

# Protecting our Marine Resources at Virgin Islands National Park and Virgin Islands Coral Reef National Monument

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Resource Management  
Virgin Islands National Park/  
Coral Reef National Monument

CRTF, October 2006



# St. John: A Small Tropical Island





**ST. JOHN**

**50 km<sup>2</sup>**

**3500 residents**

**1 million visitors/ year**



HELP!!!!

WE ARE BEING  
"LOVED" (and  
developed) TO  
DEATH.

# Coral Reefs – Habitat for fish and invertebrates



# Coral Reefs – visitor attraction



# Impact to reefs – small anchors



# Cruise ship anchors

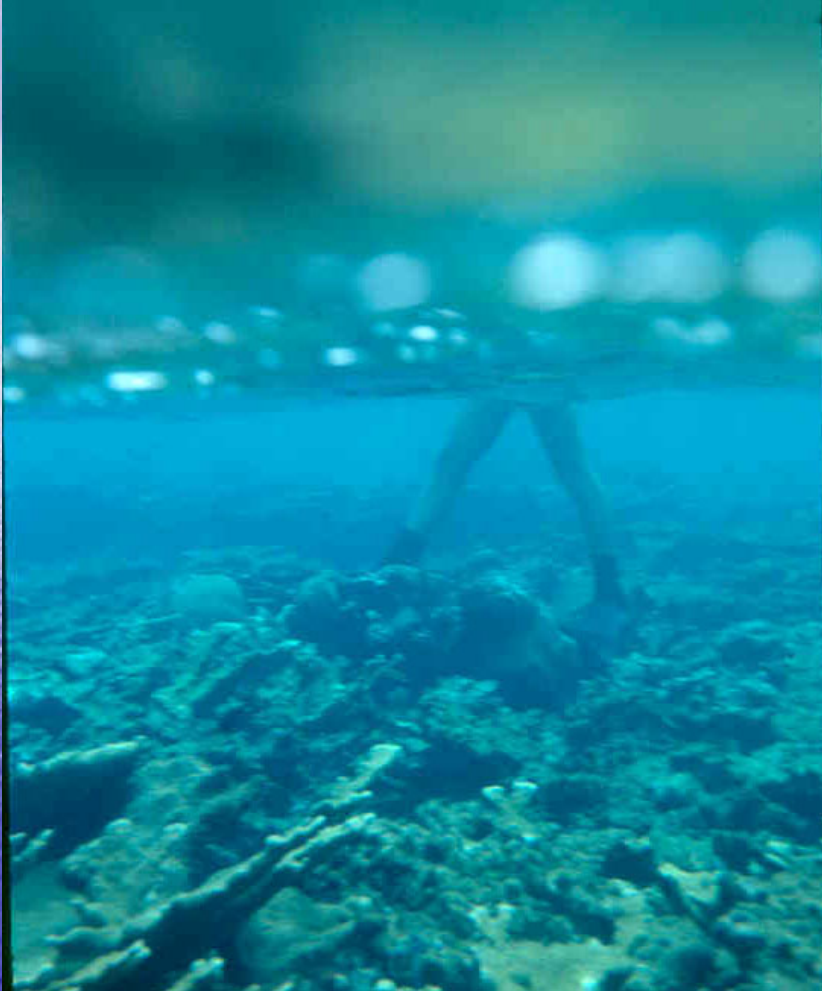




# Boat groundings



# Careless actions



=



# Seagrass Beds



# Seagrasses – Turtle habitat



# Seagrasses – Other's habitat



Stingray



Conch



Urchin

# Seagrass anchoring





Impacts to  
seagrass beds  
– anchor  
“blowouts”

