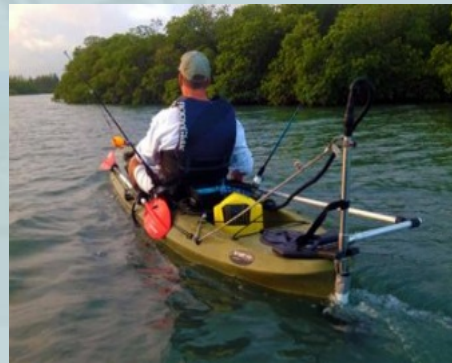


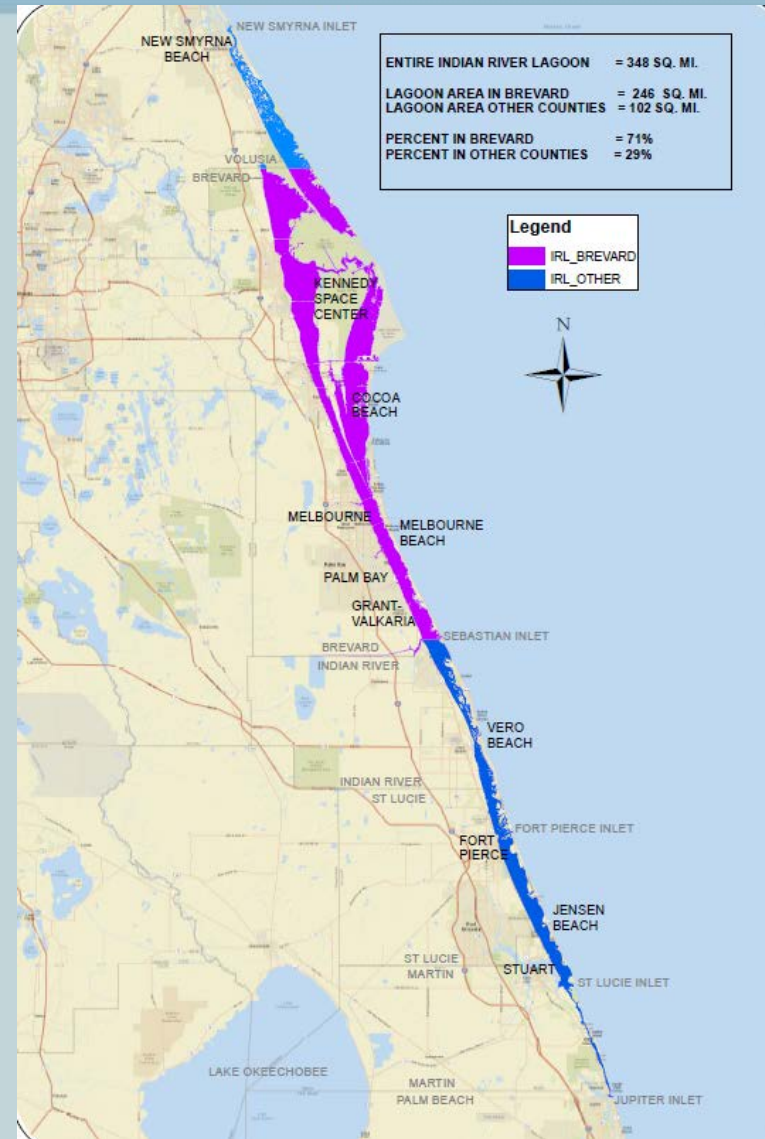
Developing a Shoreline Habitat Restoration and Management Plan for Brevard County



Jane Hart
Brevard County
Natural Resources Management Department

Indian River Lagoon

- 71% in Brevard County
- 246 square miles
- Includes Banana River and portions of Indian River and Mosquito Lagoon



Significant Ecosystem

- IRL is an Estuary of National Significance
- One of the greatest diversity of plants and animals in the nation
- Seagrass-based ecosystem



