

Vessel Impacts to Shallow Water Habitat: Groundings and Prop Scarring in the Florida Keys National Marine Sanctuary

Presented to the FKNMS Sanctuary Advisory Council

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Goals of this Presentation



Discuss impacts to shallow water habitat caused by vessel groundings:

- FKNMS authorities and zoning
- Vessel grounding overview
- Injuries and restoration
- Management strategies
- Management challenges and responses

Marine Zoning Action Plan

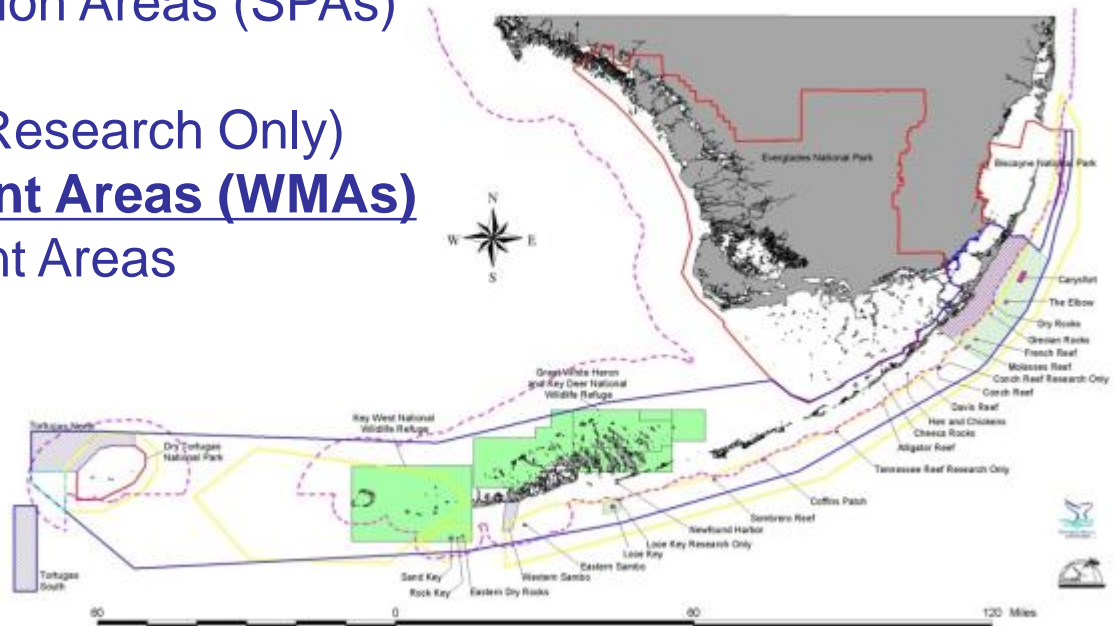


Florida Keys National Marine Sanctuary & Protection Act (1990)

