

# The Florida Manatee: A Review of the Northern Gulf and Wakulla River

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[MyFWC.com/Manatee](https://myfwc.com/manatee)



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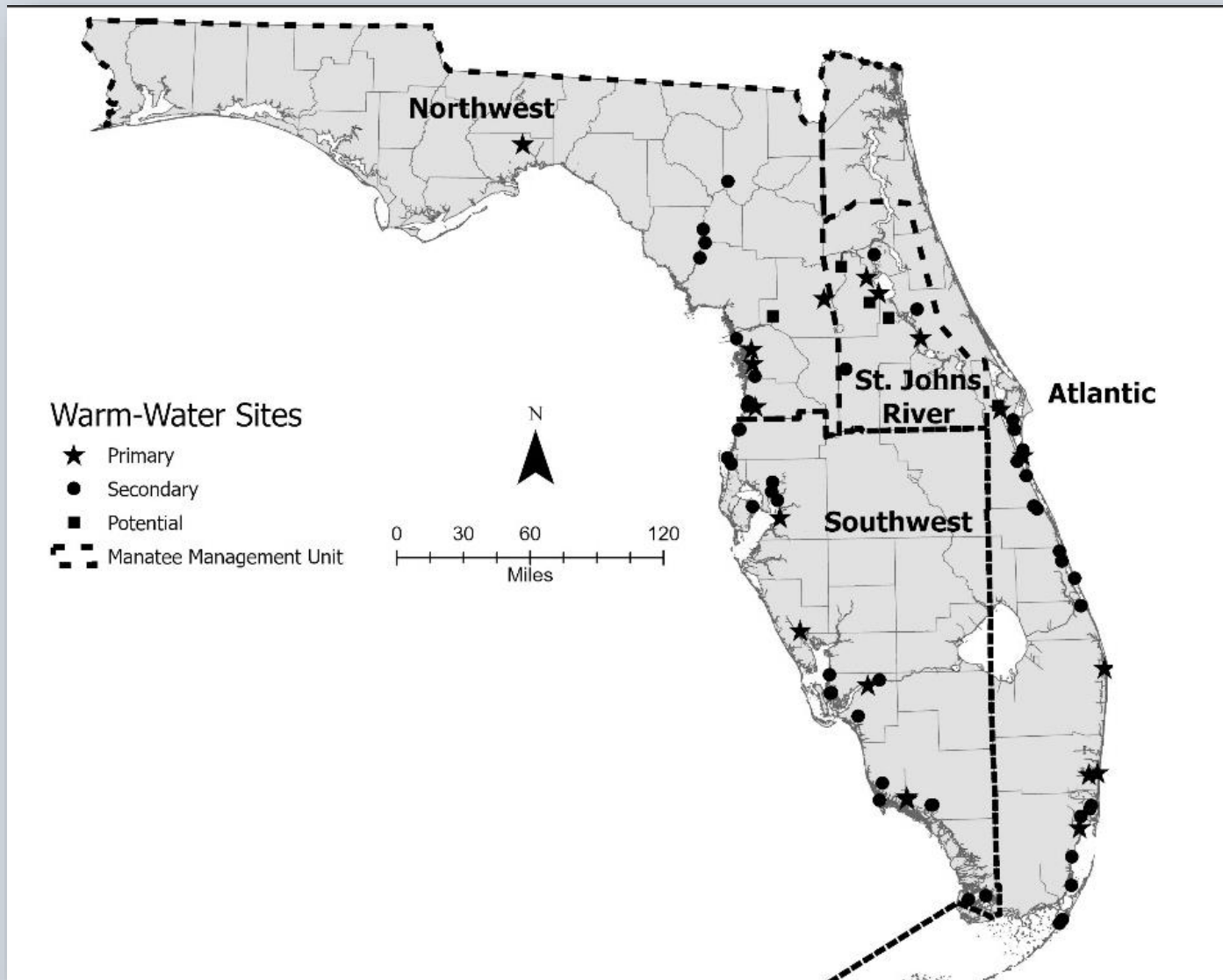


# Manatee Habitat: Warm-water



- Dependent on warm water sites during cold weather
- Require water temps.  $>68^{\circ}\text{F}$  ( $20^{\circ}\text{C}$ )
- Multiple types of Warm-water refuge
- Florida Warm-water sites may be considered critical habitat





[MyFWC.com/Manatee](http://MyFWC.com/Manatee)



# Manatee Habitat: Forage



- Manatees are herbivores
- Graze on all types of fresh and saltwater plants (Submerged Aquatic Vegetation)
- Consume 4 - 9 % of their body weight per day



# Manatee Habitat: Forage

## Threats to SAV:

- Dredging of waterways
- In-water and shoreline construction of (ex. seawalls)
- Excessive nutrient run-off from land (leading cause of phytoplankton blooms)
- Shading from docks
- Propeller (“prop” scars)
- Recreational activities





# Management: Manatee Protections

- The Florida Manatee Sanctuary Act – 379.2431(2), FS
- FWC must use the “best available information” [Research feeds management]
- Protect manatees from direct and indirect threats
  - Manatee Protection Zones
  - Environmental Commenting
  - Habitat Restoration & Monitoring
- Includes both regulatory and outreach



# Habitat Restoration



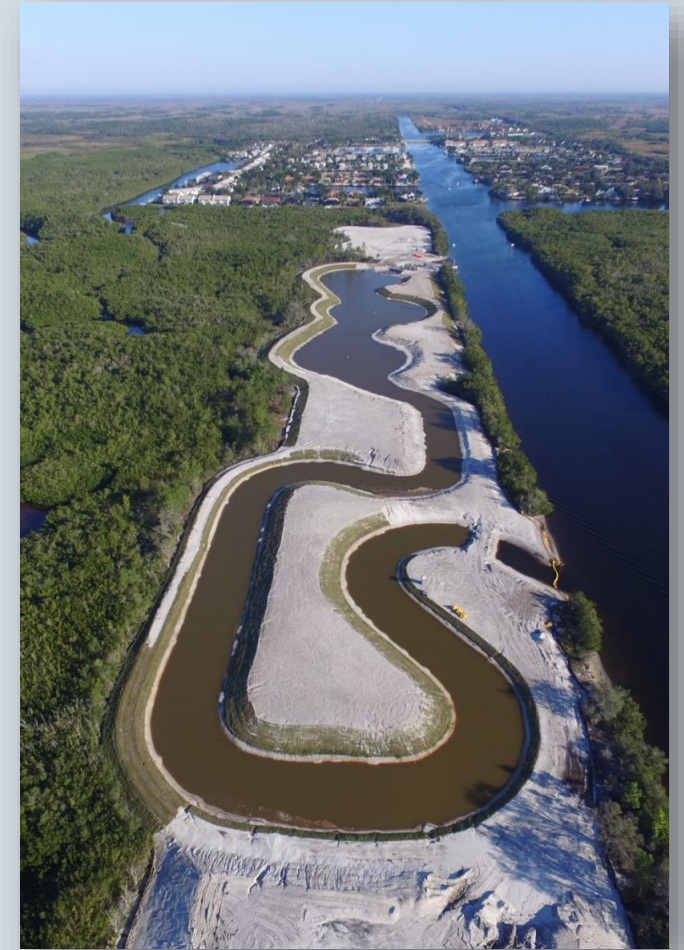
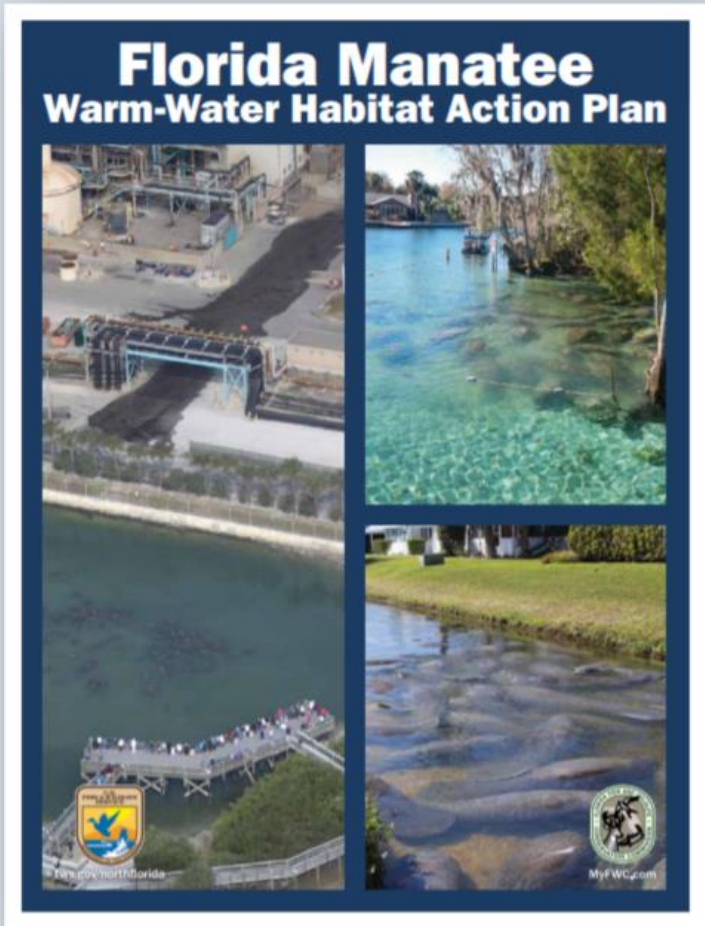
- Shoreline stabilization
- Seagrass restoration
- Dredging for accessibility
- Mitigation features