# Mangroves





# Mangroves – Nursery Value



# Hurricane Refuge



# Impacts to mangroves

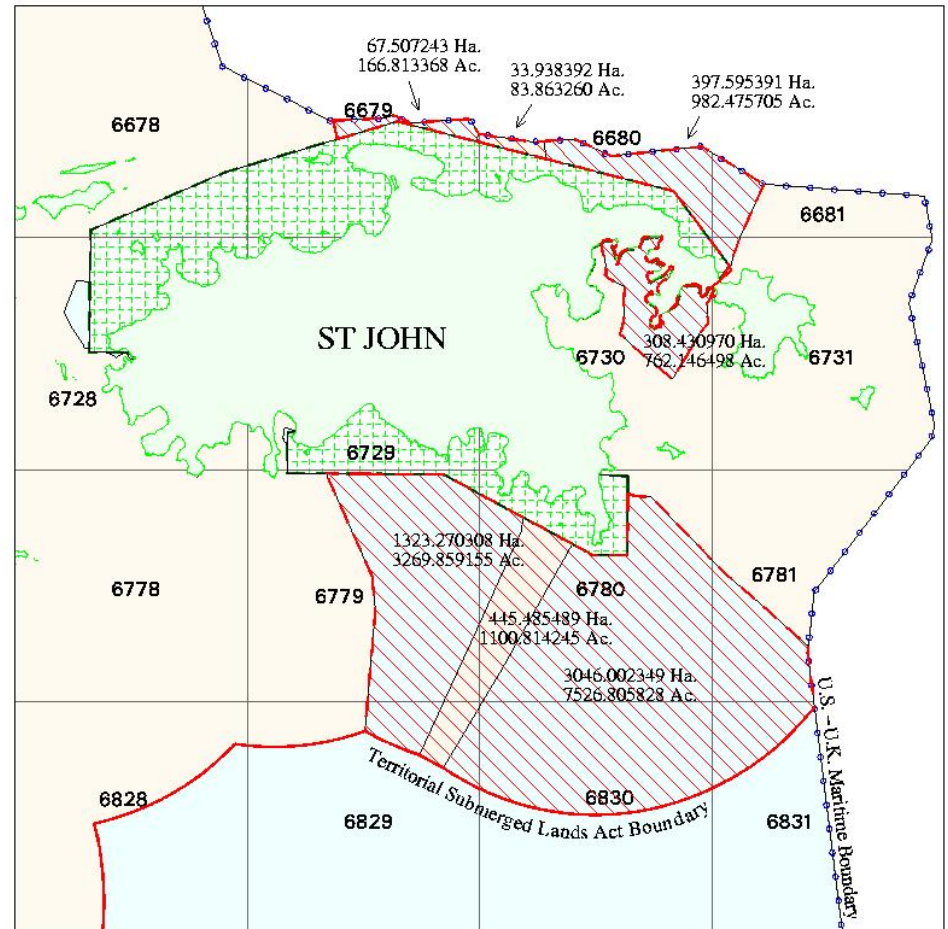


# V.I. National Park and Coral Reef National Monument

VINP – 5,650 acres SL

VICRNM – 12,708 acres SL

## Virgin Islands Coral Reef National Monument



V.I. Territorial Submerged Lands  
 Federal Submerged Lands

Virgin Islands National Park  
 Coral Reef National Monument



Total Area 5,622.230142 Hectares 13,892.778059 Acres  
 Total Fed Area 5,142.806261 Hectares 12,708.100554 Acres

# On the water!!



THE PARK FINALLY MAKES THE DECISION TO INSTALL MOORING BUOYS IN ONE OF ITS BAYS.

# Types of Visitors

## (Coral/Seagrass/Mangrove Impacts)

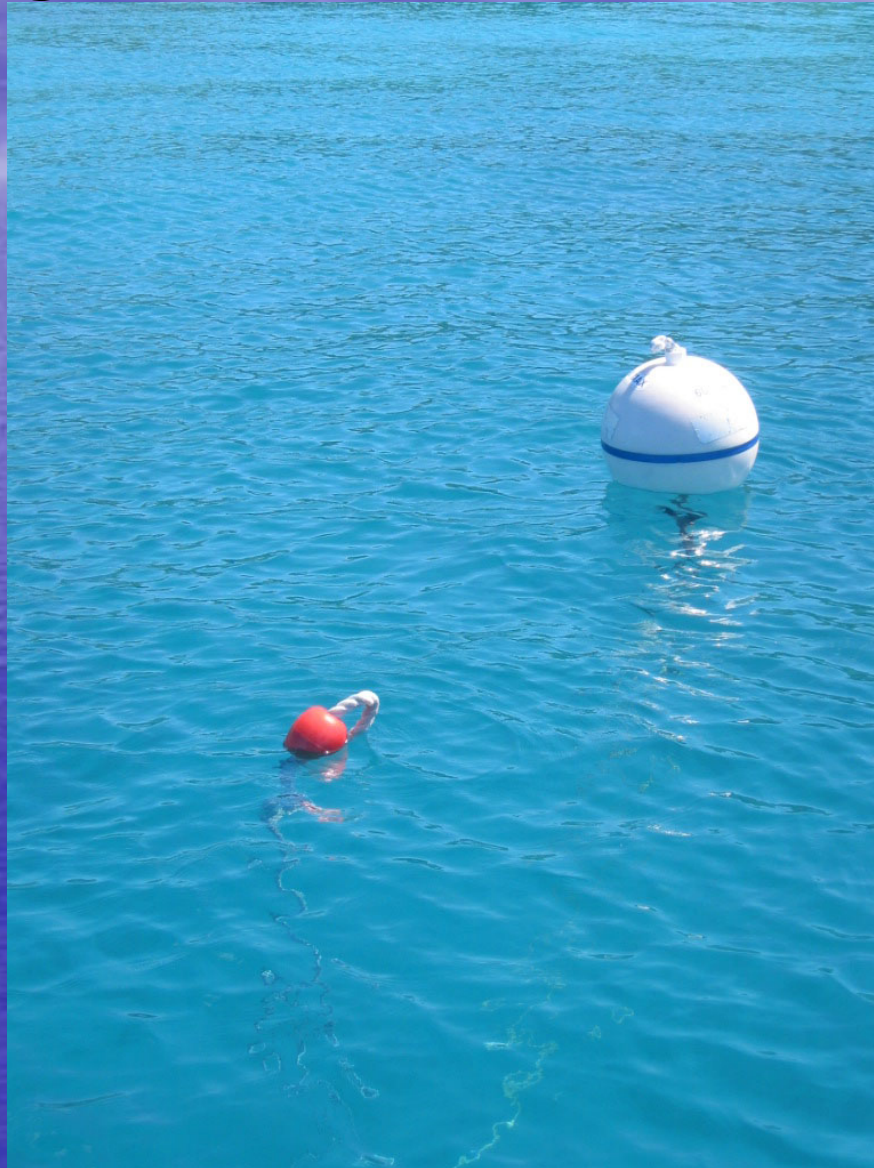
- Boaters (recreational - power/sail)
- Boaters (storm refuge)
- Divers/snorkelers
- Fishermen

How do we mitigate impacts?