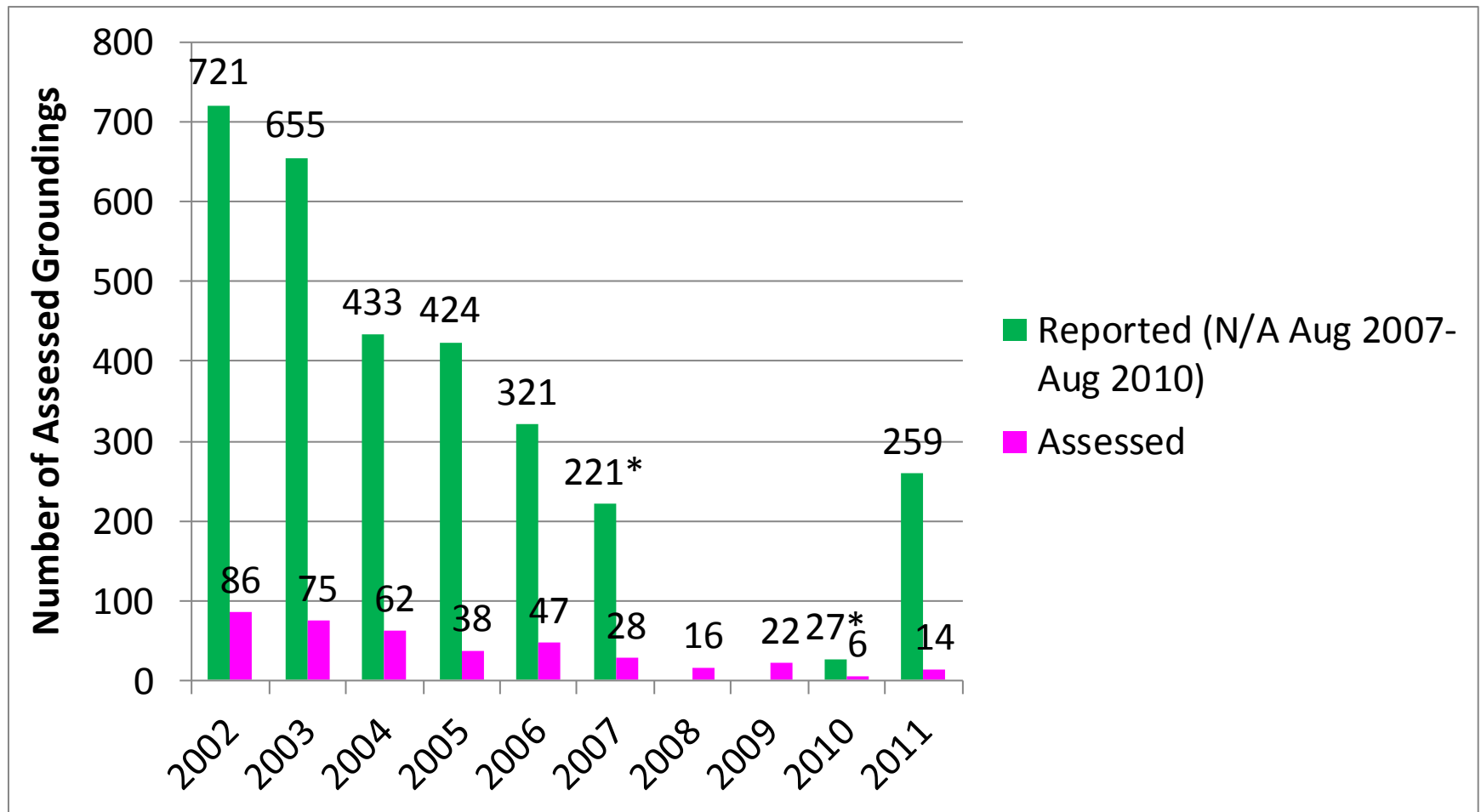
- Develop a management plan and form Advisory Council
- Use of temporal and geographic zoning

Management Plan, Zoning Scheme, and Regulations (1997)

- Sanctuary Preservation Areas (SPAs)
- Ecological Reserves
- Special-use Areas (Research Only)
- **Wildlife Management Areas (WMAs)**
- Existing Management Areas

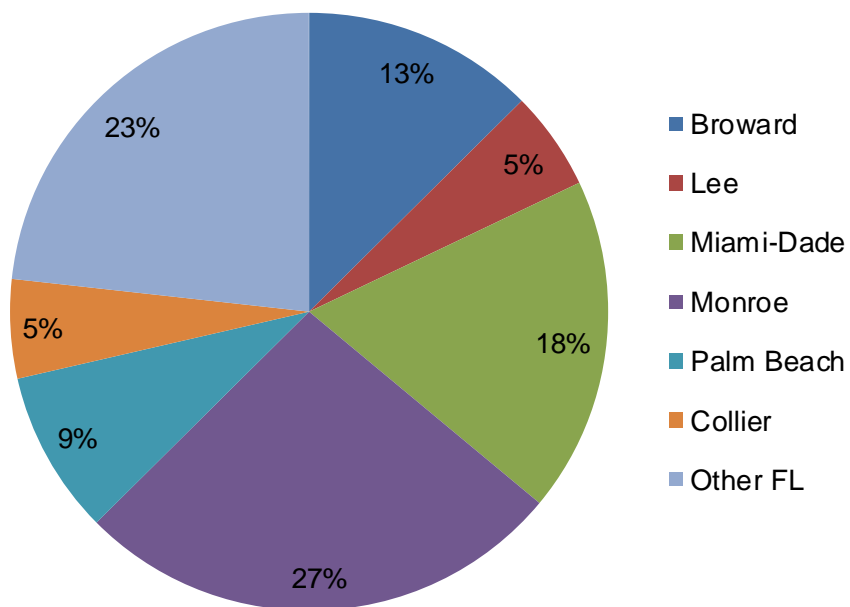


Average of 300-400 Reported Groundings Annually in FKNMS

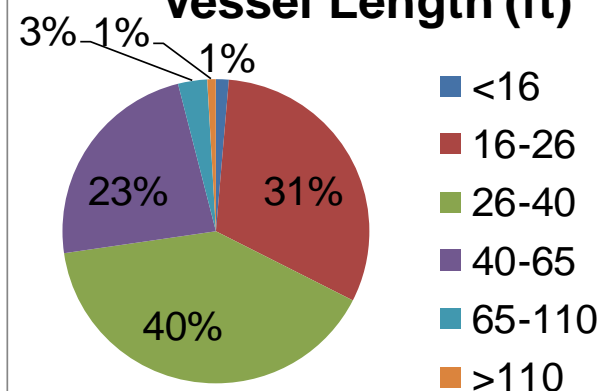


Who Runs Aground?

