

# WALTON COUNTY NRDA ARTIFICIAL REEF PROGRAM

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Preservation Technology



# PROJECT LOCATION AND ENVIRONMENTAL SETTING



- 1,037 sq. mi.
- Pop. ~53,000 (~ 52 persons/sq. mi.)
- ~26 miles of Gulf of Mexico shoreline
- County and State parks along the Gulf
- Tourism ~ \$1 billion/year



# PROJECT HISTORY AND DEVELOPMENT

- 1980 - Chapter 379.249 F.S. created the **Florida Artificial Reef Program**, establishing financial and technical assistance to coastal local governments, universities, and non-profits for reef siting and monitoring. FWC administers program through Ch. 68E-9 F.A.C.



## Objectives of Artificial Reef Program include:

- Enhance recreational fishing and diving opportunities
- Provide socio-economic benefit to local coastal communities
- Increase reef fish habitat
- Reduce user conflicts
- Facilitate reef research
- Do no harm to fisheries, EFH or human health



# PROJECT LOCATION AND ENVIRONMENTAL SETTING

## Natural Hardbottom

- Limited “reef” habitat in northern Gulf
- Few areas with limestone outcropping
- Majority of substrate off of Walton is sand/shell
- Limited data, but some hardbottom in ~90 ft depth, 4.5 miles offshore of Grayton Beach



## Artificial Reefs

- 1995 – Walton #1 (concrete pyramids)
- 1997 – Eastern Lake Reef (concrete culverts)
- 1999 – Frangista Barge (steel barge)
- 2001 – Frangista Beach Culverts (concrete culverts)



# PROJECT HISTORY AND DEVELOPMENT

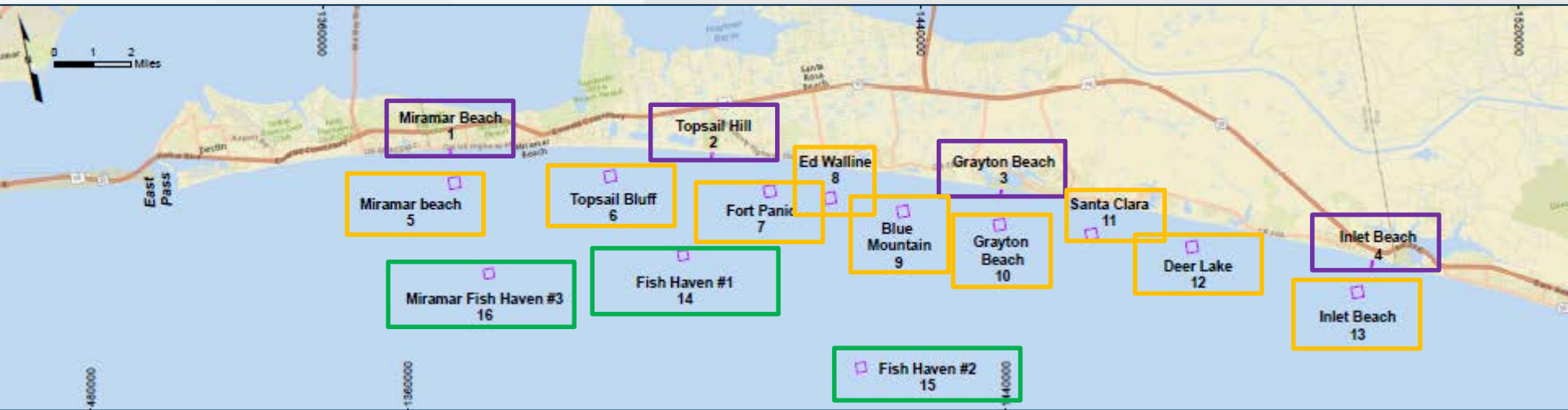
- April 20, 2010 – BP Deepwater Horizon Oil Spill
- April 2011 - NRDA Trustees and BP entered into the *Framework Agreement for Early Restoration Addressing Injuries Resulting from the Deepwater Horizon Oil Spill*.
- 2013 – **NRDA Early Restoration Phase III – Northwest Florida Artificial Reef and Restoration Project:**
  - 5 NW Florida Counties
  - ~ 3,000 artificial reefs
  - 48 permitted areas
  - Different depths
  - Different module designs
  - Cost ~ \$11.5 M



# WALTON COUNTY NRDA ARTIFICIAL REEF PROJECT

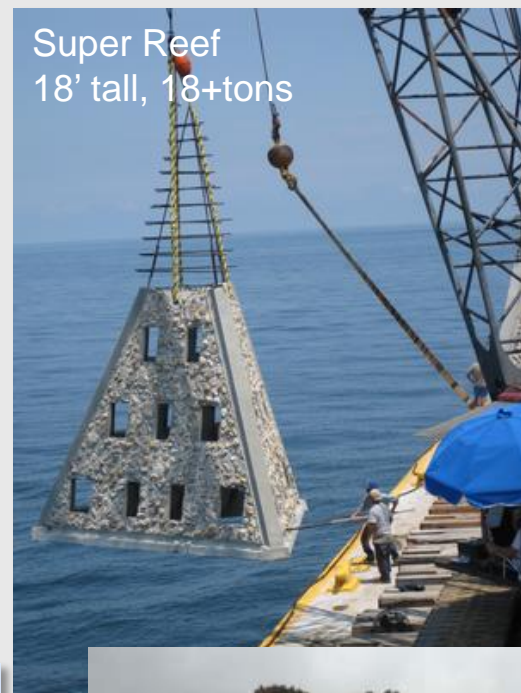
## Proposed Construction of Offshore and Nearshore Artificial Reefs

- 622 reef modules
- 16 permitted reef sites
  - 4 inshore snorkel reefs (12-20 ft)
  - 9 nearshore fish/dive reefs (55-62 ft)
  - 3 offshore fish/dive reefs (68-90 ft)