# Warm-Water Habitat

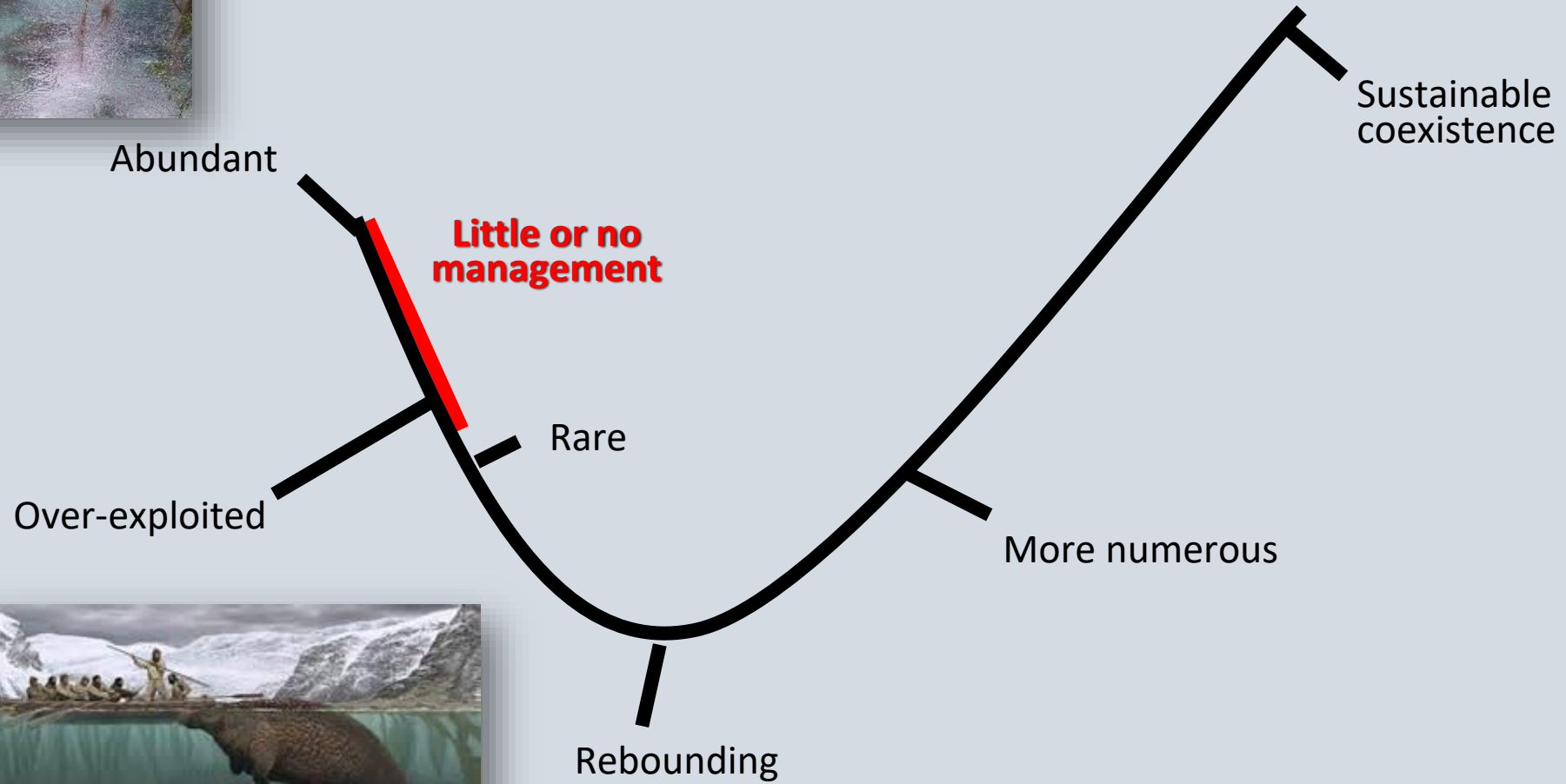
Develop a conceptual plan for a long-term network of warm-water habitat.



[MyFWC.com/Manatee](http://MyFWC.com/Manatee)



# Status: Then and Now



[MyFWC.com/Manatee](http://MyFWC.com/Manatee)



# Manatee Protection Laws

## Federal

- Marine Mammal Protection Act 1972 (as amended)
- Endangered Species Act 1973 (as amended)