Delicate Balance

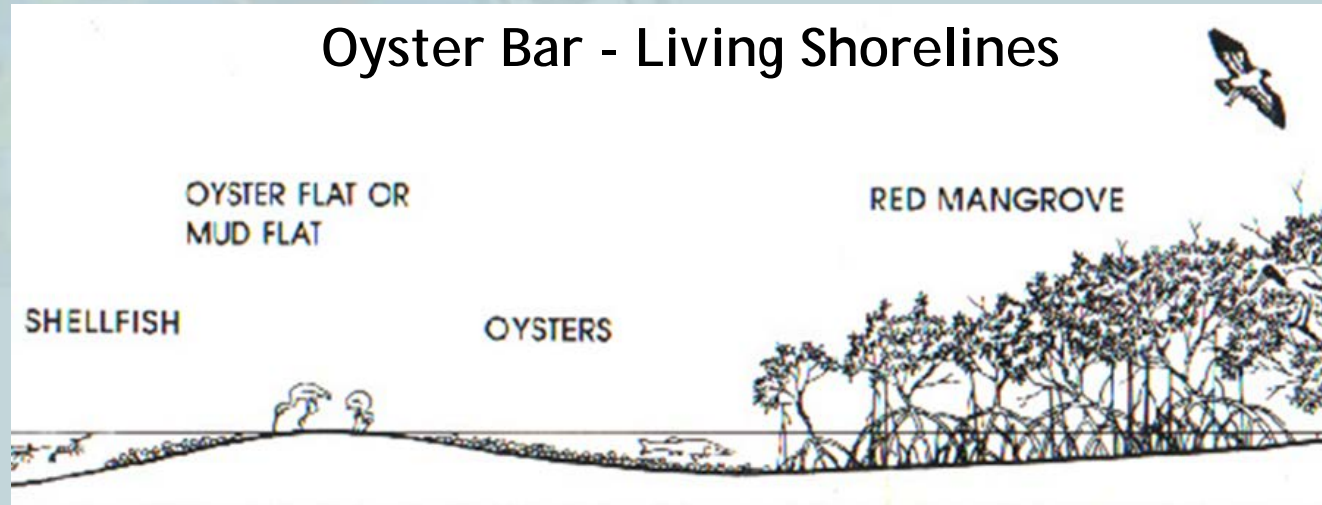
- Balance has been disturbed:
 - Excessive pollutant inputs to the waterbodies
 - Accumulation of harmful muck deposits
 - Loss of habitat
- Impacts of Poor Water Quality:
 - Seagrass loss
 - Shellfish harvests decline
 - Harmful algae blooms increase
 - Fish kills increase

Restoring Balance to the IRL



Developing a Shoreline Habitat Restoration and Management Plan

- **IDENTIFY** and **PRIORITIZE** environmental enhancement and erosion protection opportunities along the IRL in Brevard County
- **ENCOURAGE** and **EXPAND** the use of living shoreline treatments for shoreline stabilization, erosion control, and habitat provision
- **PROTECT** water quality in the Lagoon