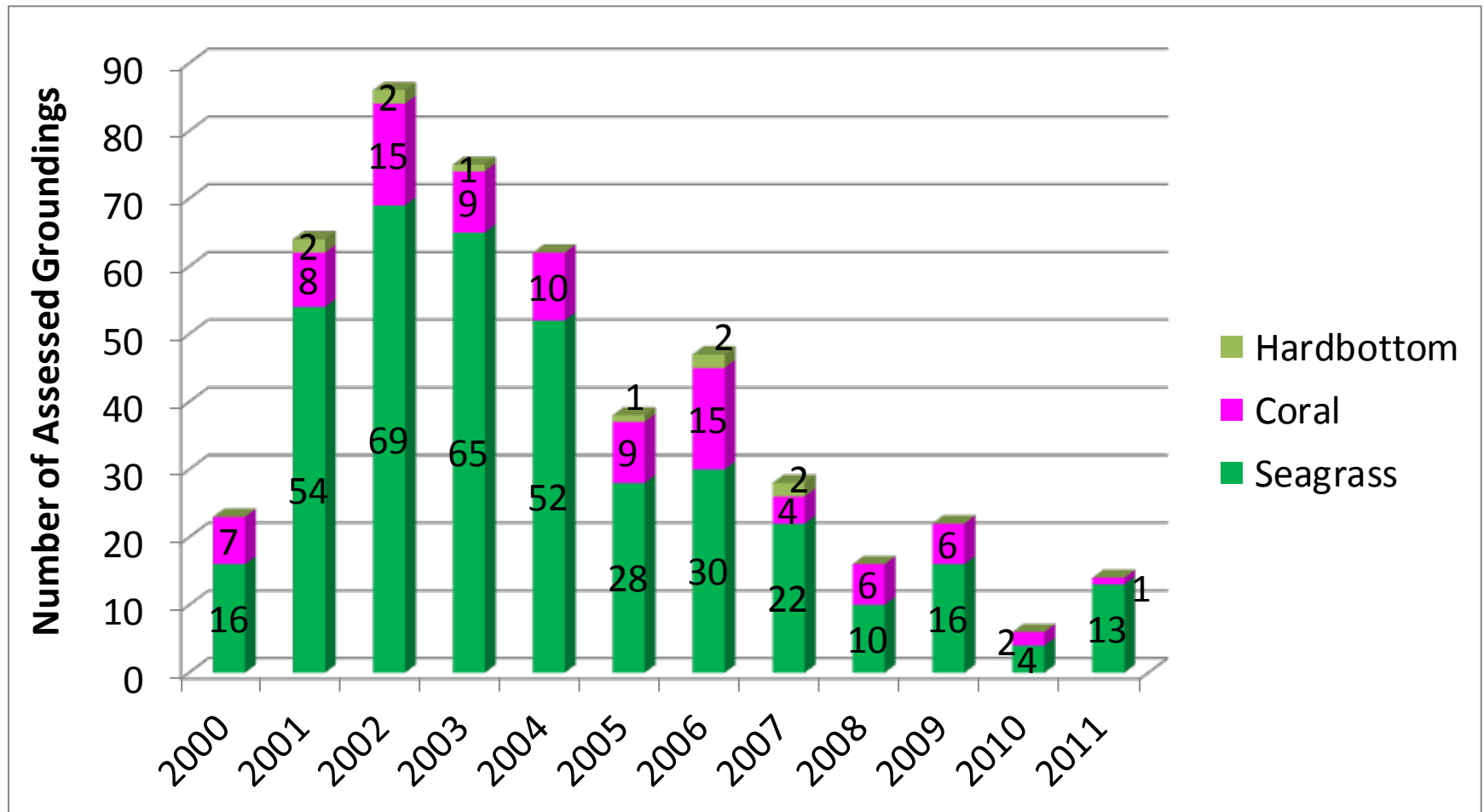
County