# Coral Reef/Seagrass/Mangrove Protection (VINP/VICR)

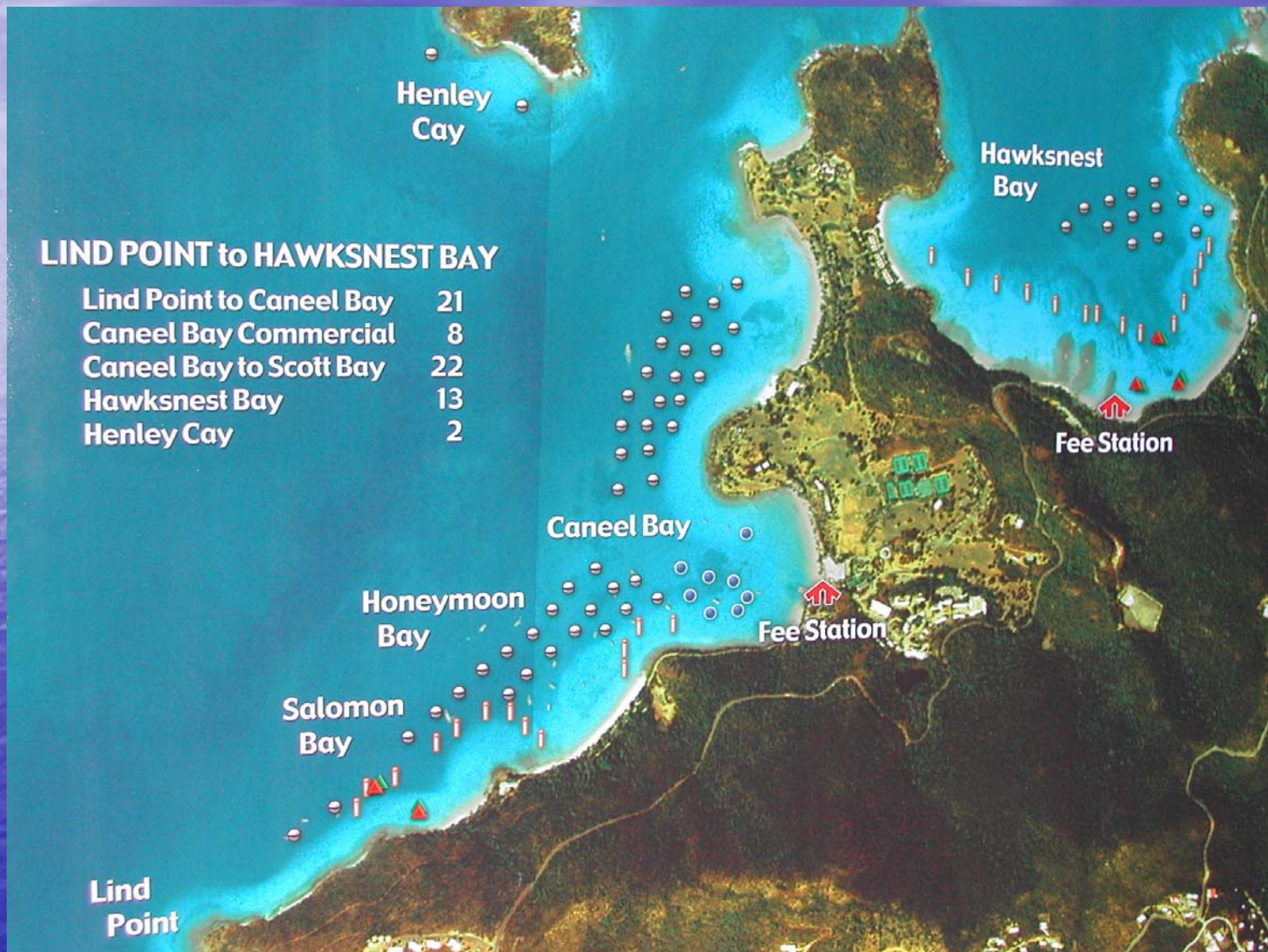
- Mooring Program
  - Overnight/day use – 223 (11 VICR)
  - Diving – 8 (2 VICR)
  - Fishing – 6 (VICR)
- Regulatory Buoys – approx. 150
- Special Protection Buoys
  - Boundary - 3
  - Johnson's Reef – 5
- Storm Refuge – Approx. 100 (45 present)