# WALTON COUNTY NRDA ARTIFICIAL REEF PROJECT

## Reef Modules



The Reefmaker  
/ Walter Marine

# SOUTH WALTON ARTIFICIAL REEF ASSOCIATION (SWARA), INC.

## South Walton Artificial Reef Association (SWARA), Inc.

- Formed in 2012 in response to concerns over impacts from Deep Horizon Oil Spill
- Grass-roots, non-profit 501(c)3 organization of marine enthusiasts and artificial reef advocates
- Dedicated to the construction, deployment, and monitoring of Walton County's artificial reefs for the benefit and health of environment and community
- Appointed coordinator for the NRDA artificial reef projects



[www.waltonreefs.org](http://www.waltonreefs.org)





# AGENCY COORDINATION AND PERMITTING

- State (FDEP) and Federal (USACE) permits required for reefs
- FWC funding through Agreement No. 15156
- NMFS consultation for sea turtles and Gulf sturgeon and Critical Habitat

	ACOE Permit	FDEP Permit	Number of Modules to be deployed
Miramar Beach Snorkel Reef	SAJ-2014-00327	66-0324064-001-EG	77
Topsail Hill Snorkel Reef	SAJ-2014-00327	66-0324065-001-EG	78
Grayton Beach Snorkel Reef	SAJ-2014-00327	66-0322891-001-EG	5
Inlet Beach Snorkel Reef	SAJ-2014-00327	66-0324077-001-EG	94
Miramar Beach Fish/Dive Reef	SAJ-2014-00326	66-0324063-001-EG	30
Topsail Bluff Fish/Dive Reef	SAJ-2014-00326	66-0324066-001-EG	30
Fort Panic Fish/Dive Reef	SAJ-2014-00326	66-0324067-001-EG	30
Ed Walline Fish/Dive Reef	SAJ-2014-00326	66-0324068-001-EG	30
Blue Mountain Fish/Dive Reef	SAJ-2014-00326	66-0324071-001-EG	30
Grayton Beach Fish/Dive Reef	SAJ-2014-00326	66-0324072-001-EG	30
Santa Clara Fish/Dive Reef	SAJ-2014-00326	66-0324070-001-EG	30
Deer Lake Fish/Dive Reef	SAJ-2014-00326	66-0324074-001-EG	31
Inlet Beach Fish/Dive Reef	SAJ-2014-00326	66-0324076-001-EG	31
Miramar Reef Site	SAJ-1996-06244	66-0311284-002-EG	31
Fish Haven #1	SAJ-2013-01166	66-0318419-001-EG	32
Fish Haven #2	SAJ-2013-01167	66-0318423-001-EG	32



US Army Corps  
of Engineers®



NOAA  
FISHERIES



# 2015 GRAYTON BEACH SNORKEL REEF DEPLOYMENT

It's official, South Walton has a new artificial reef, and it is in the shape of a sea turtle!

*WaltonOutdoors.com (July 2015)*



# WALTON COUNTY NRDA ARTIFICIAL REEF PROJECT - MONITORING

- Pre-Deployment Inspection (APTIM)
- Mid-Deployment Observations (Walton Co. & SWARA)
- Post-Deployment Surveys (APTIM)



# PRE-DEPLOYMENT INSPECTION

FEBRUARY 2017

**Goal: Verify intended reef locations do not have seagrass, shellfish, hardbottom, corals or historic artifacts present.**

- Review existing data (desktop analysis)



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- February 2017 –pre-deployment survey
  1. Towed DGPS-integrated underwater video



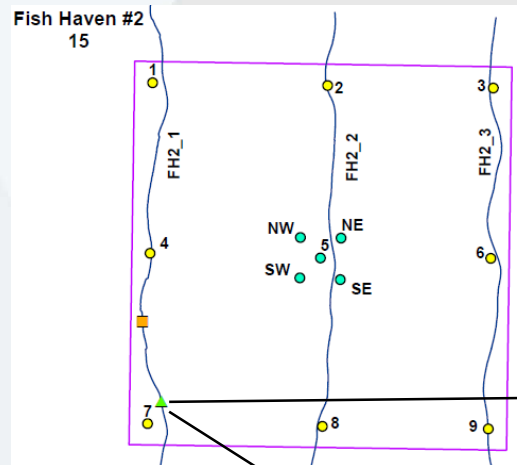
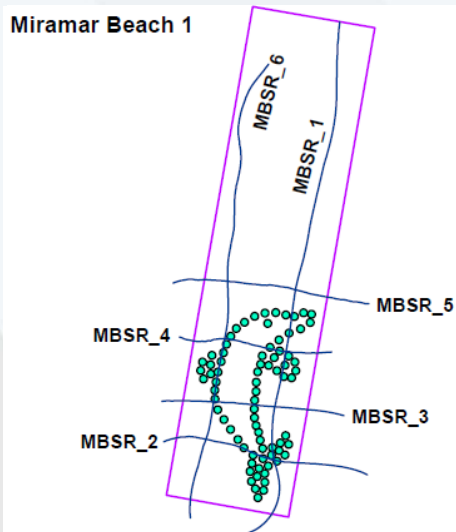
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## FEBRUARY 2017

**Goal: Verify intended reef locations do not have seagrass, shellfish, hardbottom, corals or historic artifacts present.**

- Review existing data (desktop analysis)
- February 2017 –pre-deployment survey

### 1. Towed GPS-integrated underwater video



**Legend:**

- Offshore Additional Reef Locations
- Offshore Planned Reef Locations
- ~ Towed Video Survey Lines
- Start of Hardbottom
- ▲ High Relief Hardbottom
- Permit Area Boundary



# PRE-DEPLOYMENT INSPECTION

FEBRUARY 2017

**Goal: Verify intended reef locations do not have seagrass, shellfish, hardbottom, corals or historic artifacts present.**

- Review existing data (desktop analysis)
- February 2017- pre-deployment survey
  1. Towed GPS-integrated underwater video
  2. Diver verification