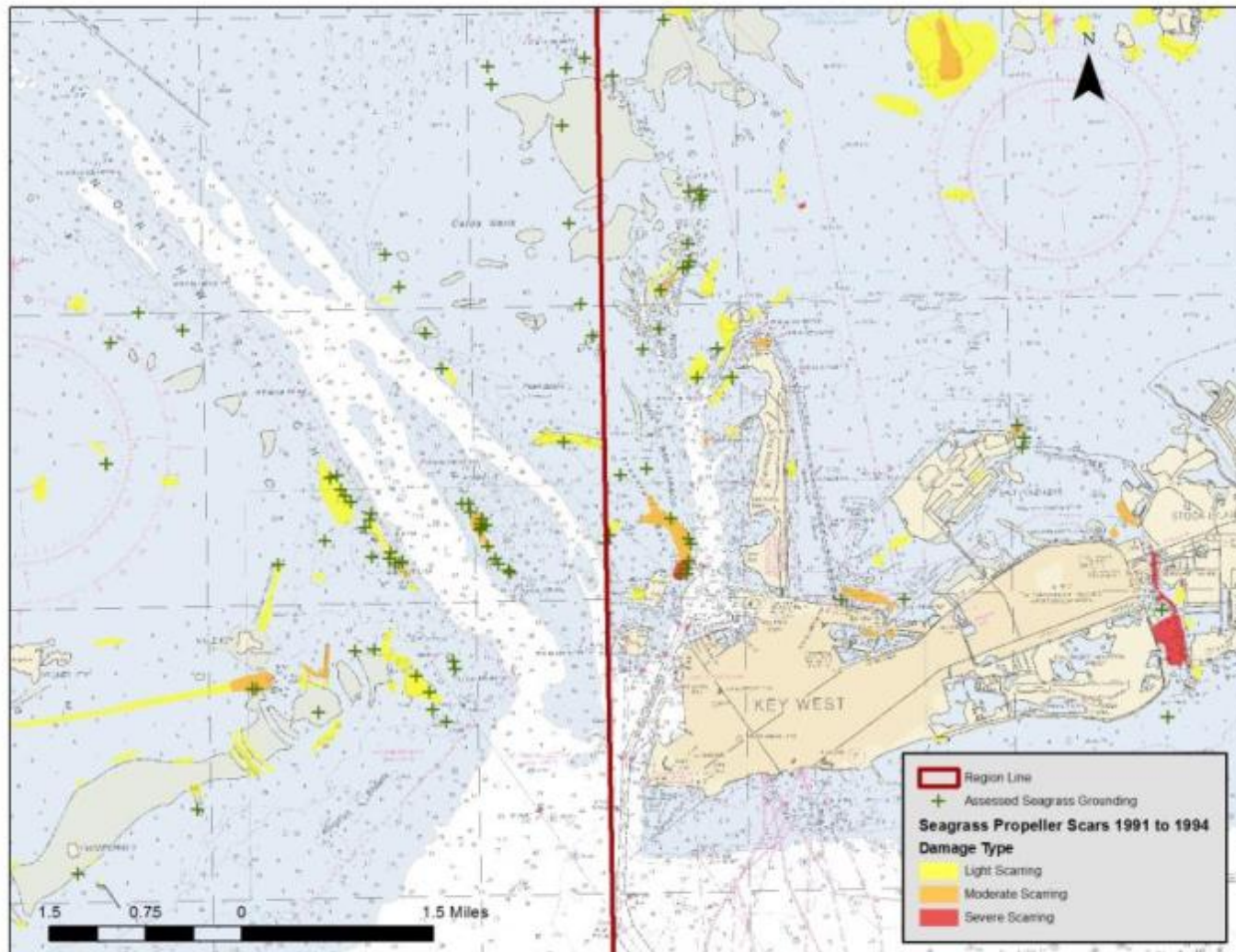
Vessel Length (ft)



