the Central LWL



Photo Credit Baird Engineering, April 2020



# Tarpon Cove Restoration





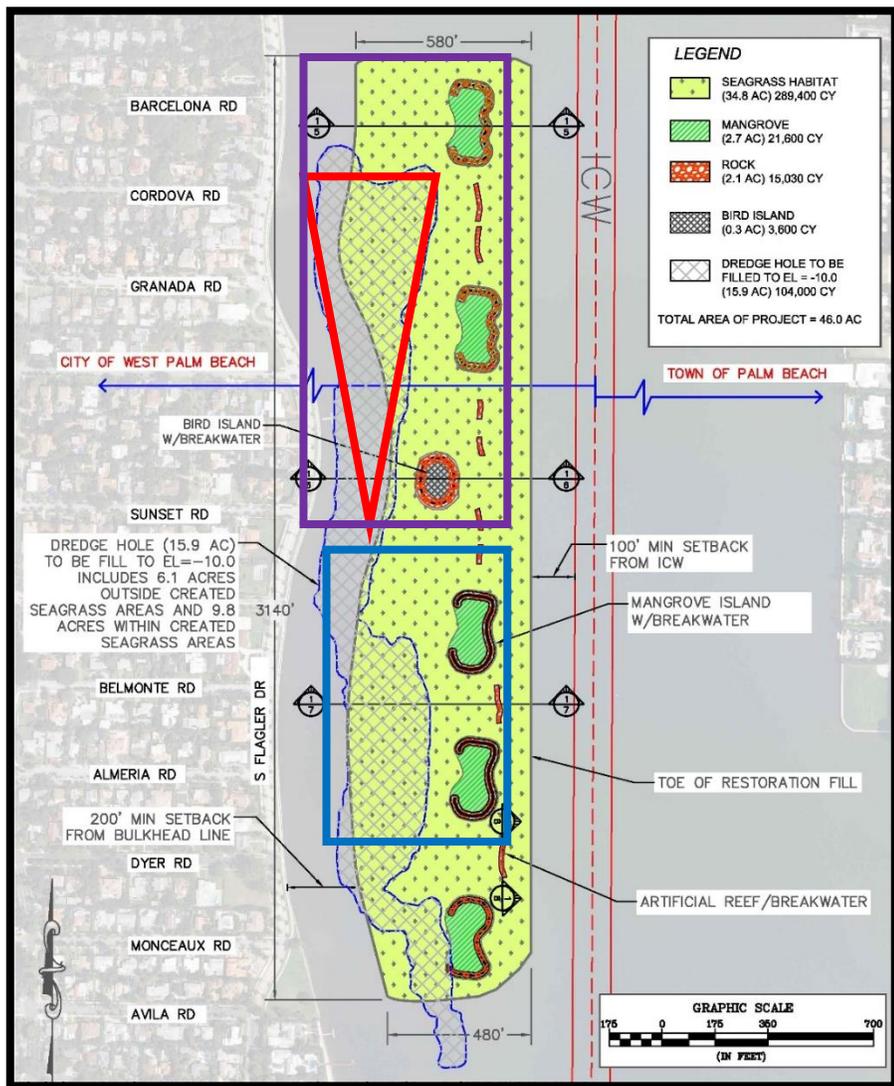
**PBIN**

**Feb 2018 –  
March 2020  
60,000 cy**

**Town Marina  
May 2020 –  
June 2021  
90,000 cy**

**FIND**

**85,000 cy  
Rybovich  
115,000 cy  
Feb 2018 –  
Jan 2020**



**Restore and enhance marine productivity by filling an existing dredge hole to create 40 Acres of estuarine habitat:**

- Seagrass Habitat (34.8 acres)
  - Intertidal islands (2.7 acres)
  - Oyster / artificial reef (2.1 acres)
  - Bird island (0.3 acres)
- Capping muck sediments and fill > ½ miles of unproductive bottom to create 40 acres of shallow water estuarine habitat
  - Kayak Blue way Trail
  - ~440' Offshore / ~250' from ICW
  - Project completed in Phases as funding becomes available
  - 419,000cy of sand 16,200tns of rock