# REEF DEPLOYMENT / OBSERVATIONS

JUNE – AUGUST 2017

- Reef Deployment Methodology
- Observation Methodology





# POST-DEPLOYMENT

## DIVER INVESTIGATIONS (NOVEMBER 2017)

**Goal: Survey at least 30% of deployed modules and collect:**

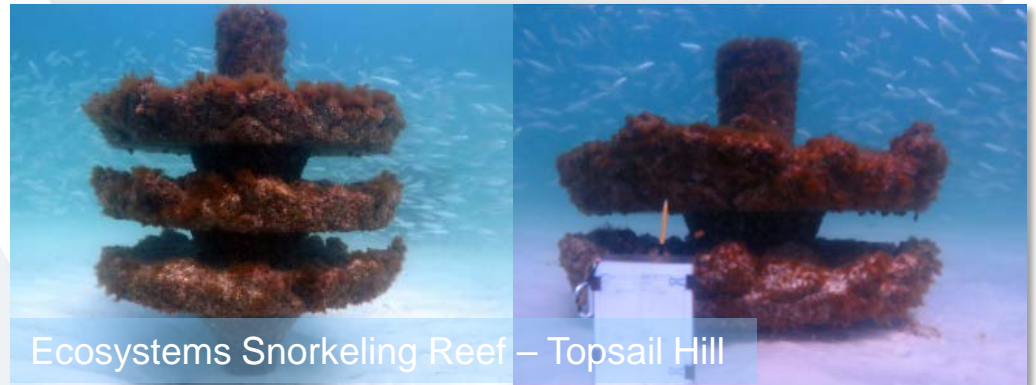
- Physical observations – damage, subsidence, relief
- Recreational usage – boat type/size, activity
- Benthic survey - invertebrates and macroalgae
- Fish census – species and abundance



# POST-DEPLOYMENT

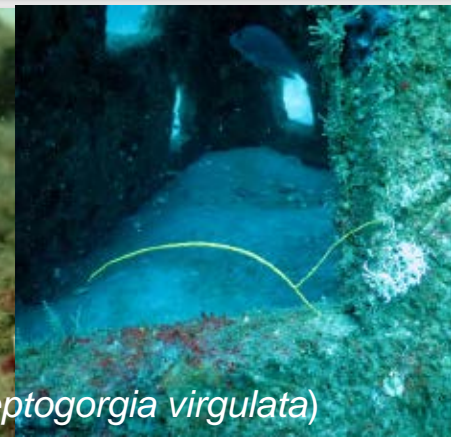
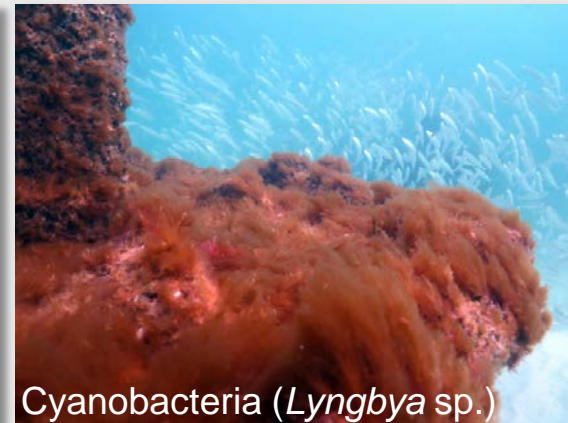
## DIVER INVESTIGATIONS

### Physical Observations and Recreational Usage



# POST-DEPLOYMENT DIVER INVESTIGATIONS

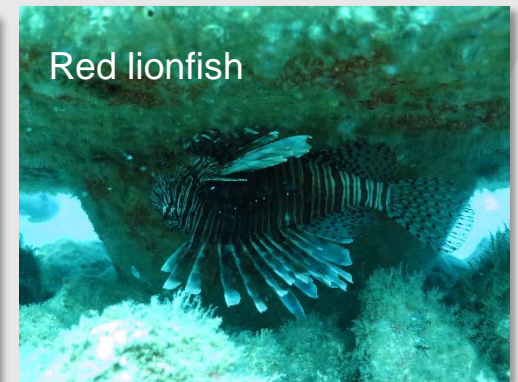
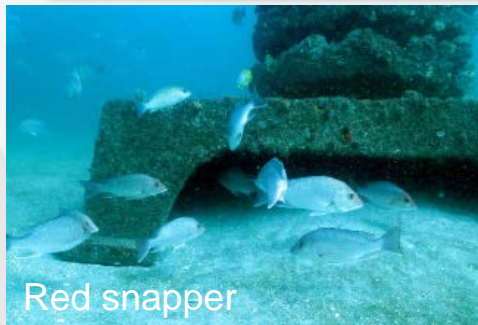
## Benthic Survey



Octocoral (*Leptogorgia virgulata*)