# Moorings – in lieu of an anchor

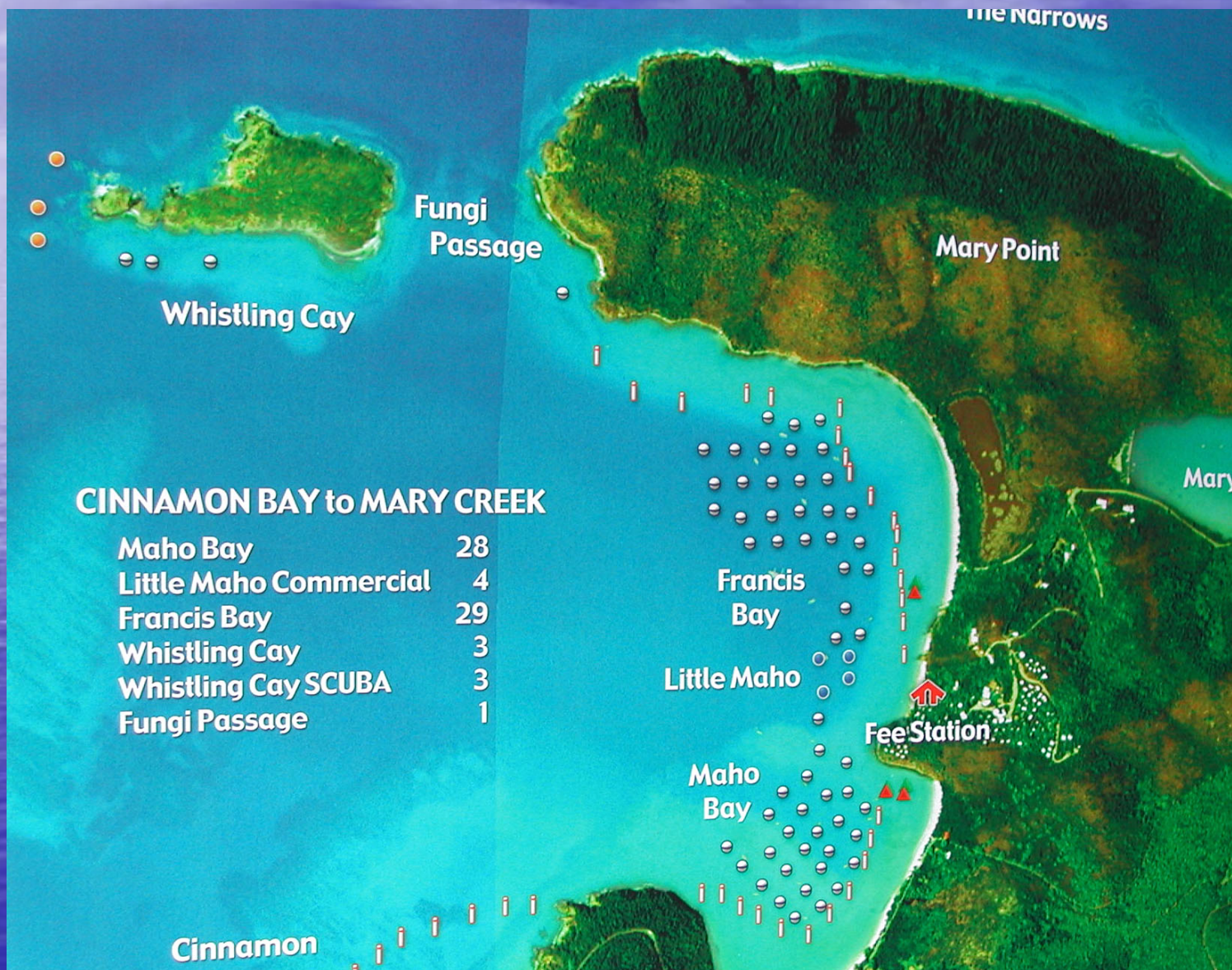




# Moorings/Regulatory Buoys



# Moorings/Regulatory/Dive Moorings

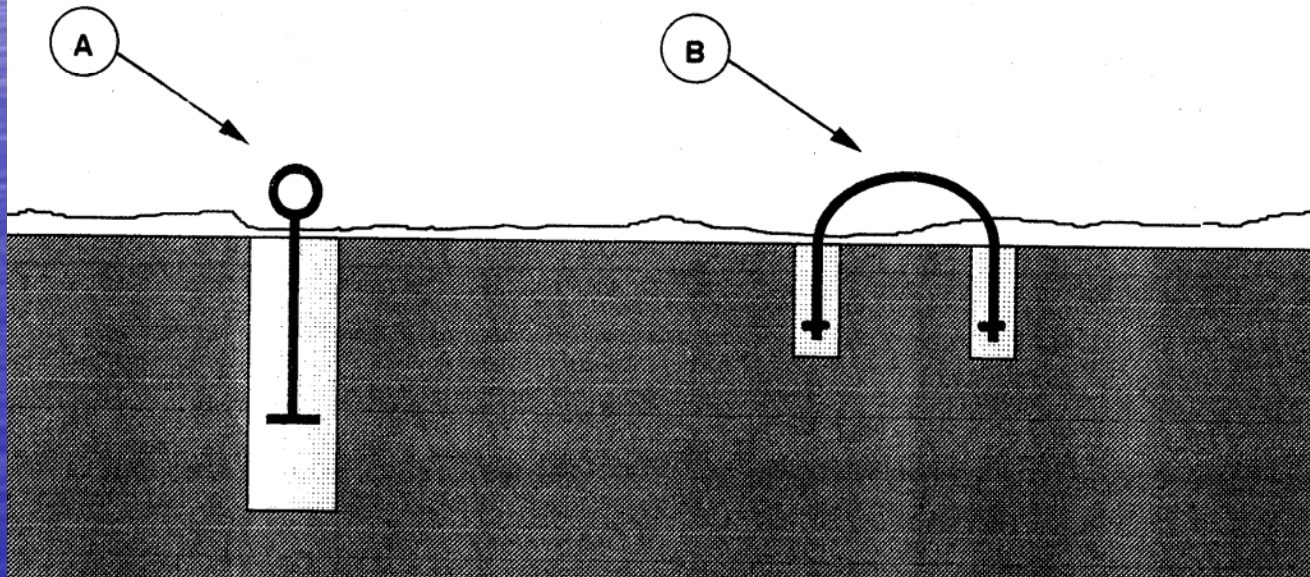


# Moorings limited to 60' boats

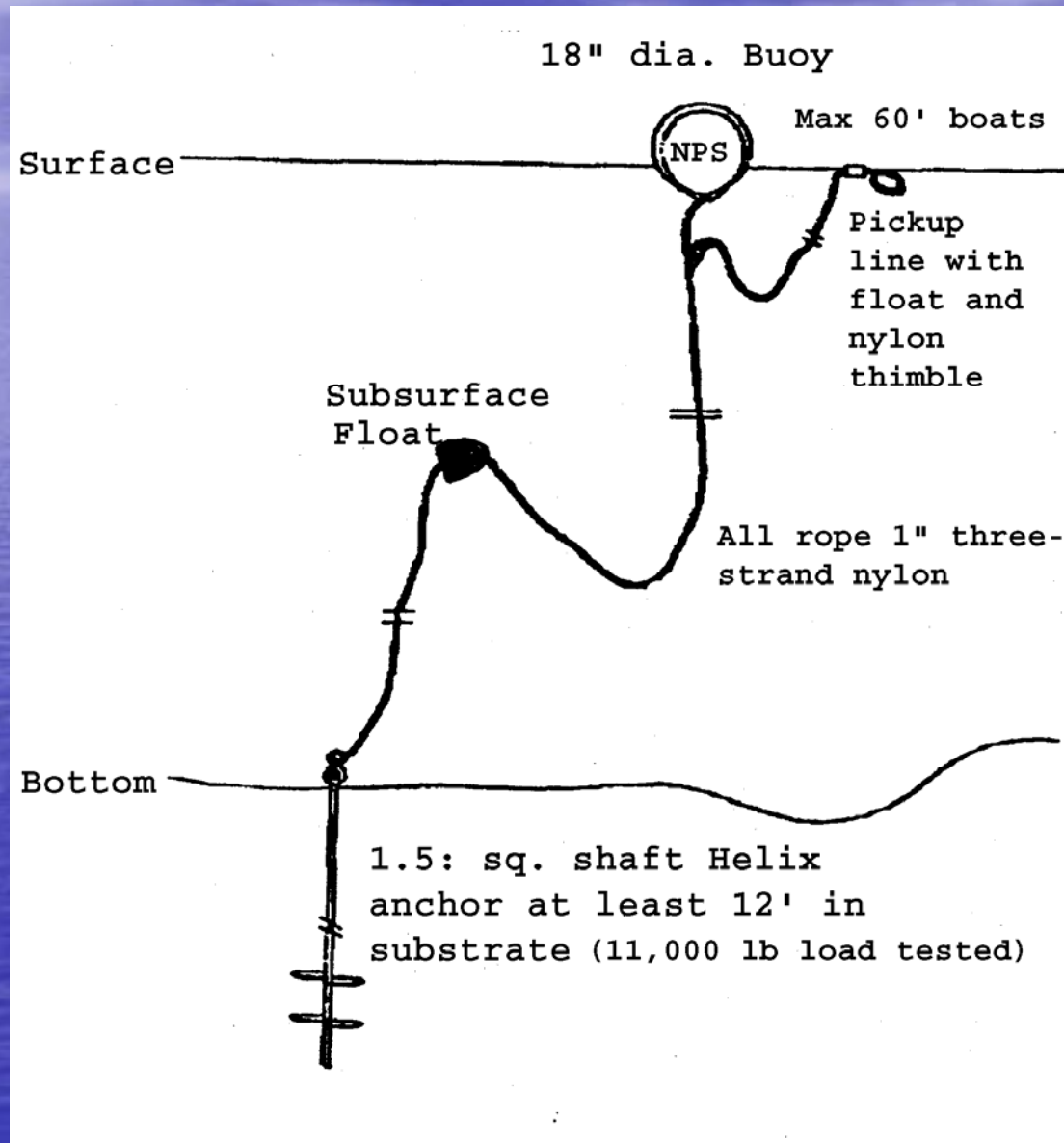