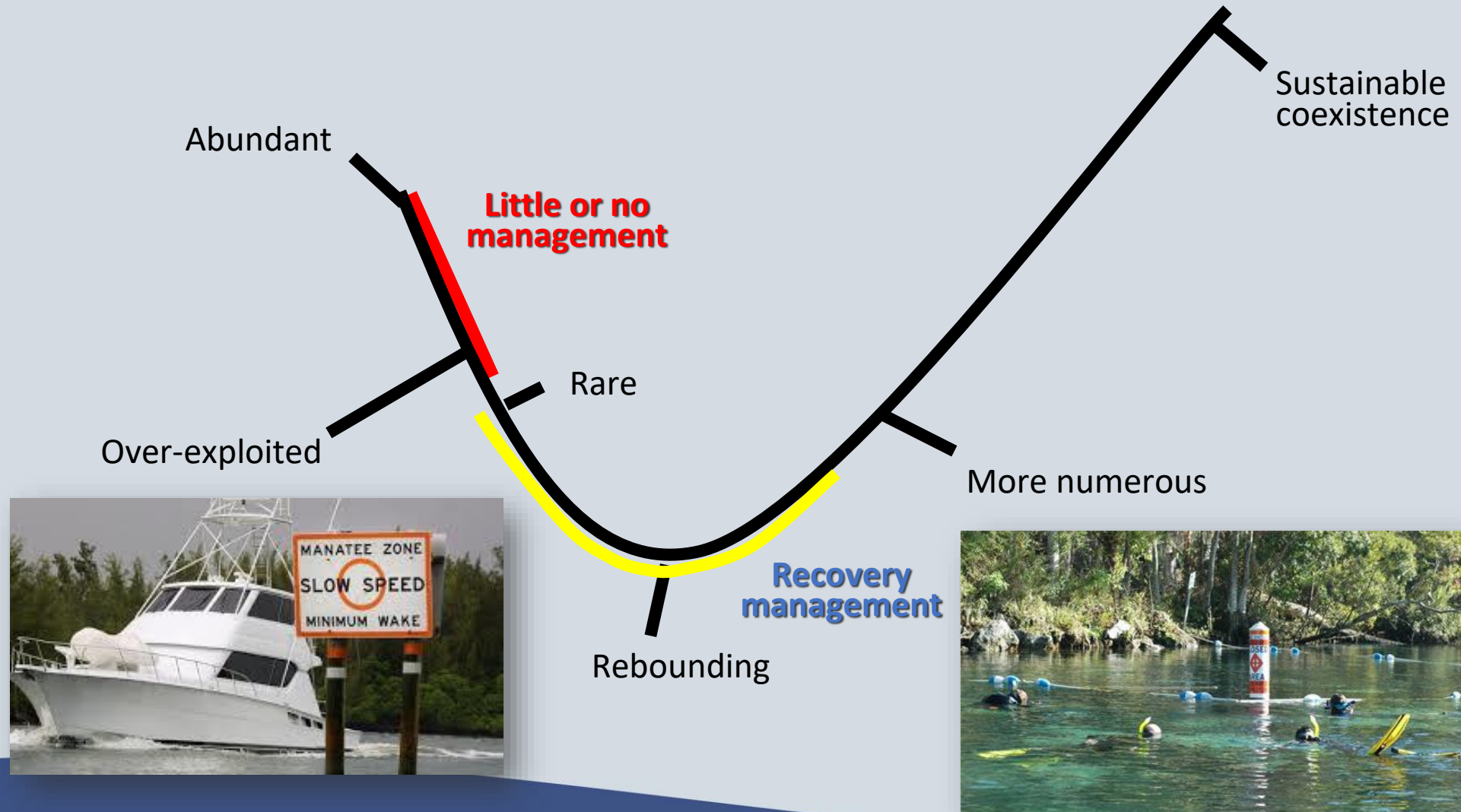
## State

- First protected by law in 1893
- Florida Manatee Sanctuary Act 1978
- Chapter 379 Florida Statutes
- Law is implemented by rules in 68C-22 F.A.C.



[MyFWC.com/Manatee](http://MyFWC.com/Manatee)

# Status: Then and Now



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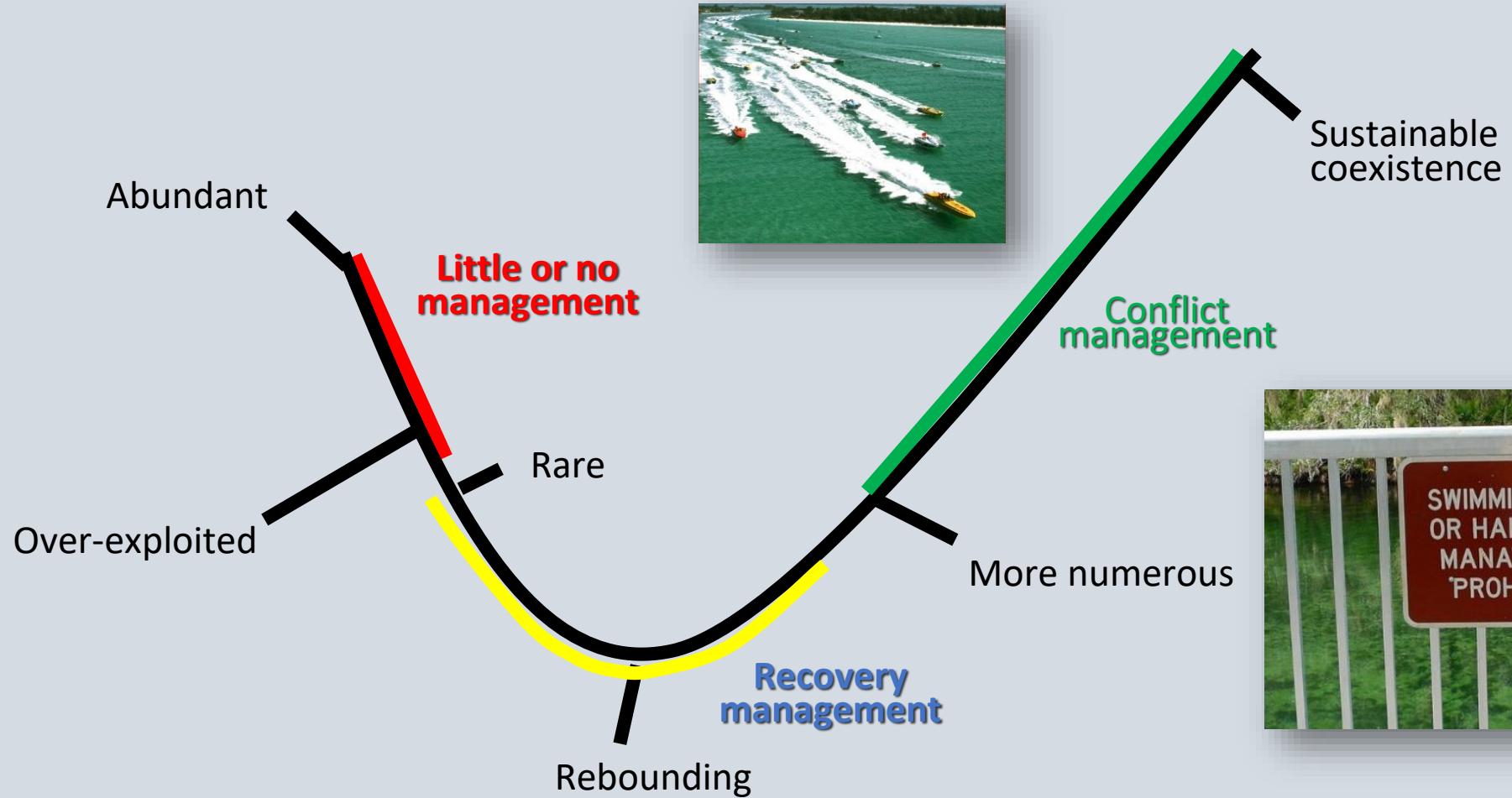
# USFWS Reclassification

- 2017: Endangered to Threatened
- Notable increases in populations and improvements in habitat
- Downlisting will not diminish any existing protections
- Protections will continue to play a vital role in recovery



[MyFWC.com/Manatee](https://myfwc.com/manatee)