# POST-DEPLOYMENT DIVER INVESTIGATIONS

## Fish Census

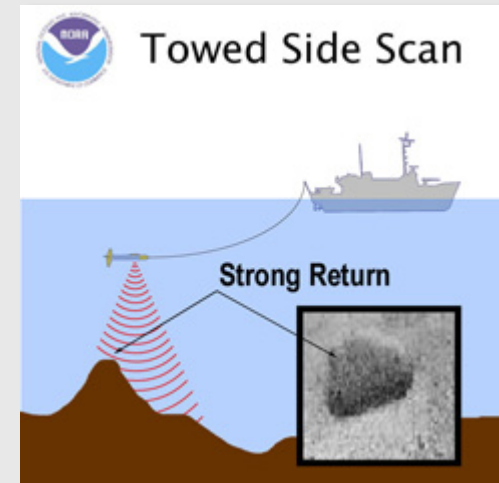


# POST-DEPLOYMENT

## SIDESCAN SURVEY (NOVEMBER 2017)

**Goal: Conduct sidescan over all permitted reef areas to assess reef placement and seafloor features.**

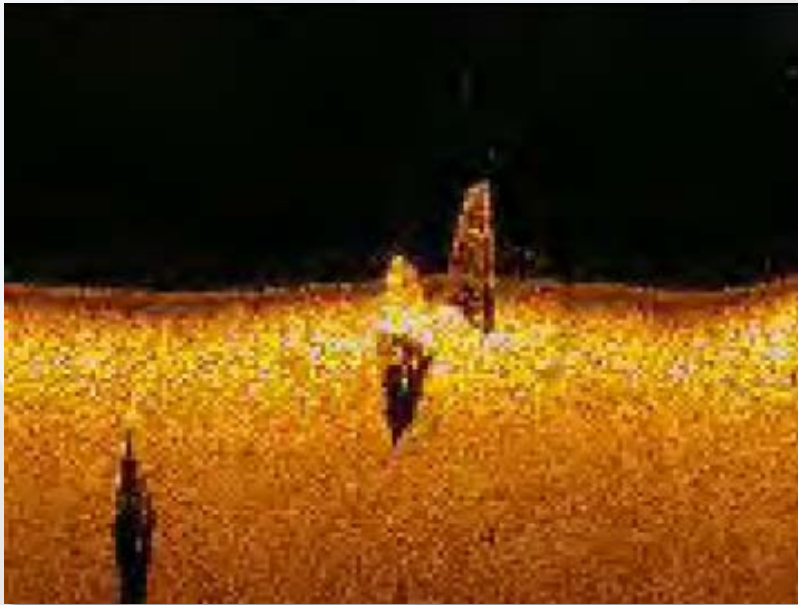
- EdgeTech 4125 sidescan sonar system with high/low dual frequency
- Survey designed varied for inshore, nearshore and offshore plans due to varying water depths
- Survey designed to collect over 100% sidescan coverage
- Mosaics produced for all 16 reef areas
- Sidescan data analyzed for module positions, additional contacts and seafloor features.



# POST-DEPLOYMENT

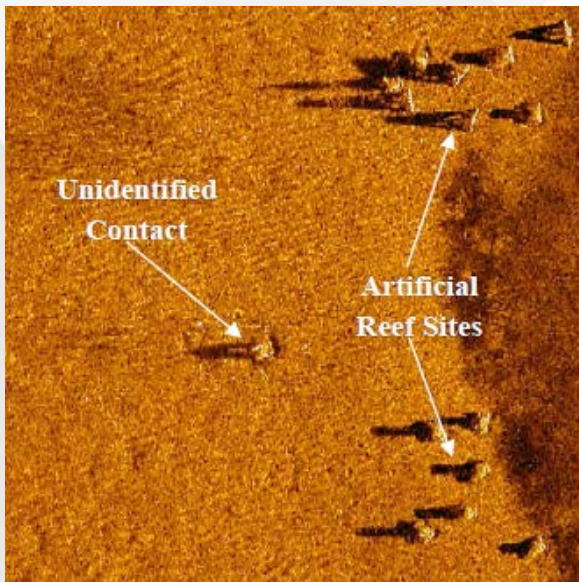
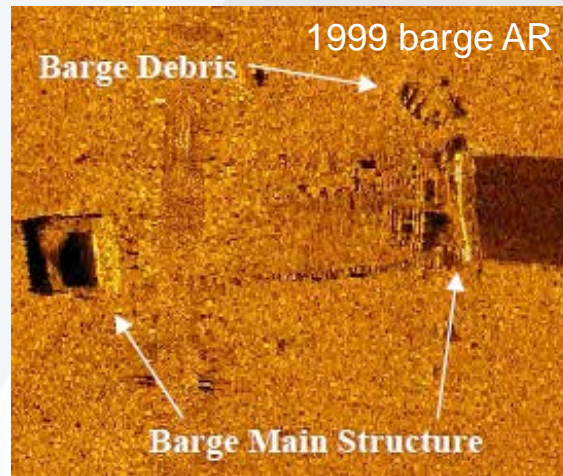
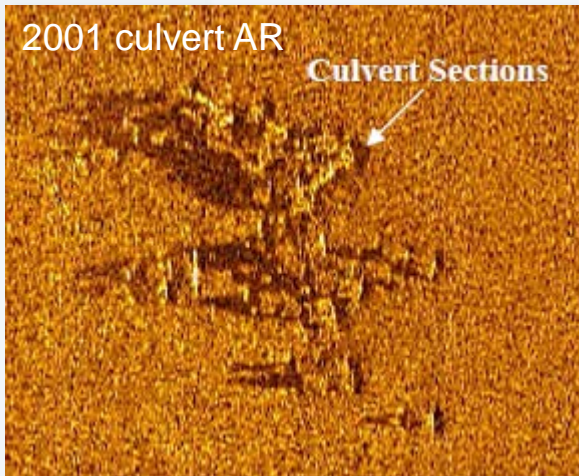
## SIDESCAN SURVEY

- Mosaics of all 16 reef areas
- All modules intact and upright
- All placed in the vicinity of the planned locations



# POST-DEPLOYMENT SIDESCAN SURVEY

## Mirimar Fish Haven #3

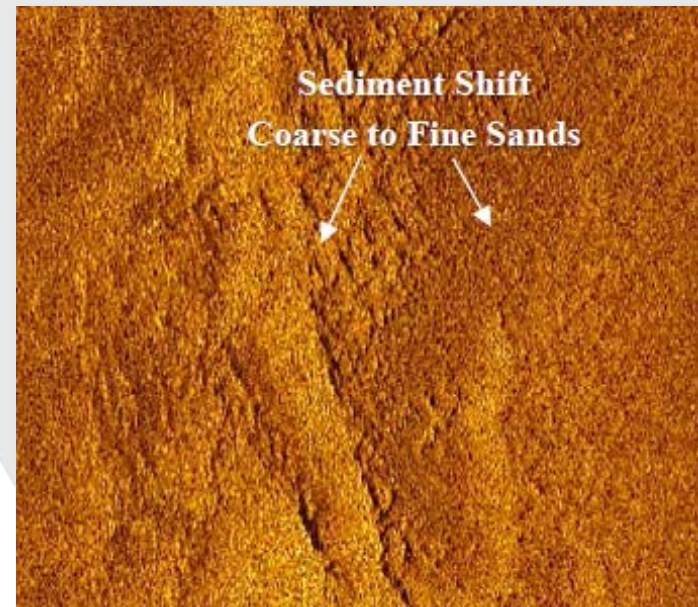
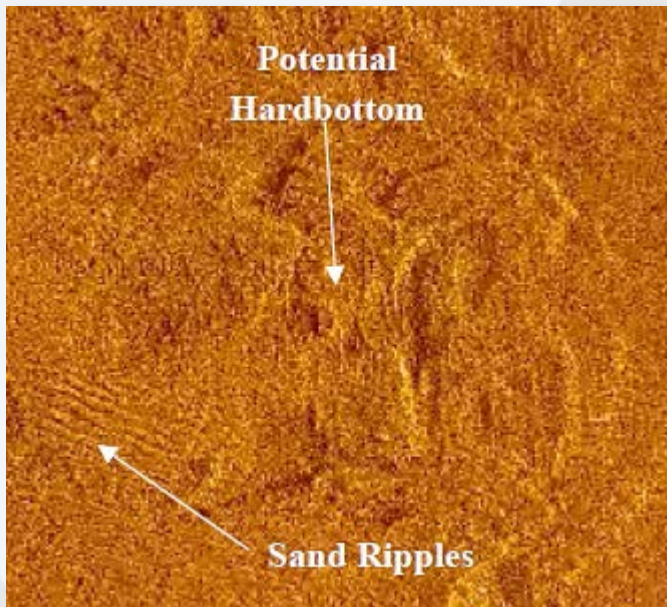