# Hard substrate attachment

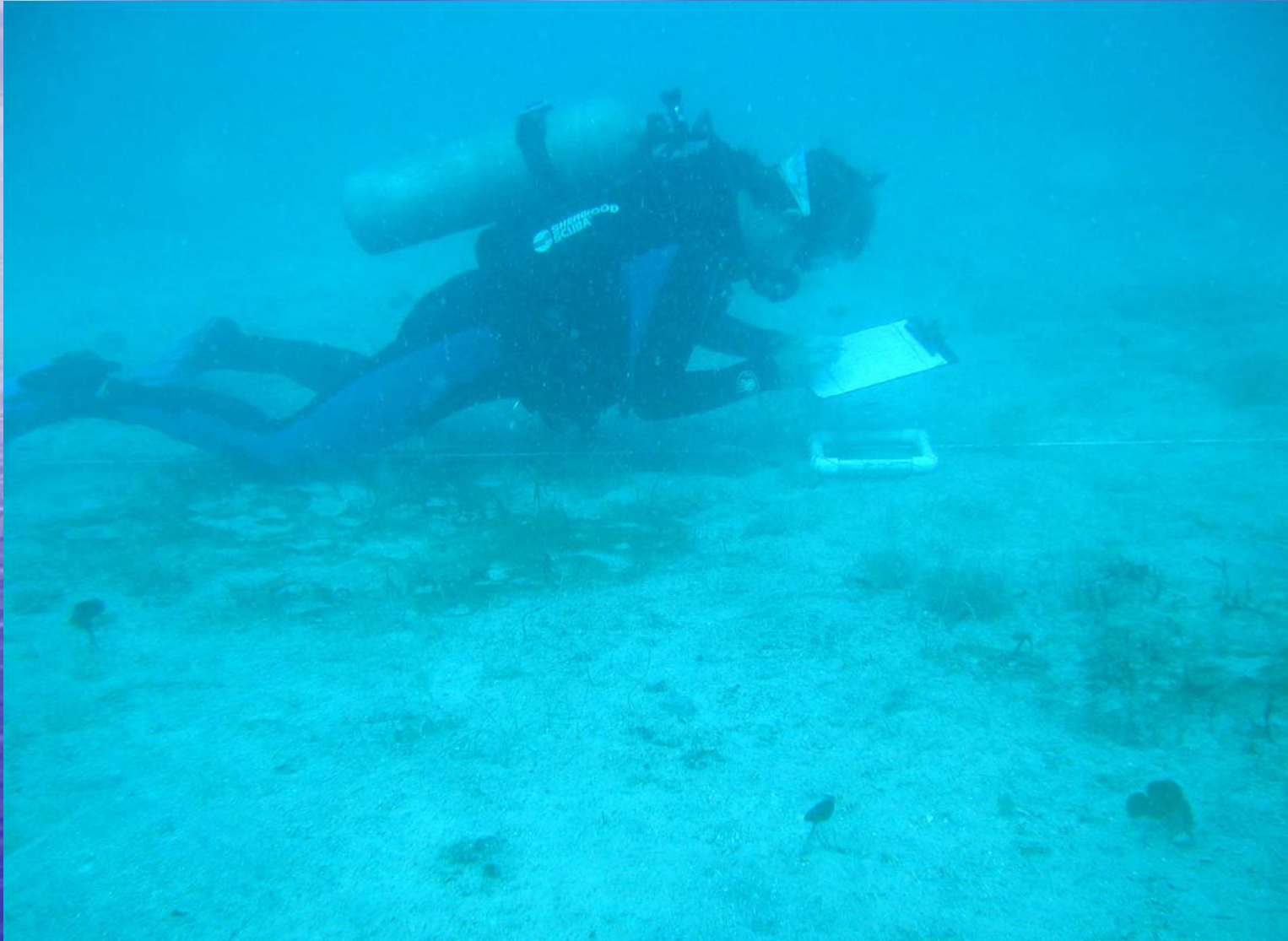
- (A) HALAS SYSTEM SINGLE PIN INTO DRILLED CORE WITH PORTLAND HYDRAULIC CEMENT
- (B) U BOLT SECURED WITH EITHER THE HALAS SYSTEM OR DRILLED AND GLUED WITH TWO PART SPECIAL UNDERWATER EPOXY.