# Status: Then and Now





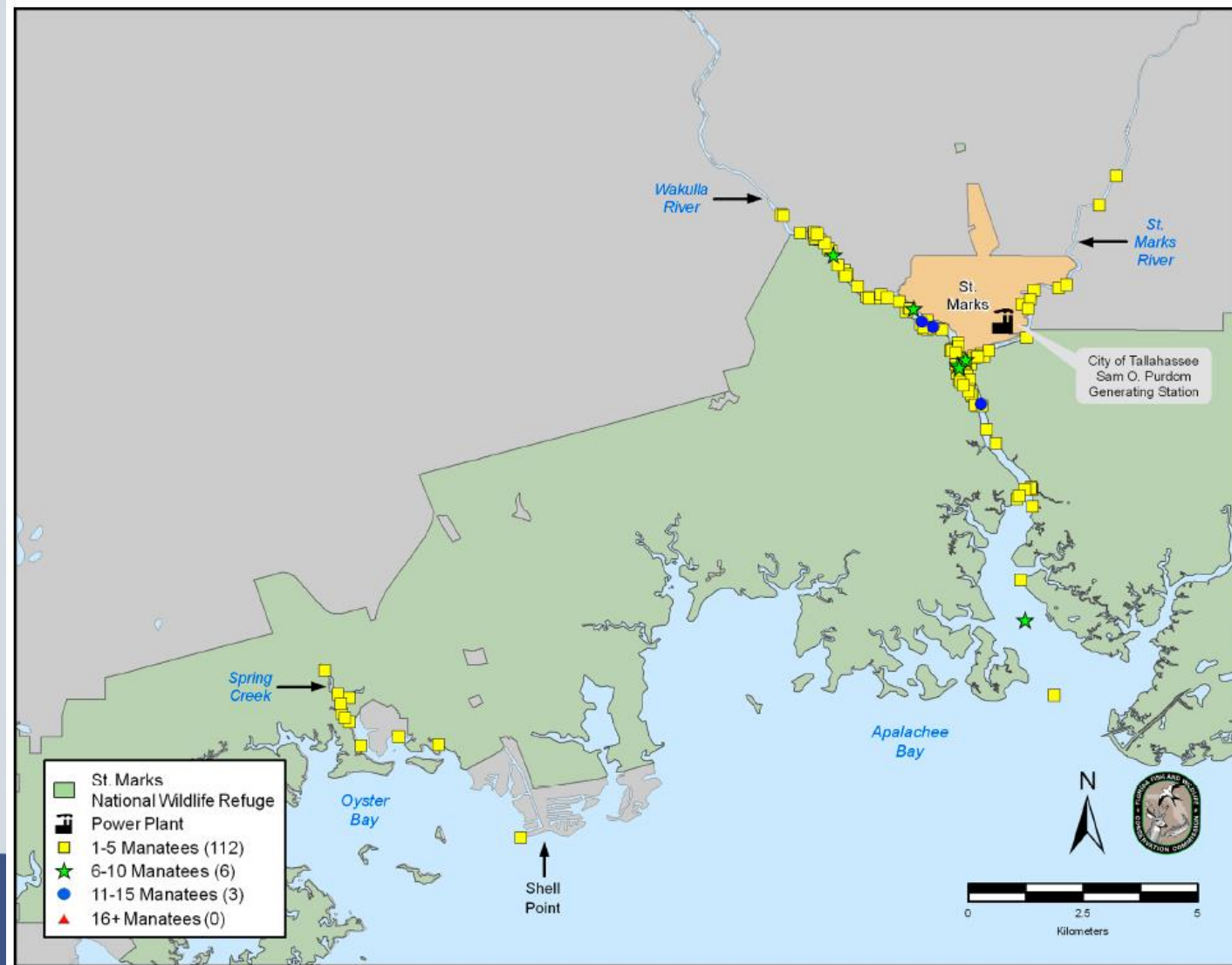
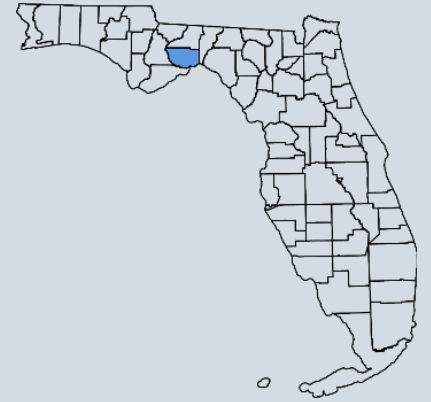
# Manatees in the Northern Gulf of Mexico

- Limited Telemetry Data
- Panhandle Sightings Database
- Wakulla & Franklin Distribution Surveys (past and present)
- Several studies “in progress”



# Wakulla County

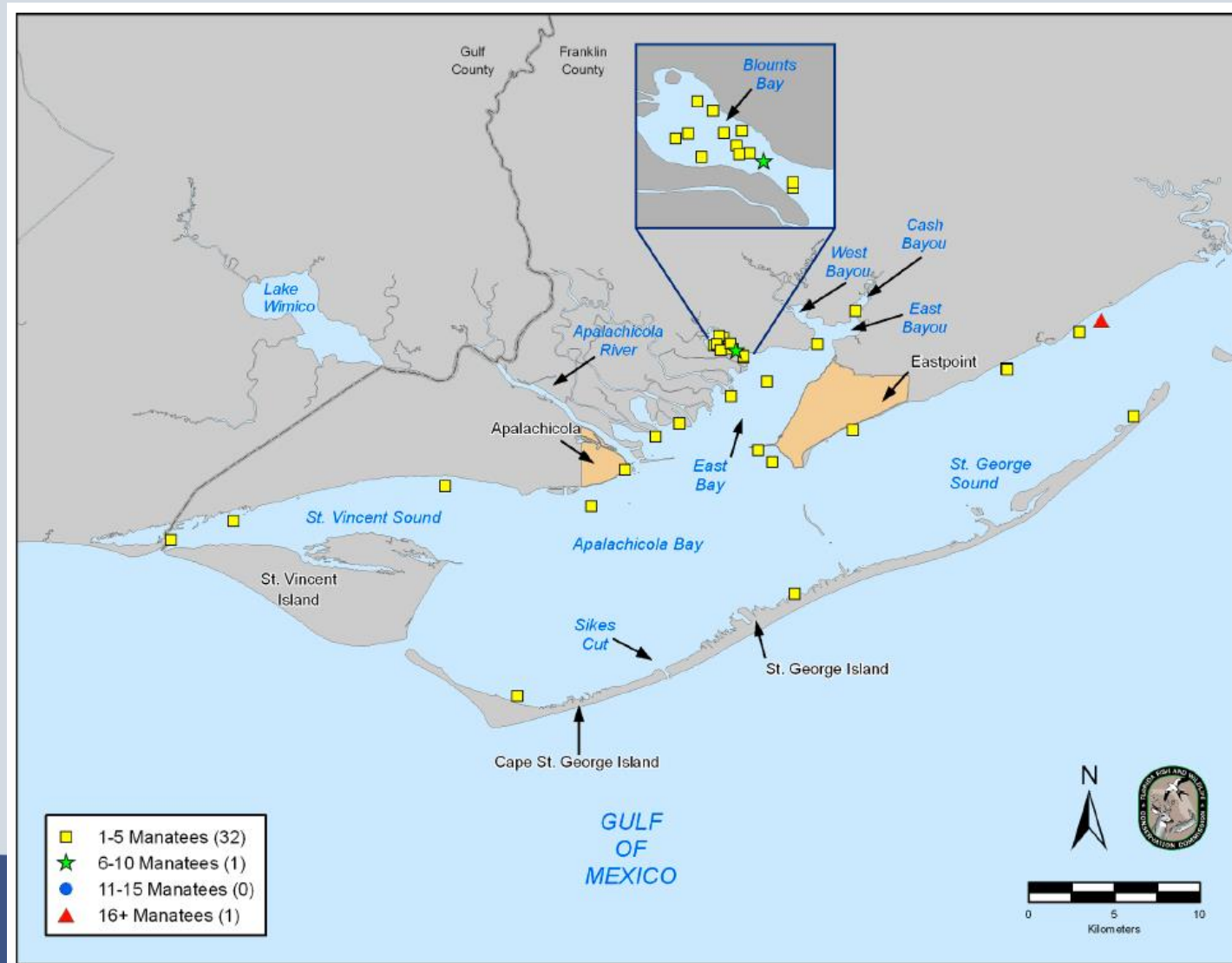
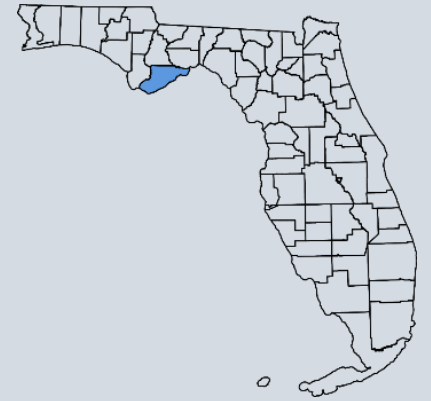
October 1994 – September 1996