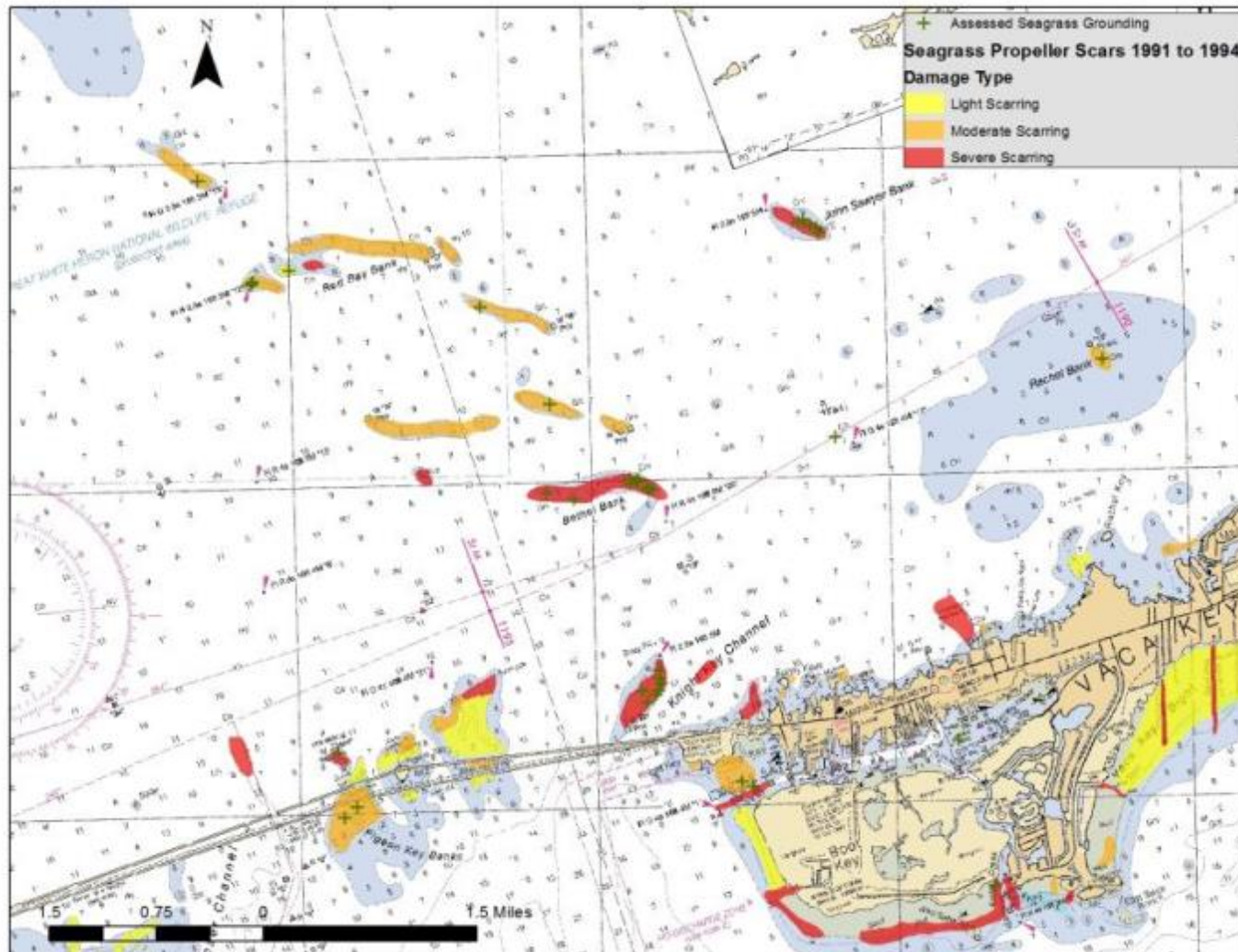
Where do they run aground?