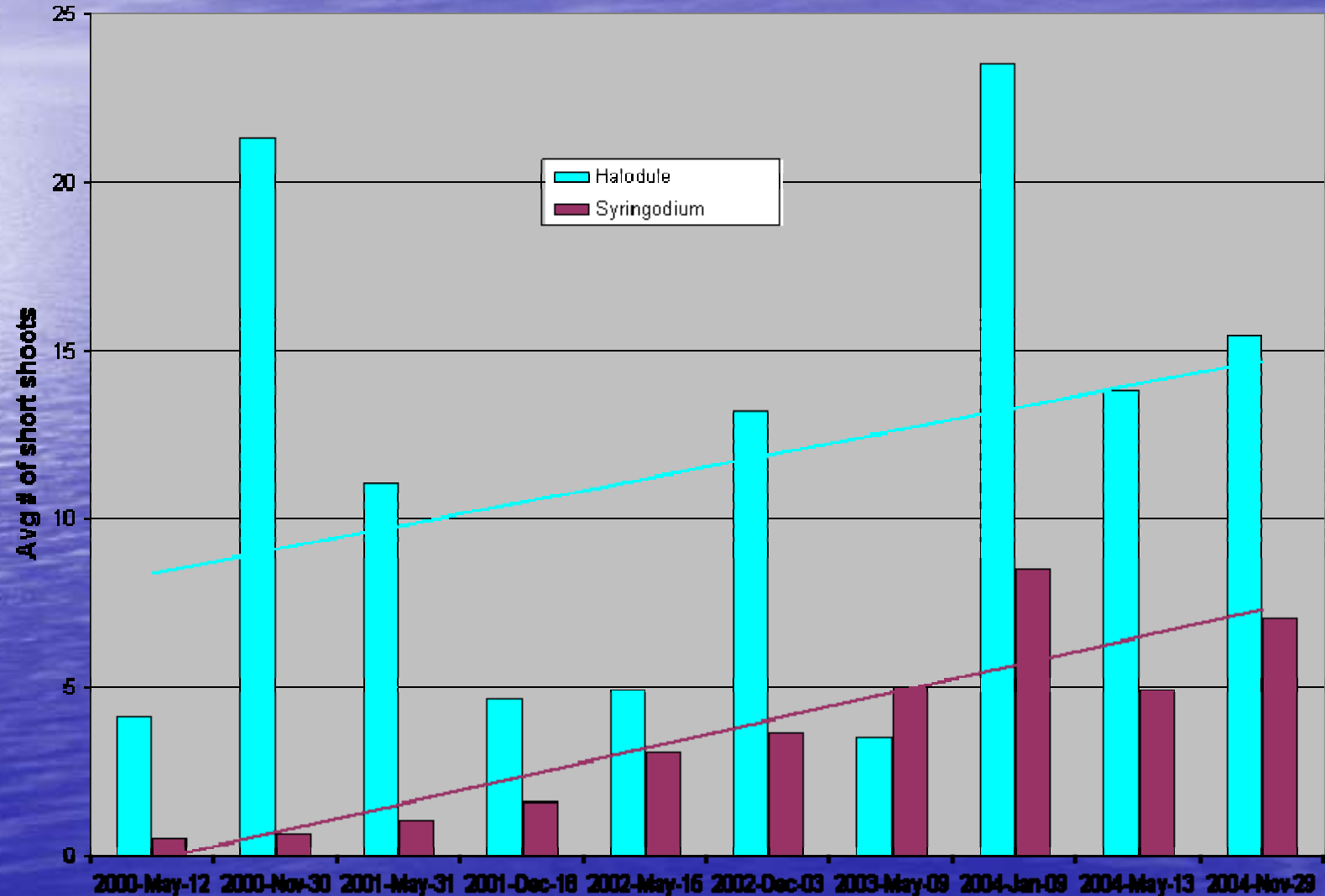
# Mooring installation in sand



# Seagrass Recovery



# Maho Bay Mooring #129 (2000-04). Avg. # short shoots/20 cm<sup>2</sup> quadrat (N = 40)



# Regulatory Buoys - channels





# Regulatory Buoys – no boats



# Boundary/Special Purpose



# Dinghy Tether



# Hurricane Hole – mangrove protection



# Traditional Storm Refuge – Tied to the Mangroves



# Storm Refuge System in Place



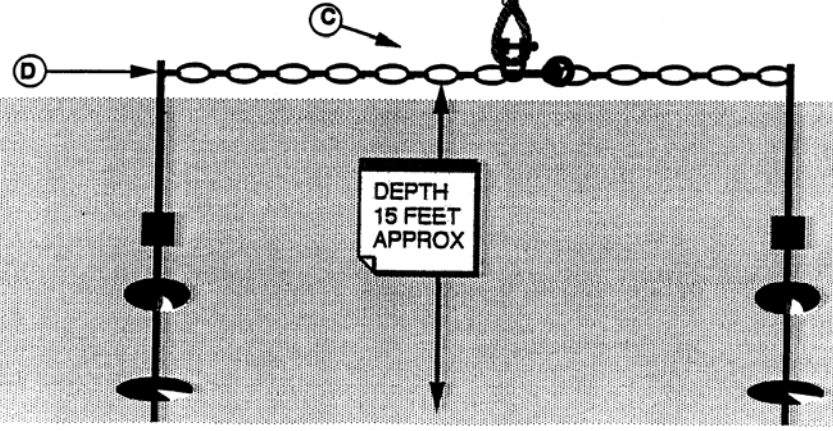