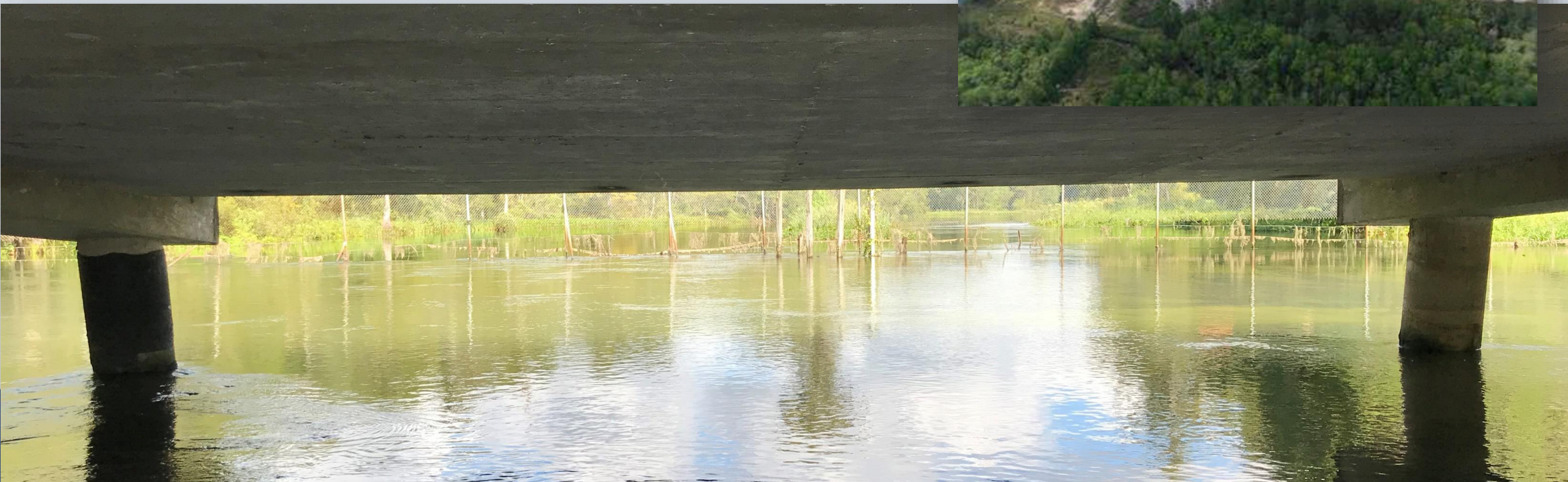
# Franklin County

May 1997 – August 1999



# More manatees in Wakulla Spring?

- Shifts in warm-water access
- Available forage
- Seasonal changes





# Manatee Distribution and Habitat Use in the Northern Gulf of Mexico (ongoing; USGS)

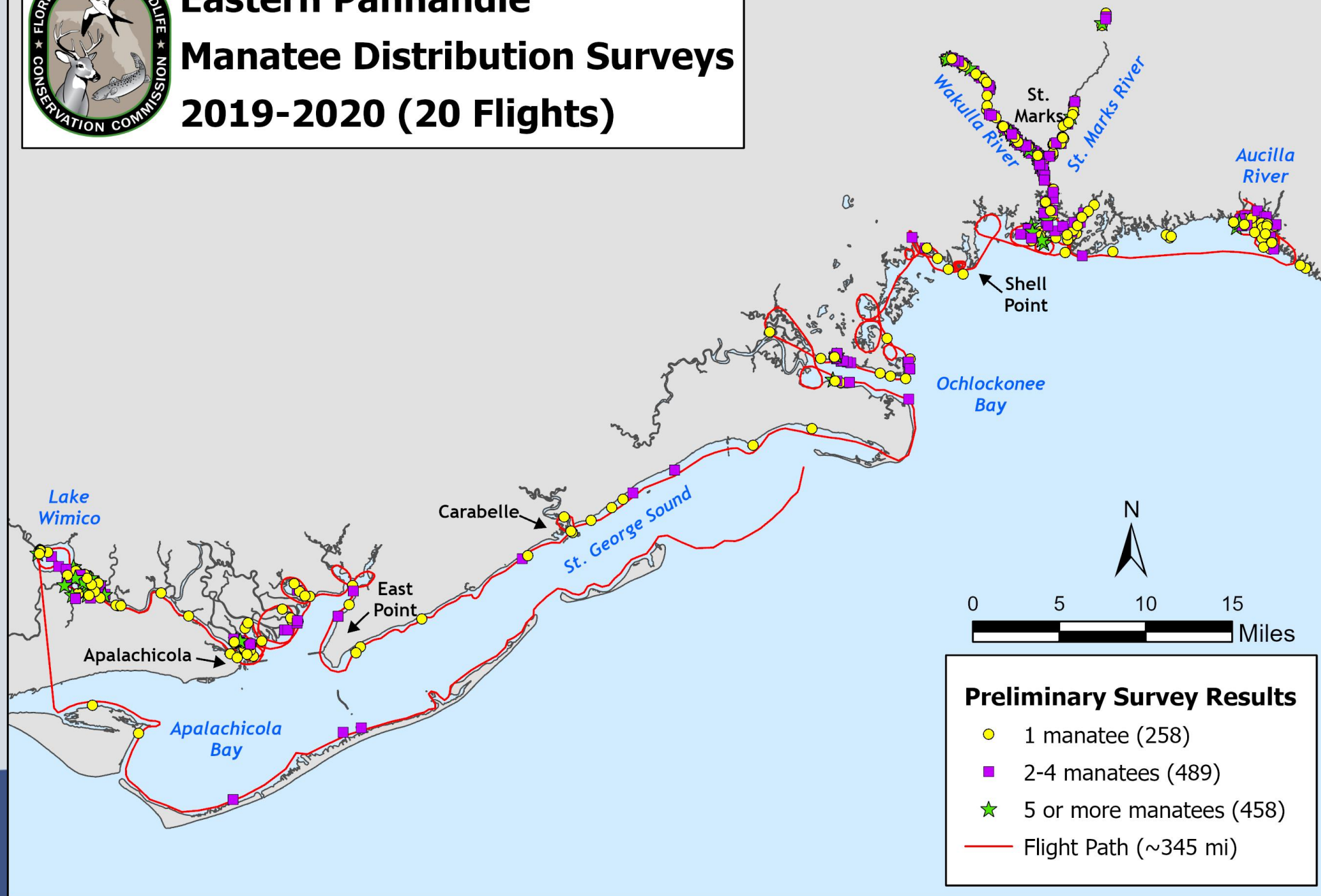


- 43 tagged manatees (2006-2017)
- Seasonal movement patterns
- SAV/habitat ground truthing