# POST-DEPLOYMENT

## SIDESCAN SURVEY

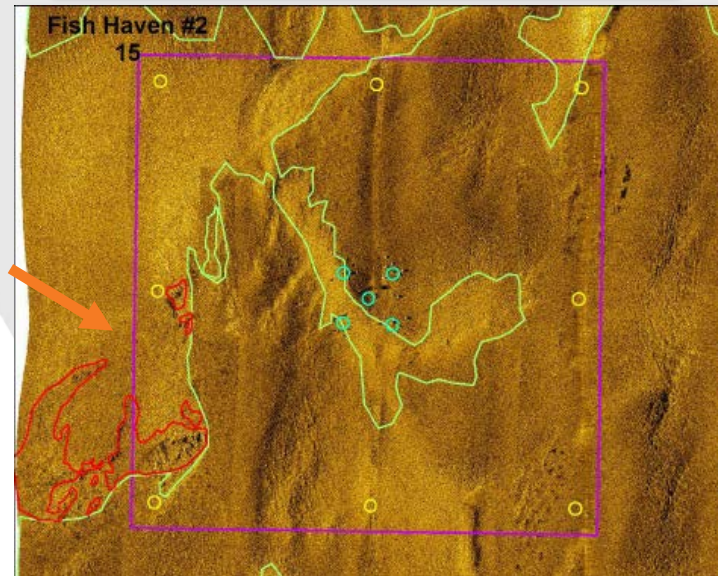
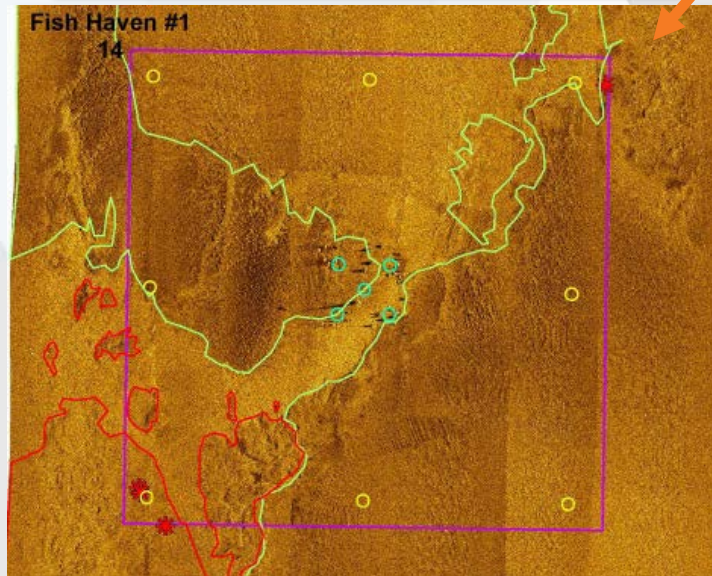
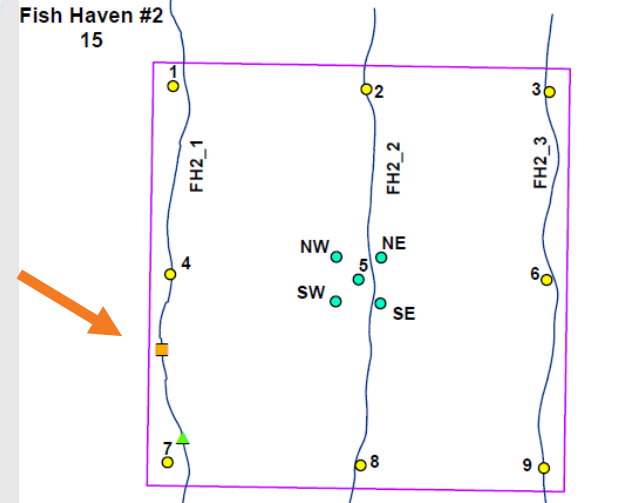
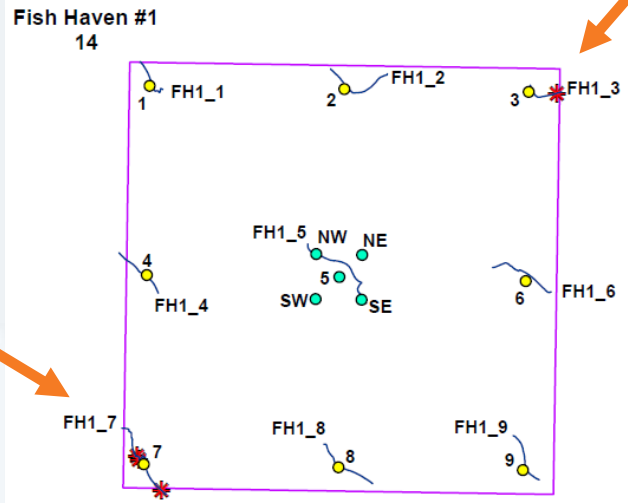
### Seafloor Features

- Fine sands
- Sand with some coarse grains
- Potential exposed hardbottom with rubble