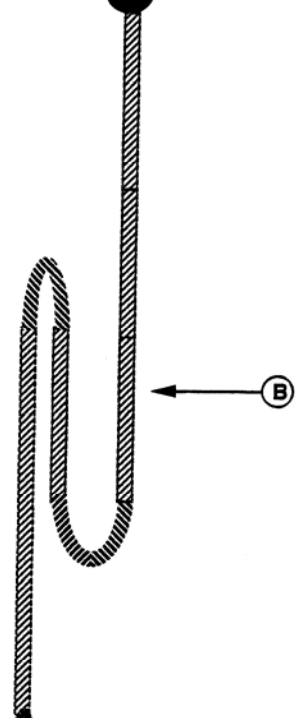


- KEY - DRAWING NOT TO SCALE**
- (A) MARKER BUOY
  - (B) 1" DIAMETER NYLON LINE
  - (C) CONNECTING GROUND CHAIN ATTACHMENT POINT
  - (D) HELICAL EMBEDMENT ANCHOR HYDRAULICALLY INSTALLED

Project: Hurricane Moorings Date: 01/14/02  
Location: Virgin Islands Coral Reef National Monument  
Island: St. John  
Applicant: National Park Service  
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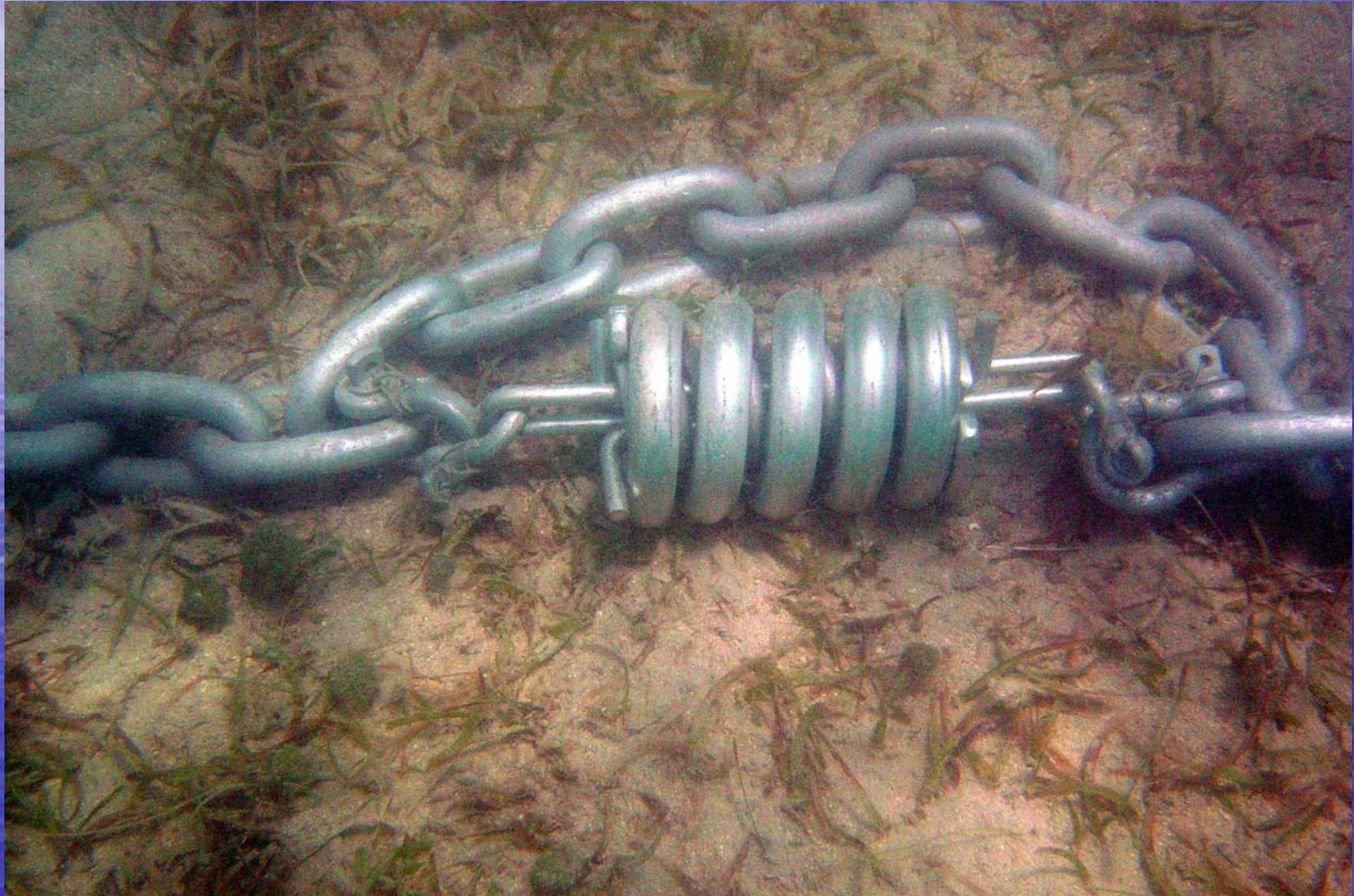
# Hurricane Mooring Schematic