Daniel H. Slone (dslone@usgs.gov), James P. Reid, Susan M. Butler, Robert K. Bonde, Cathy A. Beck  
U.S. Geological Survey, Wetland and Aquatic Research Center, Gainesville, FL, USAf-Mexico-Region/Slone.pdf



# Eastern Panhandle Manatee Distribution Surveys 2019-2020 (20 Flights)





### Wakulla Aerial Surveys

1994-1996 (46 Flights)

- Jan - Mar
- Apr - Jun
- ▲ Jul - Sep
- Oct - Dec
- Flight Path



0 0.5 1  
Miles

Wakulla Springs

Shadeville Rd  
Bridge

Coastal Hwy  
Bridge

Wakulla River



### Wakulla Aerial Surveys

Apr - Jun 2020 (20 Flights)

- Jan - Mar
- Apr - Jun
- ▲ Jul - Sep
- Oct - Dec
- Flight Path



0 0.5 1  
Miles

Wakulla Springs

Shadeville Rd  
Bridge

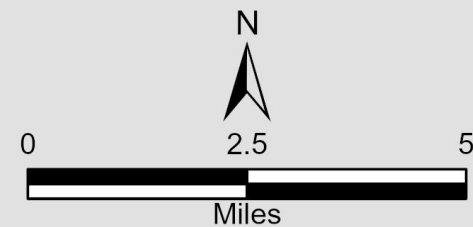
Coastal Hwy  
Bridge

Wakulla River



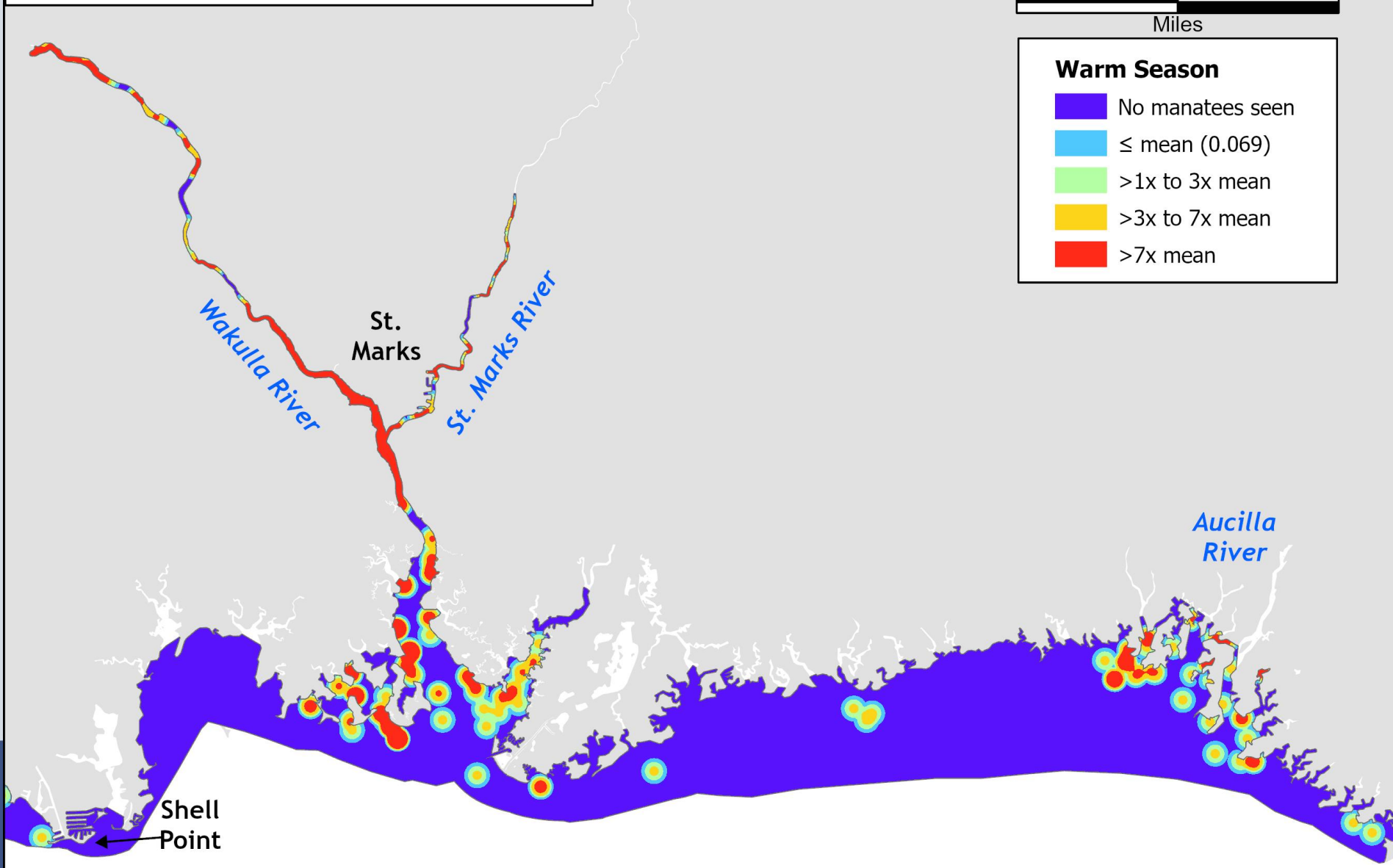


**Eastern Panhandle (2019-2020)**  
**Preliminary Kernel Density Estimates**  
**Warm Season (Apr - Nov; 14 Flights)**



**Warm Season**

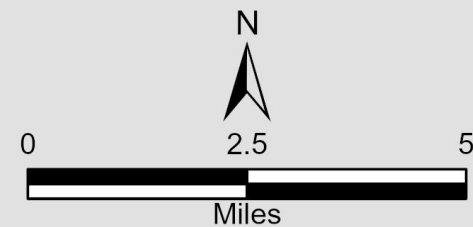
- No manatees seen
- $\leq$  mean (0.069)
- $>1x$  to  $3x$  mean
- $>3x$  to  $7x$  mean
- $>7x$  mean