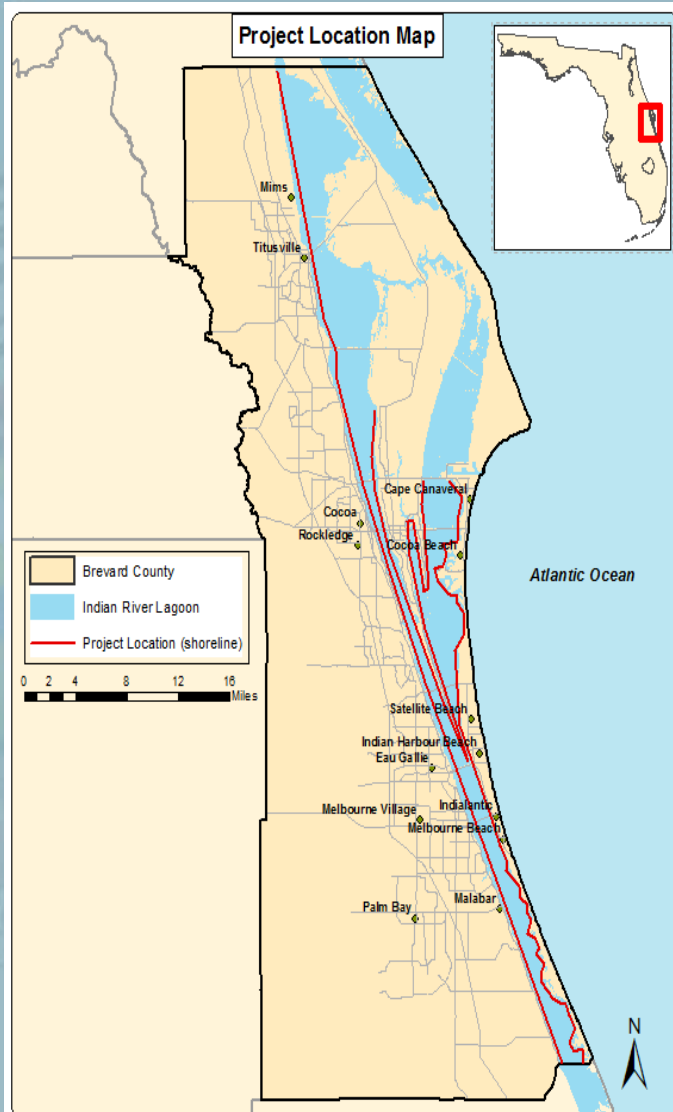


Living Shorelines: Extra Benefits



	Hard Shorelines	Living Shorelines
<ul style="list-style-type: none"> Provides erosion protection 	✓	✓
<ul style="list-style-type: none"> Cost efficient 		✓
<ul style="list-style-type: none"> Increases sediment accretion (shore gain) 		✓
<ul style="list-style-type: none"> Increases aesthetic value of waterfront properties 		✓
<ul style="list-style-type: none"> Increases critical habitat for birds, fishes and invertebrates 		✓
<ul style="list-style-type: none"> Increases spatial refuge for fish and crustaceans 		✓
<ul style="list-style-type: none"> Increases food for coastal wildlife 		✓
<ul style="list-style-type: none"> Reduces the amount of nutrients and pollutants entering coastal waterways 		✓

Shoreline Survey and Mapping Project



- 2016/17 DEP CPI grant funding CM714
- Shoreline characteristics must be considered to select appropriate stabilization and restoration methods
- Field survey of ~175 miles of Brevard shoreline in IRL
- Geodatabase development and mapping
- Provides a critical baseline of information



Shoreline Survey and Mapping Project



UCF student assistants collecting shoreline slope data at a rip-rap shoreline.

Photo provided by Dr. Melinda Donnelly, UCF

Survey points taken every 30 m (developed areas) and every 100 m (undeveloped)

Attribute data collected:

- Shoreline type
- Vegetation
- Oyster presence
- Erosion
- Slope
- Adjacent land use
- Water depth
- Bottom type
- Outfalls