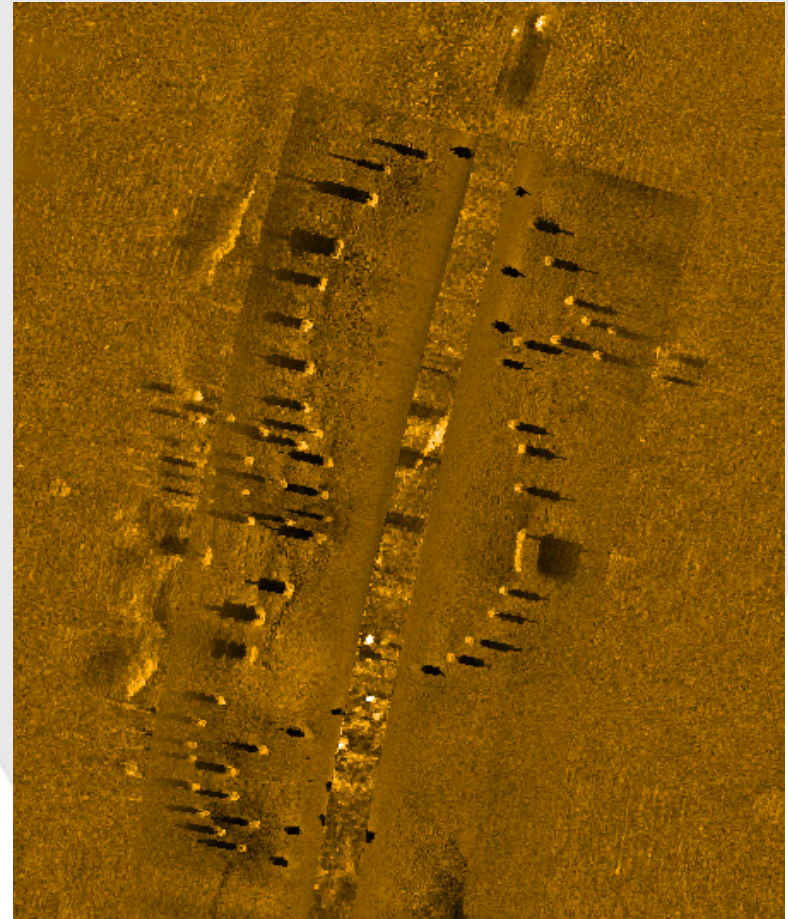
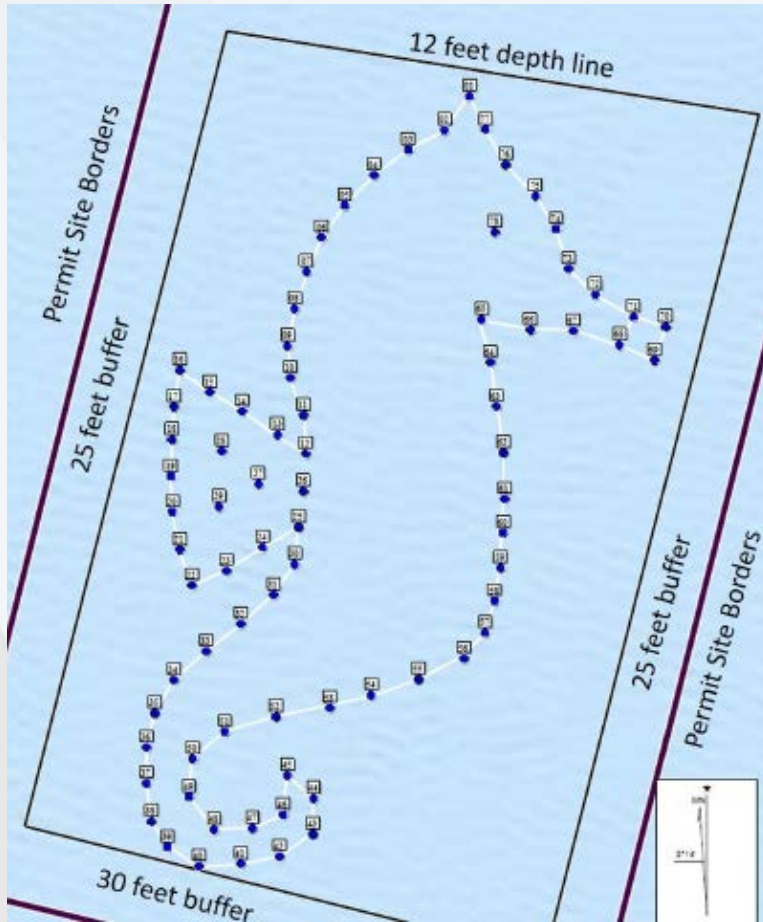


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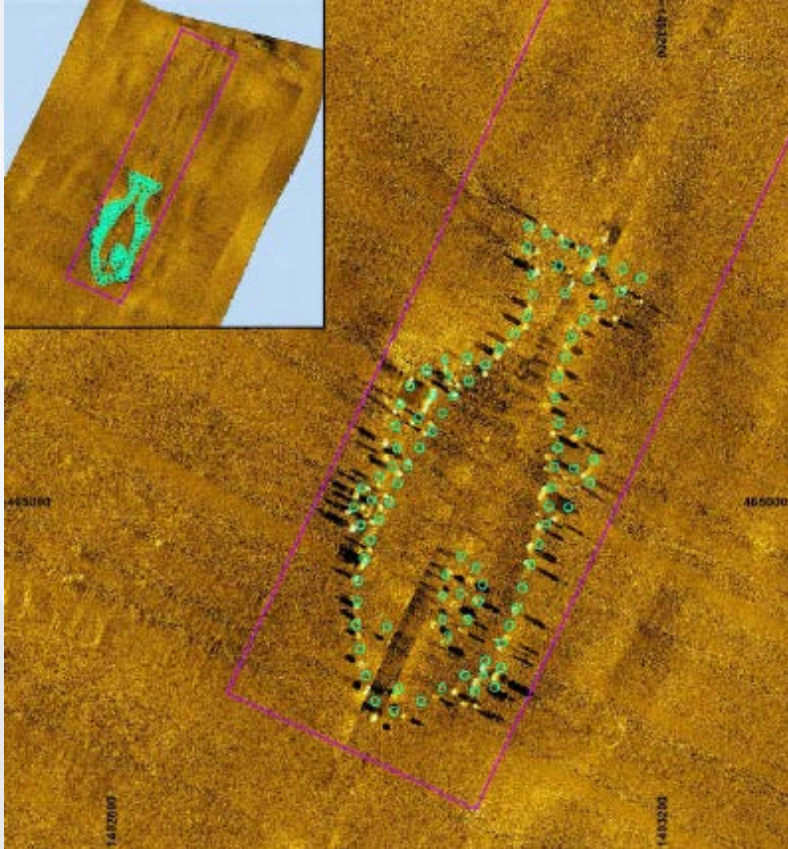
# POST-DEPLOYMENT SIDESCAN SURVEY