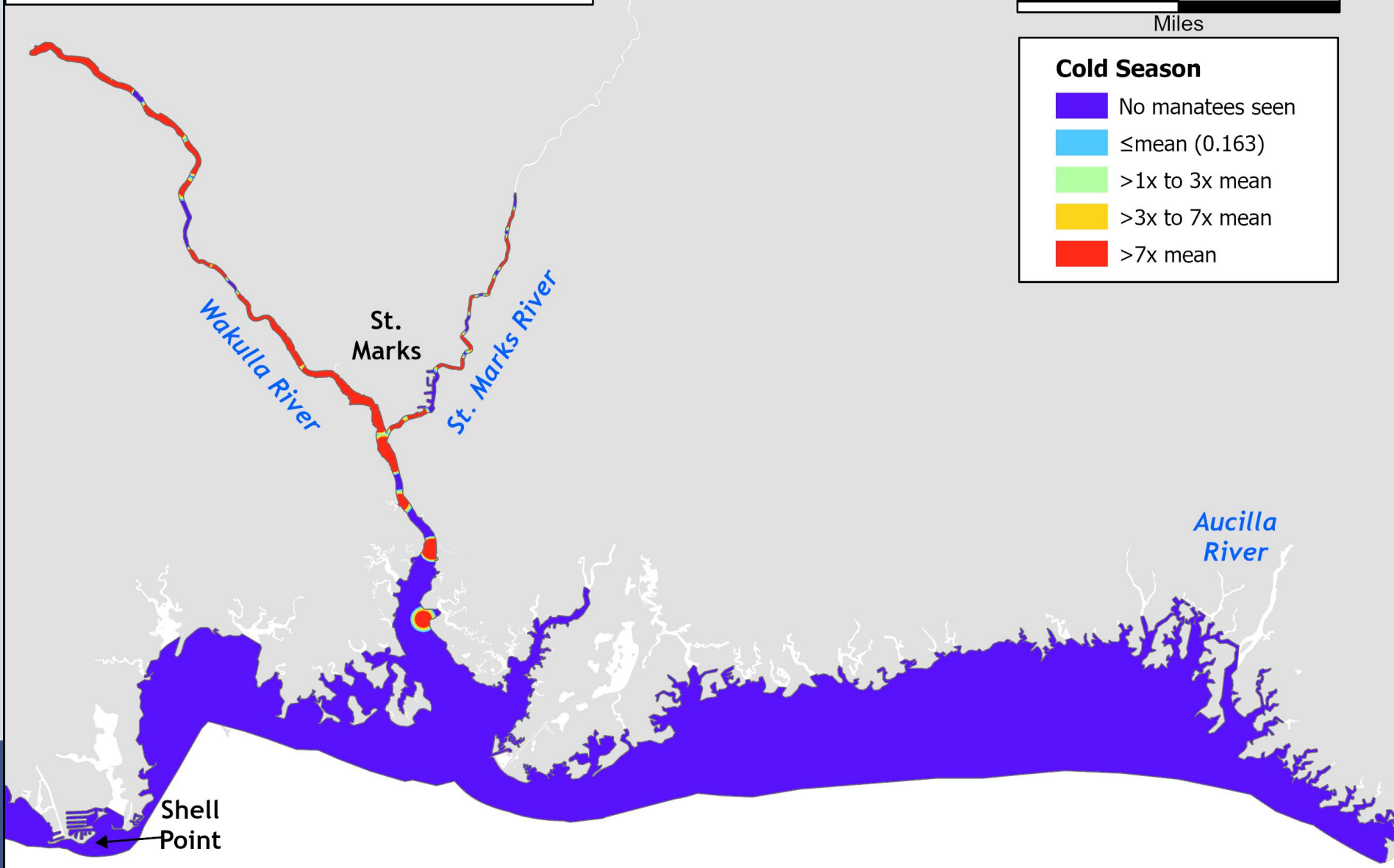


**Eastern Panhandle (2019-2020)**  
**Preliminary Kernel Density Estimates**  
**Cold Season (Oct - Mar; 6 Flights)**



**Cold Season**

- No manatees seen
- $\leq$ mean (0.163)
- $>1x$  to  $3x$  mean
- $>3x$  to  $7x$  mean
- $>7x$  mean





Mashes Sands





Aucilla River



Dog Island seagrass beds





Wakulla River



# Natural Threats

- Cold Stress
- Red tide/Harmful Algal Blooms





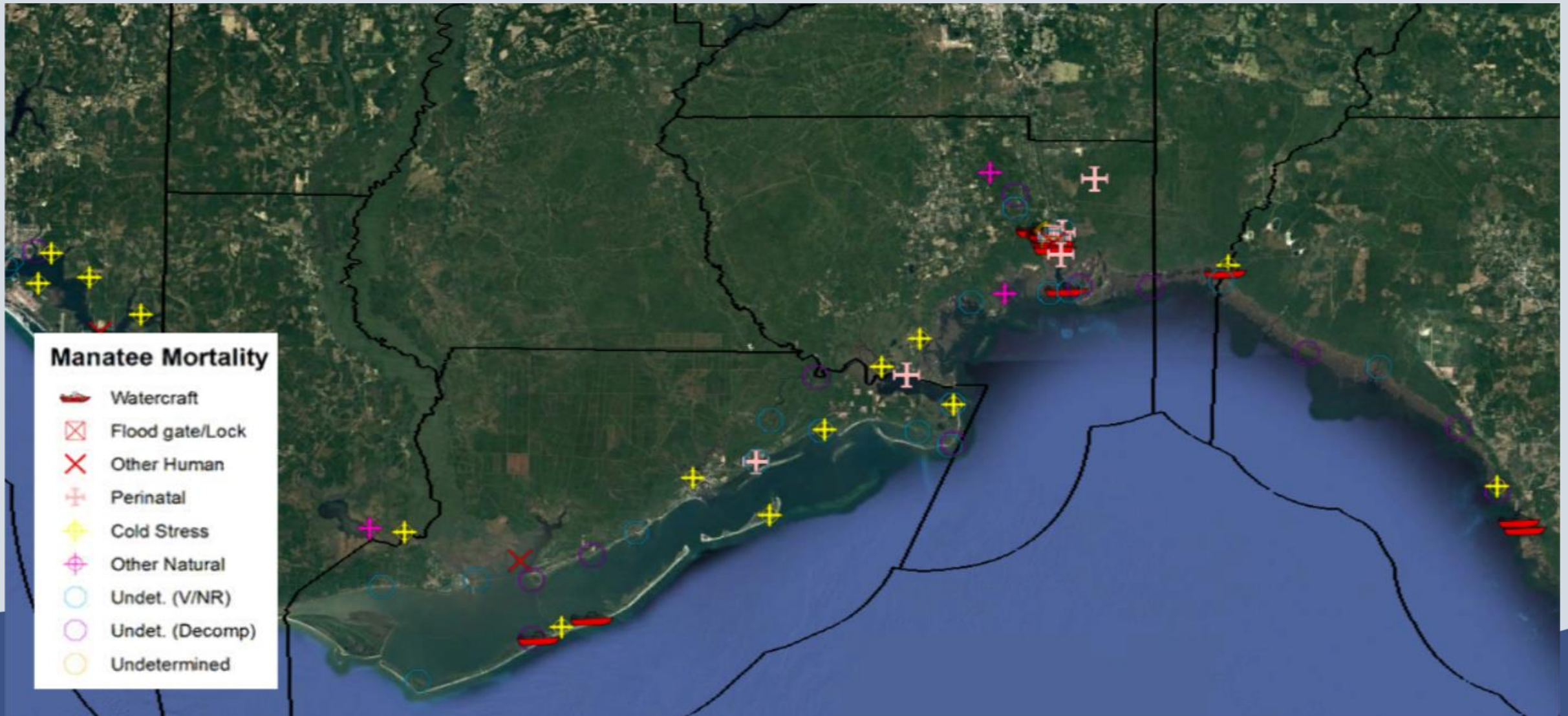
# Human-related Threats

- Watercraft collisions
- Loss of warm-water habitat
- Coastal development
- Entanglement/Ingestion
- Structure  
Death/Entrapment