Shoreline Survey

Hardened Structures on Shoreline



Bulkhead



Bulkhead with Rip-Rap



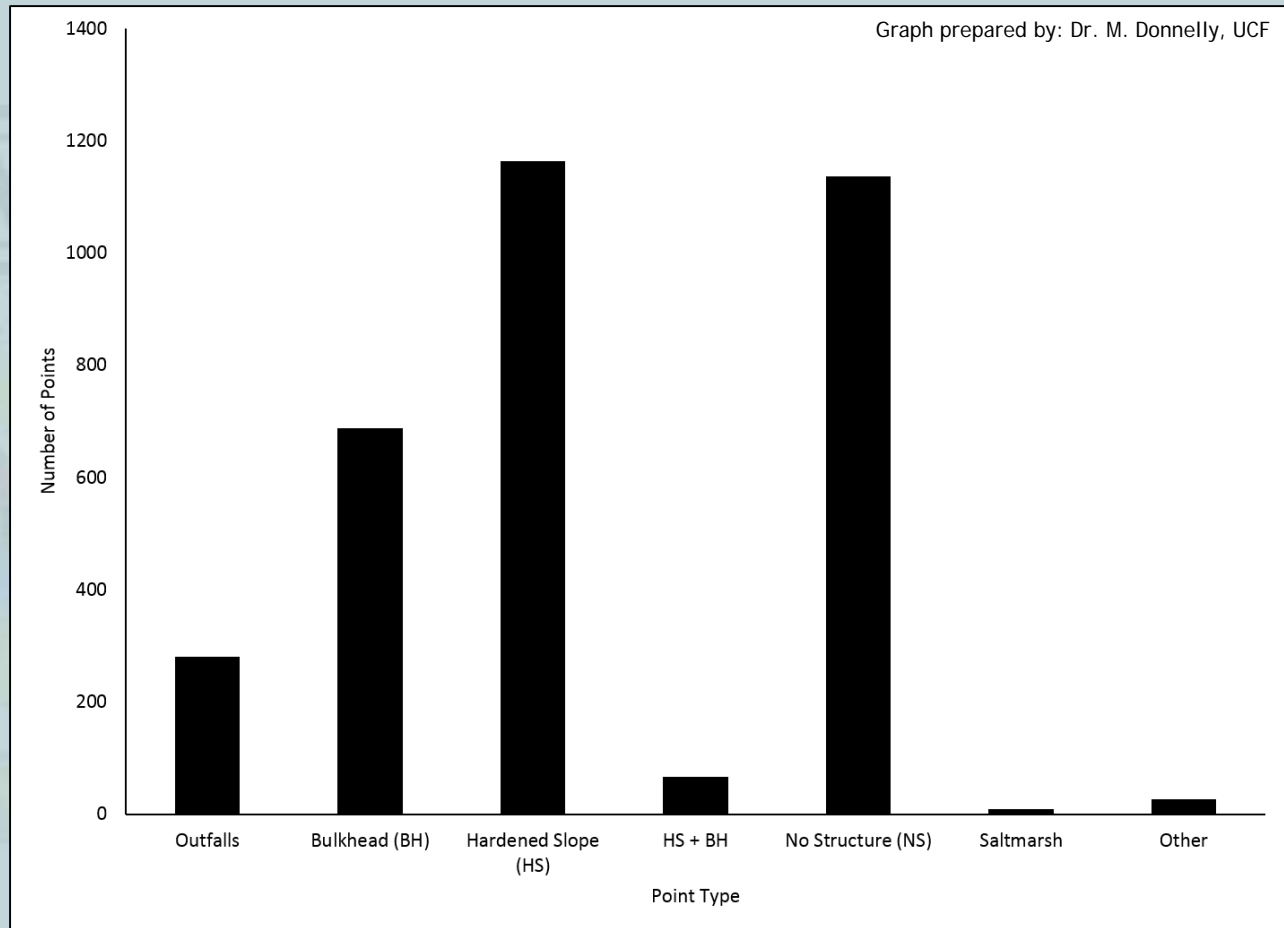
Hardened Slope



Bulkhead with outfall

Shoreline Survey

Preliminary Results: Shoreline Types



Survey points representing outfalls and shoreline structure types.

Shoreline Survey

Preliminary Results: Vegetation



- Residential and commercial areas: turf grasses most common
- Undeveloped areas: mangroves most common
 - *Rhizophora mangle* commonly found in the lowest intertidal region
 - *Avicennia germinans* and *Laguncularia racemosa* in the middle intertidal regions

Shoreline Survey

Preliminary Results: Oysters



- Identified at 651 shoreline locations
- Central and southern portion of county

Next Steps: Developing a Shoreline Plan



- Developing a Shoreline Habitat Restoration and Management Plan
- 2016/17 IRL NEP Cost-share funding
- Primary data sets for Geodatabase:
 - Shoreline survey data
 - Wave energy data
 - Historic aerial analysis
- A geospatial model will help determine the most suitable shorelines to use “living shorelines” in Brevard.



Save Our Lagoon Project Plan: REDUCE, REMOVE, RESTORE, RESPOND



- Ten year Project Plan
- Funded by ½ cent sales tax
- Includes \$10-million for Oyster Reefs and Living Shorelines
- Year 1 begins October 1, 2017

FULL PLAN AVAILABLE AT: www.brevardfl.gov/NaturalResources

Questions?