# Tarpon Cove Restoration



# Beneficial Re-use provides a Sand Source

- Beneficial Re-use of Material, Lagoon compatible ~10% Silt / Clay
- To date acquired 235,000cy ~56% of the projects estimated sand sources
- Cost of sand \$65 cy Savings of \$15 m

**Partnerships**  
“Alone we can do so little, together we can do so much.” - Helen Keller



Town of Palm Beach and Mar-a-Lago Resort Maintenance Channel Dredging ~ 60,000 cy and Town Marina Expansion ~90,000 cy



**RYBOVICH**  
YACHTING INTEGRITY THROUGH REFIT

Marina Expansion ~ 115,000 cy



FIND Maintenance Dredged 4.5 miles of the IWW placed 84,650 cy





# Funding a Restoration Project: \$5.5 million



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Helen Keller



Lake Worth Lagoon Initiative – State of Florida  
2016 Legislative Appropriations \$1.682 million



Palm Beach County Match \$1.682 million



FWC / PBC was awarded 2019 USFWS  
National Coastal Wetland Grant \$1 million



FWC / NOAA awarded PBC 2019  
Hurricane Irma Recovery Funds \$1 million



FWC 2019 State Wildlife Grant  
Oyster Reef Construction \$100 K



# Volunteers In Action - Planting



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- On March 5th, 100 volunteers from the El Cid community, the West Palm Beach Fishing Club, Lagoon Keepers, Palm Beach Day Academy, Conservation Conservatory School, MANG Gear, Lake Worth Waterkeepers, and Florida Fish and Wildlife Commission (FWC) who planted 2,500 mangroves and 4,000 cordgrass plants.





# Bird Nesting @ Tarpon Cove

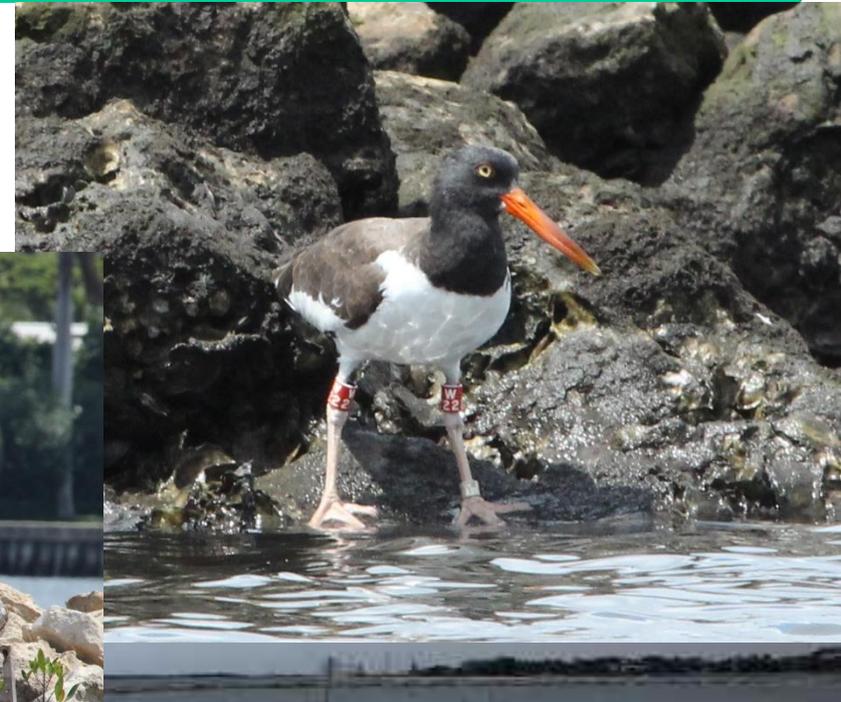


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Tarpon Cove Nest April 2nd



2019 Tarpon Cove Chick W22 at Johns Island



2020 Tarpon Cove Chick May 6th

FWC Decoy Least terns yet to attract a colony