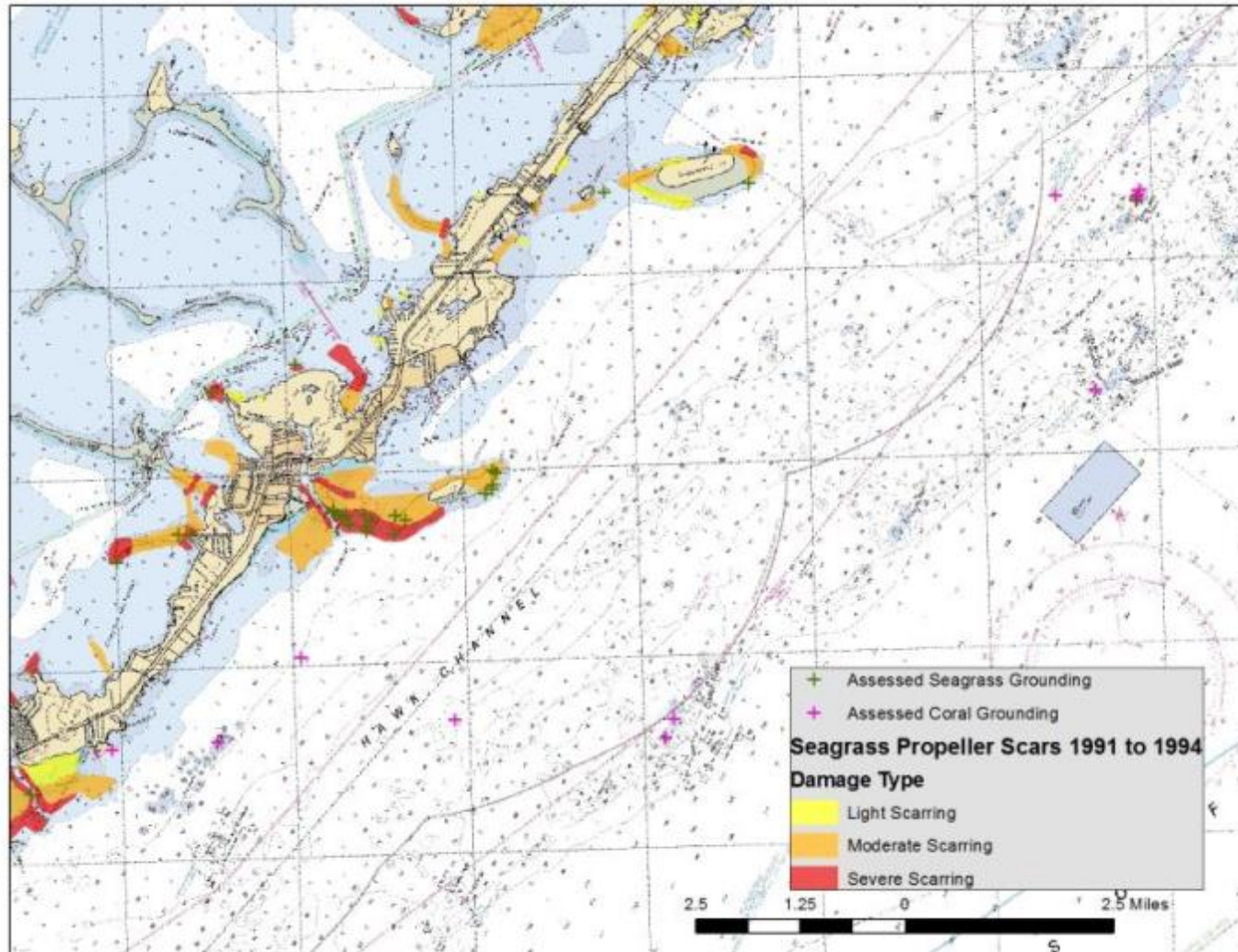
Locations of groundings and scarring



Locations of groundings and scarring



Locations of groundings and scarring

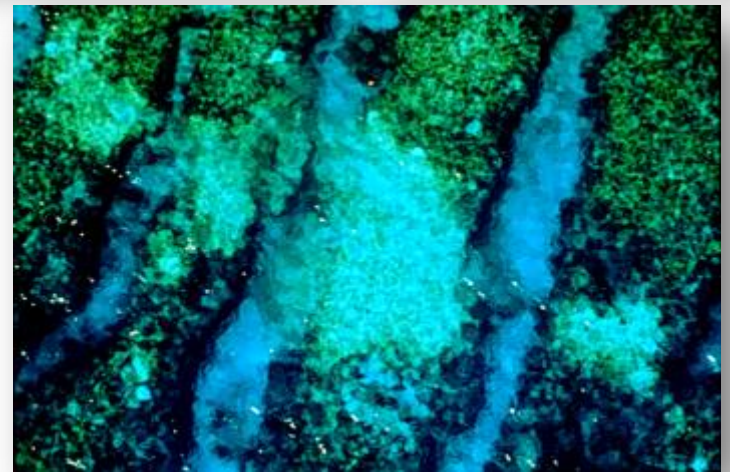
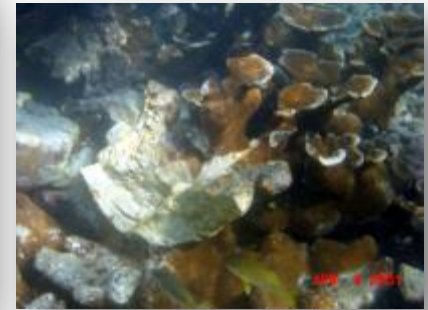


Common Injury Types

Seagrass



Coral



Seagrass Injury Recovery (Turtle Grass)



Seagrass recovery without restoration:

Propscars: 11-17 years for a 1 meter wide scar

Blowholes: Decades or never depending on site dynamics

Berms: Similar to propscars but also depends on the sediment type/depth

With Restoration, Recovery Time can potentially be cut in half



Seagrass Restoration Efforts

- Fill blowhole to level the seafloor
- Transplant seagrass to aid recovery
- Install bird roosting stakes or fertilizer spikes to fertilize the area