# Storm Mooring Details

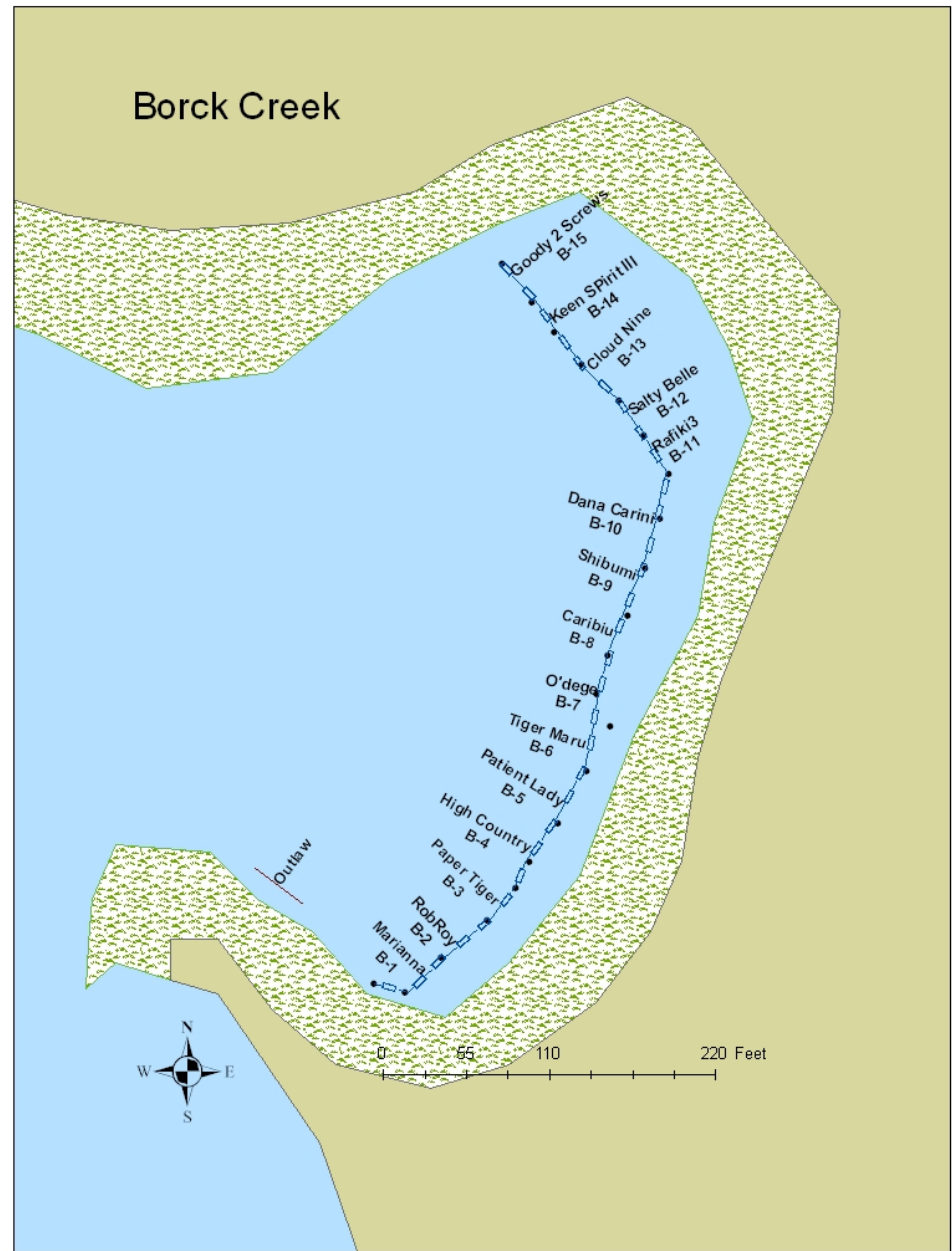




# Storm Mooring Installed



# Mangrove Protection: Hurricane Mooring System (2005)



# Day Use Moorings



At VIIS/VICR our goal is for our visitors to enjoy themselves while doing no damage to our resources.

The use of moorings and regulatory buoys to protect marine resources is proven to be effective at enabling this.

Thank you