## Topsail Hill – Inshore Snorkel

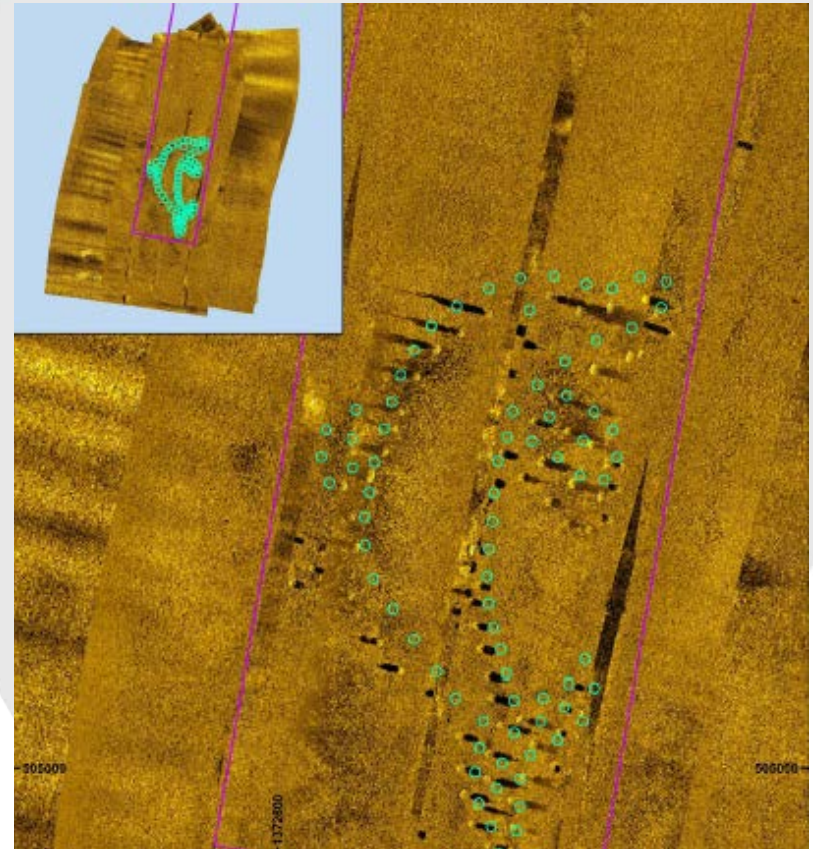


# POST-DEPLOYMENT SIDESCAN SURVEY

## Inlet Beach – Inshore

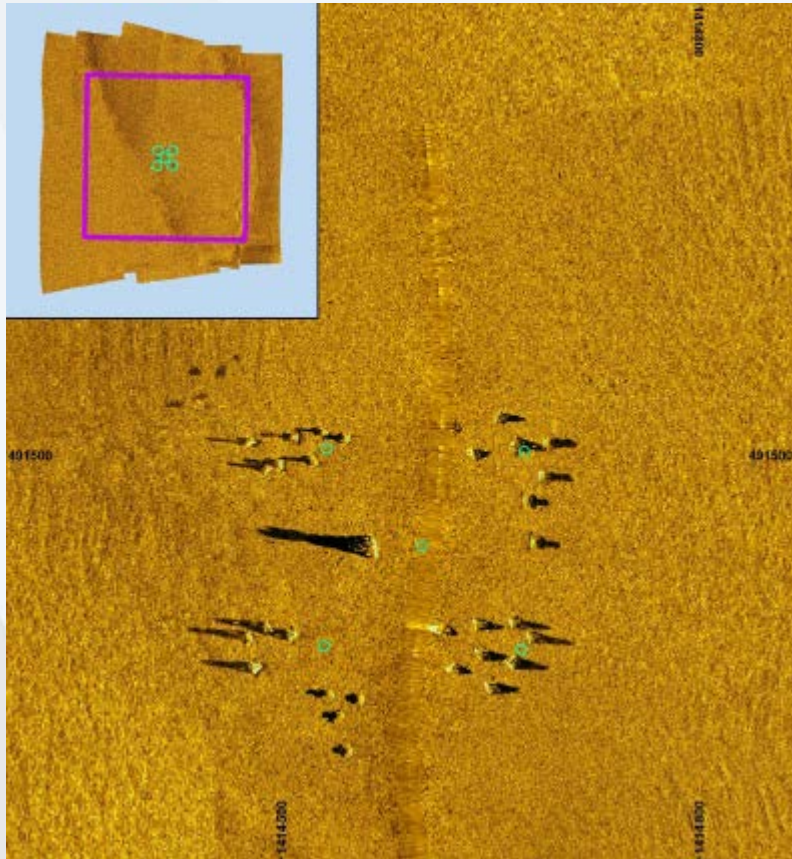


## Miramar Beach - Inshore

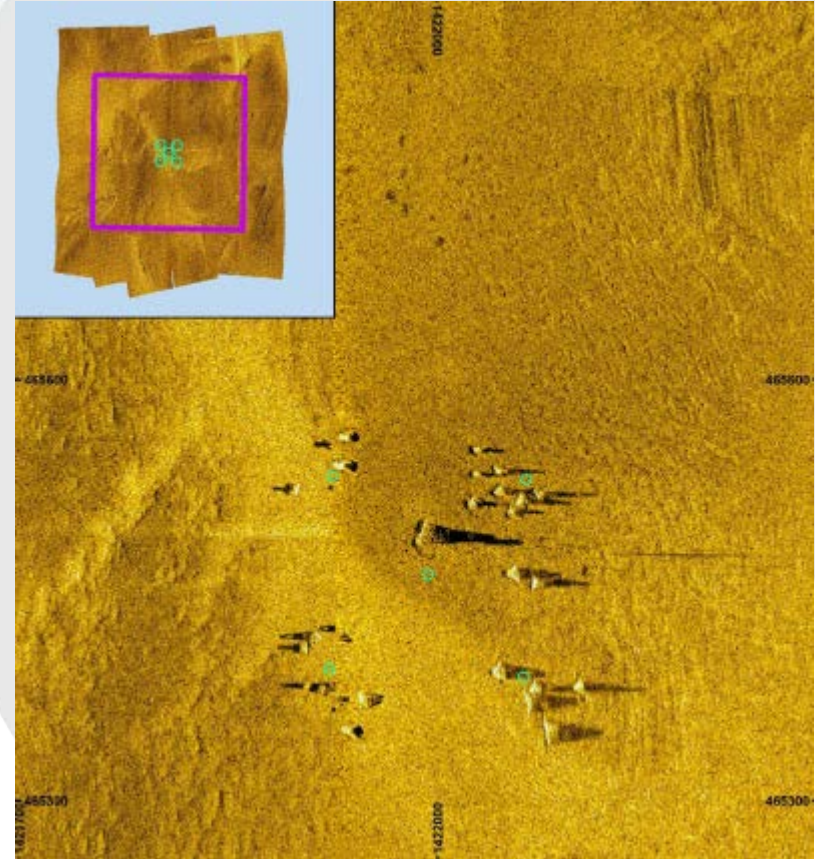


# POST-DEPLOYMENT SIDESCAN SURVEY

## Fort Panic - Nearshore



## Fish Haven #2 - Offshore



# WHAT'S NEXT

- Educational Signage

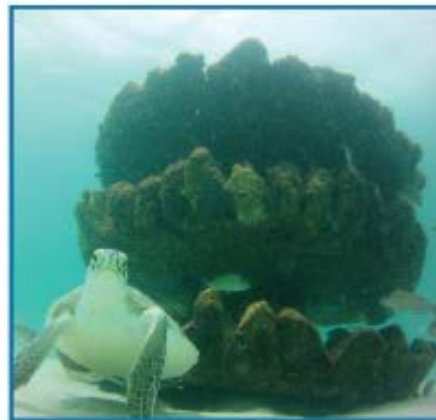


## REEF SAFETY TIPS

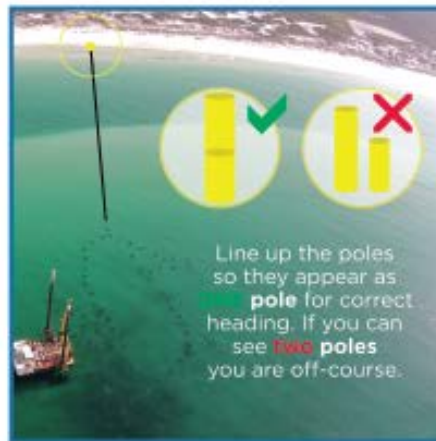
### PROTECT YOURSELF, PROTECT OUR REEF

- Always use caution
- Watch for others diving
- Wear protective clothing
- Be mindful of boats
- Always dive with a buddy
- Do not harass marine life
- Always carry diver down flag

\*All State Park Rules apply within the State Park Boundaries.



## DIRECTIONS



## MARINE LIFE TO LOOK FOR



\*Photography provided by Carol Cox

## BEACH FLAG WARNINGS

TEXT SAFETY TO 31279 FOR SURF CONDITIONS

- WATER CLOSED**  
Water activity is prohibited
- HIGH HAZARD**  
Knee deep is too deep