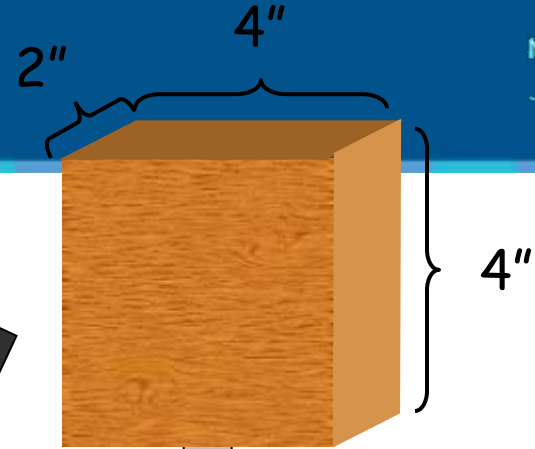


Bird Stakes

The Power of Poop

Mean High Water

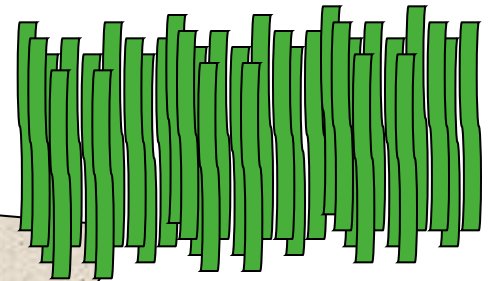
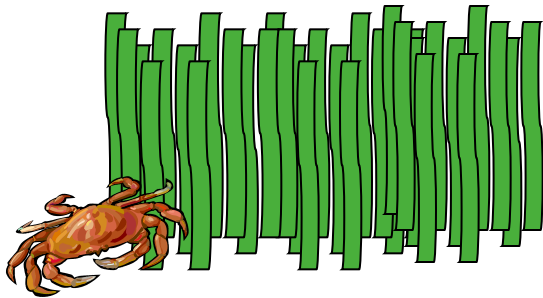
10"



$\frac{1}{2}$ "
PVC

<5'

Filled Blowhole



Restoration Success

- Sites that have been filled to grade and remained to grade have been successful for vegetative growth
- ~30% Average planting unit survivability over all sites



Cost of Conducting Restoration

Example Site

- Marathon, FL bayside
- Blowhole, 4 Propscars, 1 Berm = 95 sq meters, Volume of 13 cubic meters
- 74 Birdstakes, 83 Planting Units, 13 cubic meters of fill (9.83 cubic meters clean fill and 138 sediment tubes equivalent to 3.44 cubic meters of fill)

Restoration Cost = \$31,650

2016 dollars: Does not include monitoring, oversight or assessment and litigation costs



The National Marine Sanctuaries Act Title 16, Chapter 32, United States Code



Sections 307 and 312 of the National Marine Sanctuaries Act, give the Sanctuaries the authority to assess fines (civil penalties) and recover the cost of response, assessment and restoration (damages) from the individuals (responsible parties) who injure sanctuary resources.



Management Options

- Education
- Marine Zoning (WMAs)
- Channel Marking (ATONs)
- Enforcement



Current Wildlife Management Areas



Minimize disturbance to especially sensitive or endangered wildlife and their habitats.

- bird nesting, resting, or feeding areas
- turtle-nesting beaches
- sensitive shallow habitats

Access restrictions

- no-access buffers
- no-motor zones
- idle-speed only/no-wake zones
- closed zones
- Some restrictions may apply to time periods, others to areas.

27 total Wildlife Management Areas

- 20 located within National Wildlife Refuge areas co-managed with the USFWS
- 7 outside of USFWS areas



Idle Speed Only/No Wake

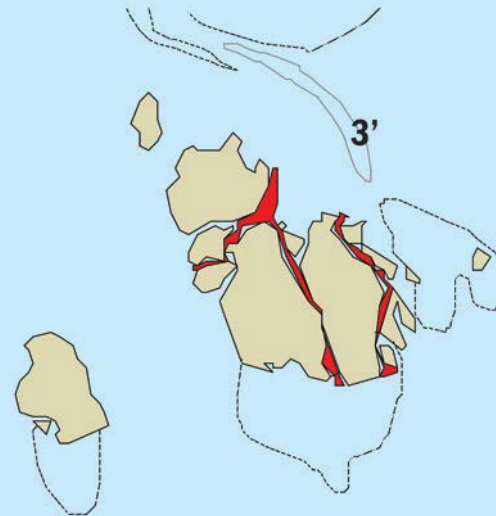


Operating a vessel at a speed greater than idle speed only/no wake is prohibited.

