



Palm Beach County
Board of County Commissioners

Tarpon Cove Estuarine Restoration Project

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Introduction

- Over the past century, development in and around Palm Beach County's largest estuary, Lake Worth Lagoon (Figure 1), has resulted in water quality degradation and an extensive loss of coastal habitats as a result of coastal development.
- Tarpon Cove is a 46 acre site, located in the City of West Palm Beach, between the Royal Park Bridge and Southern Blvd Bridge adjacent to the El Cid historic neighborhood. Pre-construction project conditions consist of a 16 acre dredge hole and 30 acre area with average depths of -10' NAVD. (Figure 2)

Figure 1: Map of Palm Beach County and Lake Worth Lagoon

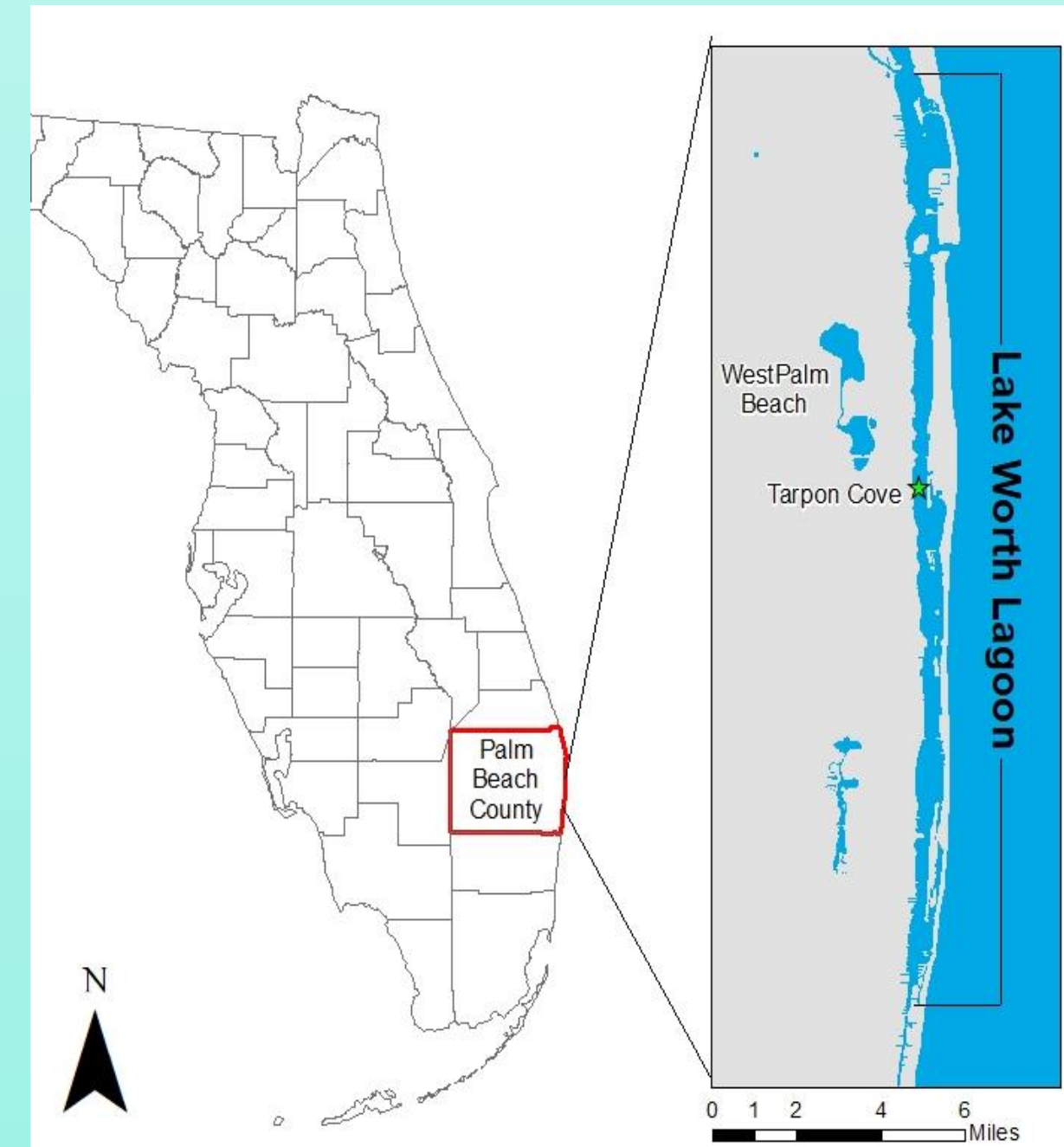
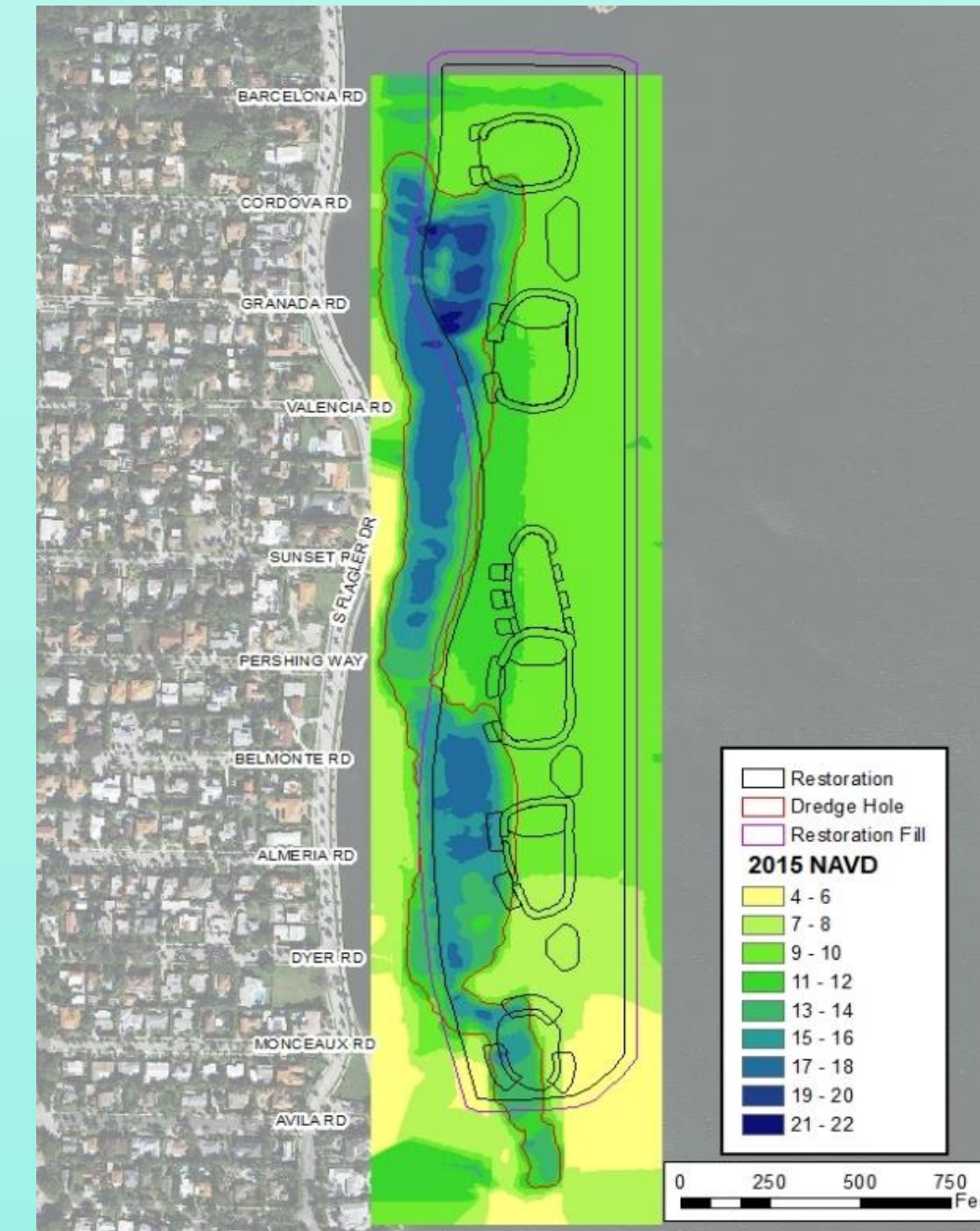