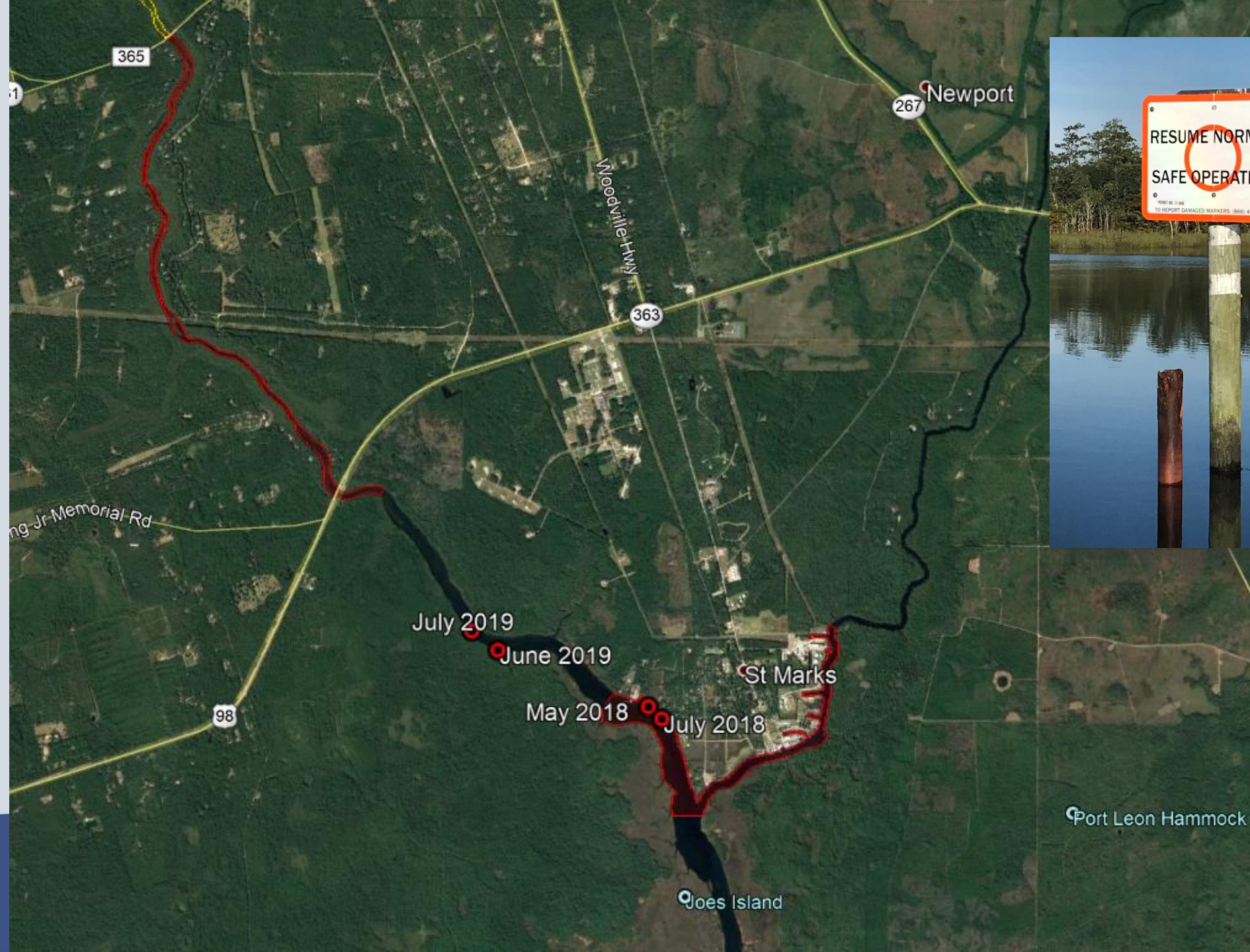




# Manatee Mortality - NGOM









# Florida Friendly Boating



## Be friendly to wildlife

- **Never feed wild animals.** It is illegal, unhealthy, and trains wildlife to seek out boats, increasing the risk of injury. Avoid dumping leftover bait overboard.
- **Reduce disturbance.** Stay quiet and be aware of accidentally separating manatee mother and calf pairs, disrupting mating herds, or blocking a manatee's path if it moves towards you.
- **Avoid injuries.** It is illegal to chase, hold, ride, jump on, or hit manatees or other wildlife. Never try to "fish" or attempt to catch birds, dolphins, manatees or sea turtles.
- **Avoid high manatee use areas.** Manatees can suffer from cold stress in the wintertime. If disturbed or chased out of warm water areas, it may cause death, illness or affect their ability to reproduce.

## Look out below

Collisions with boats can cause injury and death among manatees, sea turtles and dolphins.

**Manatees** are an endangered species native to Florida, and are designated as the State's official marine mammal. They live in fresh, brackish and salt water areas, and eat aquatic vegetation such as seagrass. Because they must surface to breathe, many of these slow-moving creatures are injured or killed by boats each year.

### How to recognize a manatee's presence:

- Look for a swirl on the water's surface
- Look for a tail or nose (usually the only parts of the manatee's body that break the surface of the water)
- Listen for their breath



Five species of **sea turtles** are found in Florida waters; all are either endangered or threatened. Sea turtles rest at or just below the surface of the water and must raise their heads out of the water to breathe.

### How to recognize a sea turtle's presence:

- Look for a sea turtle's head or top portion of shell at the surface of the water.



## What boaters can do

- **Wear polarized sunglasses.** Polarized lenses reduce reflected glare from the water and make it easier to see people, wildlife or objects underneath the surface.
- **Know the zones.** Abide by the speed regulations as posted. Idle speed no wake - minimum speed needed to maintain steerage. Slow speed minimum wake - fully off plane and settled in the water.
- **Use marked channels.** Greater water depth protects you, seagrass and wildlife.
- **Post a lookout.** Designate a person to watch for wildlife, other boaters, swimmers, or obstructions when the vessel is underway.
- **Save a life.** Properly discard or recycle fishing line and plastics, and use circle or non-stainless steel hooks to prevent wildlife injury or death due to ingestion or entanglement.

## Wear a life jacket

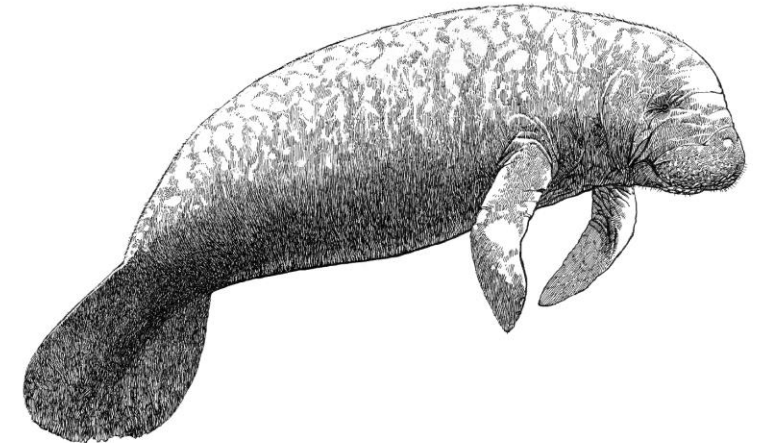


**Wildlife Alert:**  
**1-888-404-FWCC (3922)**  
**cell \*FWC or #FWC**

Report sick, dead, or injured manatees or sea turtles,  
and any wildlife or boating law violations.

For more information go to [MyFWC.com](http://MyFWC.com)

# Caution Boaters Watch for Manatees



**Report collisions, sick, dead or injured manatees  
and any wildlife or boating law violations to:**



**FWC's Wildlife Alert Hotline**  
**888-404-FWCC (3922)**

cell \*FWC or #FWC





# Manatees in the Northern Gulf of Mexico



- Population is increasing
- Public awareness is increasing
- Agencies and partner monitoring continues



# Questions?

[www.MyFWC.com/Manatee](http://www.MyFWC.com/Manatee)

<https://myfwc.com/research/manatee/rescue-mortality-response/ume/>

Imperiled Species Management Section:

(850) 922-4330

ImperiledSpecies@MyFWC.com