- Bay Keys
- Cayo Agua Keys
- East Content Keys
- Eastern Lake Surprise
- Lower Harbor Keys
- Marquesas Keys
- Mud Keys
- Snipe Keys
- West Content Keys

Cayo Agua Keys

Wildlife Management Area



Idle-speed only/no wake zones are created in each of the navigable tidal creeks.

No-Motor Zone



Using internal combustion motors or engines for any purposes is prohibited. A vessel with an internal combustion motor or engine may access a “no-motor” zone only through the use of a push pole, paddle, sail, electric motor or similar means of propulsion.

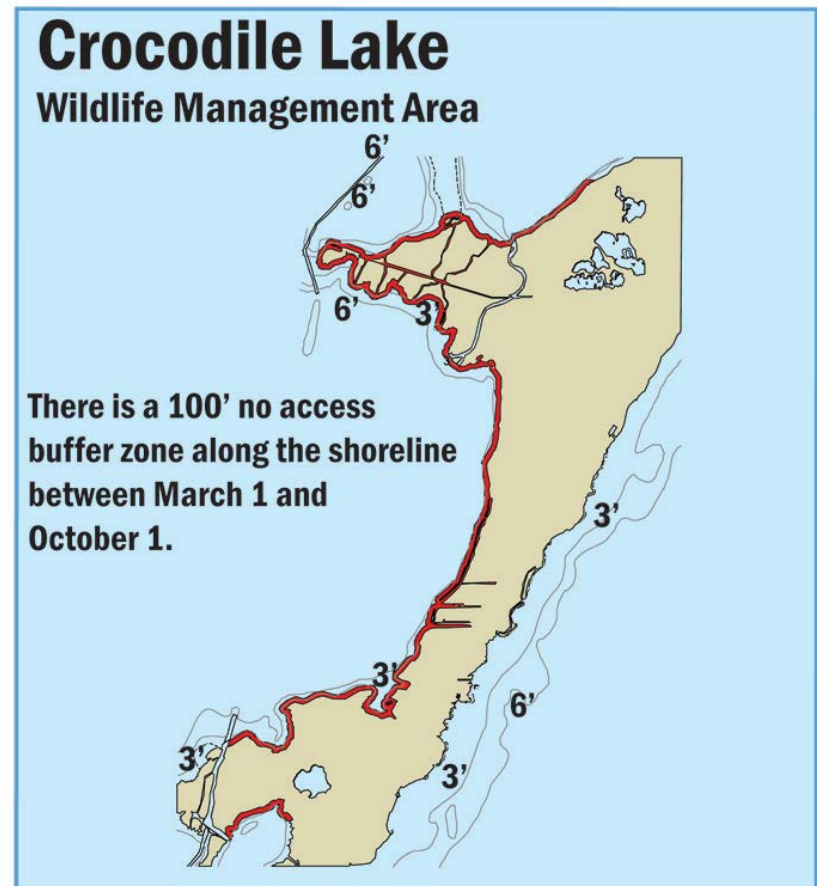
- Bay Keys
- Big Mullet Key
- Cotton Key
- Cottrell Key
- Dove Key
- Marquesas Keys
- Rodriguez Key
- Snake Creek
- Snipe Keys
- Tavernier Key



No Access Buffer

Entering the area by vessel is prohibited.

- Crocodile Lake (3/1-10/1)
- East Harbor Key
- Horseshoe Key
- Little Crane Key
- Little Mullet Key
- Marquesas Keys
- Marvin Key
- Pelican Shoal (4/1-8/31)
- Upper Harbor Key
- West Content Keys



Closed

Entering or using the area is prohibited.

- Boca Grande Key
- Dove Key
- Horseshoe Key
- Mud Key
- Sawyer Keys
- Woman Key



Photo: Great White Heron National Wildlife Refuge

Resource Management Challenges



- Increasing use
- New technology
- Resource impacts
- Degradation of seagrass habitat
- Water quality



Resource Management Responses



- Implementation of Water Quality Protection Program
- Marine zoning has been used to protect sensitive habitats
- Restoration of vessel grounding sites
- Establishment of permitting and enforcement programs
- Designations of critical habitat
- Zoning and regulatory review process



Shallow Water Wildlife and Habitat Protection Working Group Objectives



- Evaluate existing Wildlife Management Areas for effectiveness
- Develop recommendations considering existing regulations and zoning to further protect seagrass and critical shallow water habitats in FKNMS.
- Address concentrated uses that diminish or destroy habitats
- Identify where high impact activities are known to occur or should be allowed
- Identify seagrass and shallow water habitat areas for exclusion to allow for research control areas
- Evaluate mangrove habitat protection for bird nesting.
- Reduce damage to natural resources from improper vessel salvage methods.



Questions?



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