- MODERATE SURF/CURRENTS**
- CALM CONDITIONS**
- STINGING MARINE LIFE**  
Man o' War, Jellyfish, Stingrays

## BEWARE OF RIP CURRENTS



Rip currents are powerful currents of water that can sweep even the strongest swimmers out to sea. If you get caught in one, don't panic and don't swim against the current. Relax, float with the current until it dissipates. Swim parallel to the shore and diagonally back in.

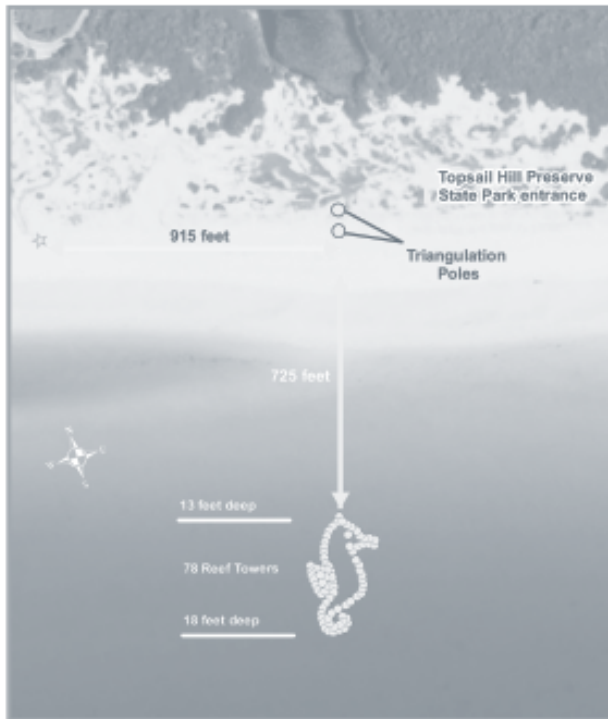
## DIVER DOWN SAFETY



State law requires that scuba divers or snorkelers display either a traditional divers-down flag OR a divers-down buoy whenever they are in the water. This legislation is a means of increasing diver visibility and diver safety on the waterways.

# WHAT'S NEXT

- Educational Signage



## DIRECTION



## REEF SAFETY TIPS

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# WHAT'S NEXT

- **Future Monitoring**
- **Next Phases of Reef Deployments**



# THANK YOU

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