Figure 2: Pre-construction depths with project design layers



- A 2016 Benthic Study showed the Tarpon Cove dredge hole sediment samples had a composition of 100% Fine Particles with between 23% and 28% organic content. (Figure 3).
- The project requires an estimated 529,800 cubic yards of material to fill the dredged hole and create shallow water and intertidal habitat providing resilient estuarine habitats.



Figure 3: Examples of high silt and organic content from dredged holes

Objectives

- Improve 46 acres of estuarine habitat with the creation of:
 - 29.4 acres of restoration fill
 - Creating 23.5 acres of seagrass habitat
 - 6.1 acres of mangrove, tidal, and bird habitat
 - 3.5 acres of mangrove, 2 acres of bird and 0.5 tidal habitat
 - 4.4 acres of rock, including 3.5 acres of oyster habitat
 - Fill 6.1 acres of the 16 acre dredge hole to -10' NAVD

Project Methodology: Use of Beneficial Dredged Material

- The project was permitted and designed to utilize lagoon compatible donated beneficial dredged material from local waterway projects.
- Using donated material reduces County project costs associated with purchase, transport, staging and loading sand onto barges.
- Using beneficial material provides the marine community a place to offload lagoon compatible material by creating habitat and keeping sediments in the system instead of hauling upland and preserves capacity in valuable FIND Dredge Material Management Areas.
- Since 2018, five projects have provided an estimated 366,800 cubic yards of beneficial dredged materials. Projects include: 1) Palm Beach Intracoastal Neighborhood Dredging (64,268cy), 2) Rybovich Marina (86,600cy), 3) Florida Inland Navigation Districts ICWW Maintenance Dredging (83,600cy) (Figure 4), 4) Town of Palm Beach Marina Expansion (114,200cy), 5) Sawfish Island Restoration (18,000cy).



Figure 4: Aerial provided by Taylor Engineering May 2019 of ICWW material being placed at Tarpon Cove

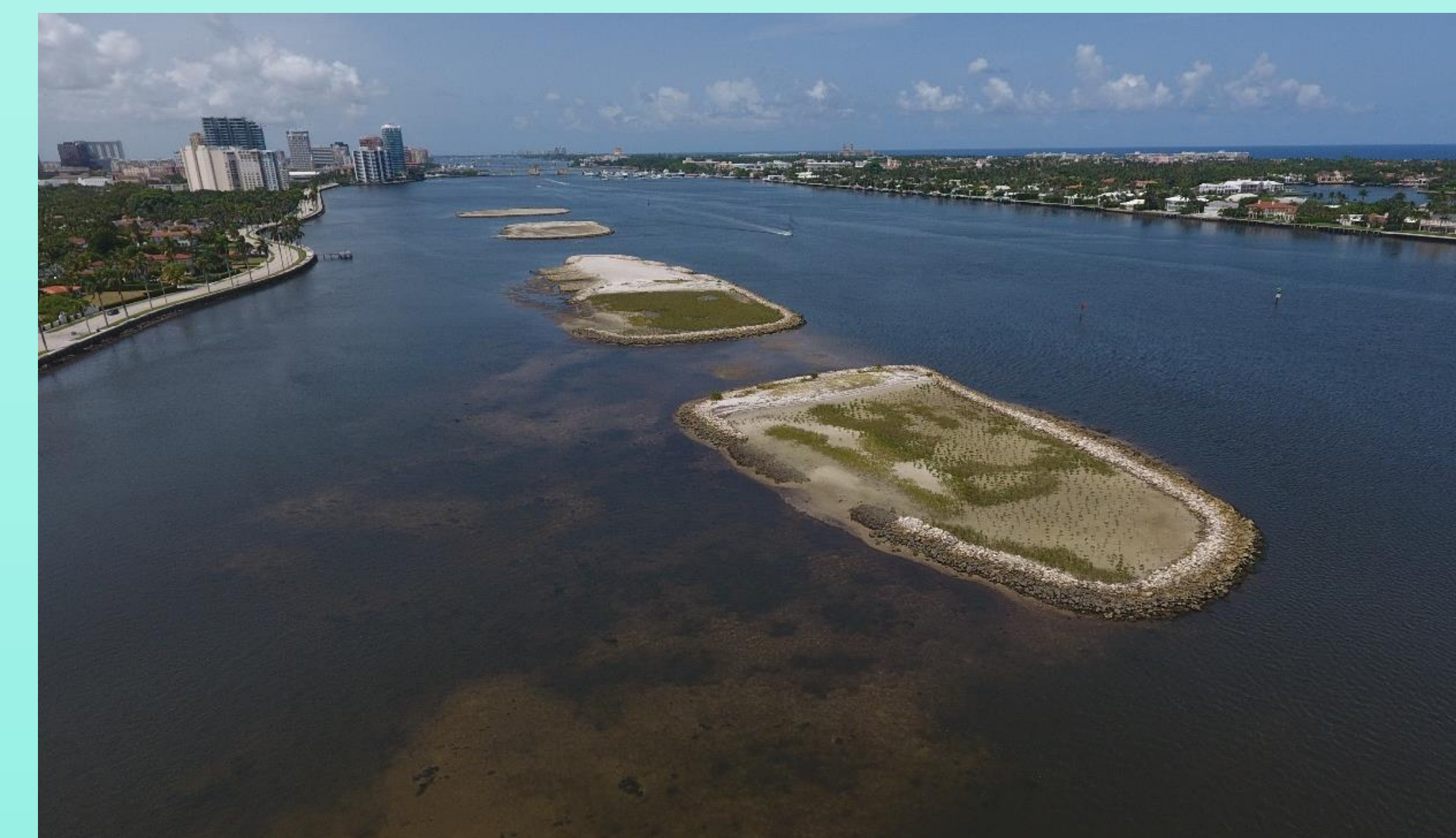


Figure 5: August 2022 of constructed islands and seagrass habitat at Tarpon Cove

Project Funding

- 2016 Lake Worth Lagoon Initiative Legislative Funding through the State of Florida Legislature via an agreement with Florida Department of Environmental Protection provided \$1.68 million which is matched by,
- \$1.68 million in County funds from the Manatee Protection Fund
- 2019 FWC State Wildlife Grant Program provided \$100,000 to create oyster habitat
- 2019 USFWS National Coastal Wetlands Conservation Grant Program through FWC provided \$1 million to create several estuarine components 2019 NOAA Hurricane Irma Fisheries Disaster Funding provided \$1 million through FWC to create seagrass habitat



Results as of November 2022

- Seagrass habitat ~7.2 acres naturally recruited
- Intertidal habitat ~4.28 acres
 - Mangrove ~3.5 acres
 - Tidal Flats ~0.78 acres
- Oyster ~1.2 acres
- Bird Mounds ~1.56 acres
- Installed 13,800 tons of limestone totaling 3,400 linear feet of rock revetment
- Placed 394,200 cubic yards of sand of which 93% (366,800 cubic yards) was beneficial use material, only 7% (27,400 cubic yards) was purchased



Benefits

- Immediate utilization as nesting and foraging habitat for 3 species of threatened birds (American Oystercatchers, Least Terns and Black Skimmers).
- Oysters, 3 species of seagrasses, mangroves and salt marsh grasses have taken hold of the area and are successfully thriving and recruiting providing invaluable habitat for numerous estuarine species that call the lagoon home.



Acknowledgements

- The project is a \$5.5 million multi-partner collaboration supported by the Florida Fish and Wildlife Commission, U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration, Florida Department of Environmental Protection, and Palm Beach County. 366,800 cubic yards of beneficial dredged material provided by from multiple sources including Florida Inland Navigation District, Rybovich Marina, and the Town of Palm Beach. The project was supported by the City of West Palm Beach, Marine Industries of Palm Beach County, West Palm Beach Fishing Club, MANG Gear, and Atlantic Coastal Fish Habitat Partnership.