Florida Department of Environmental Protection

Division of Water Resource Management

Solutions for Coastal Permitting & Mitigation

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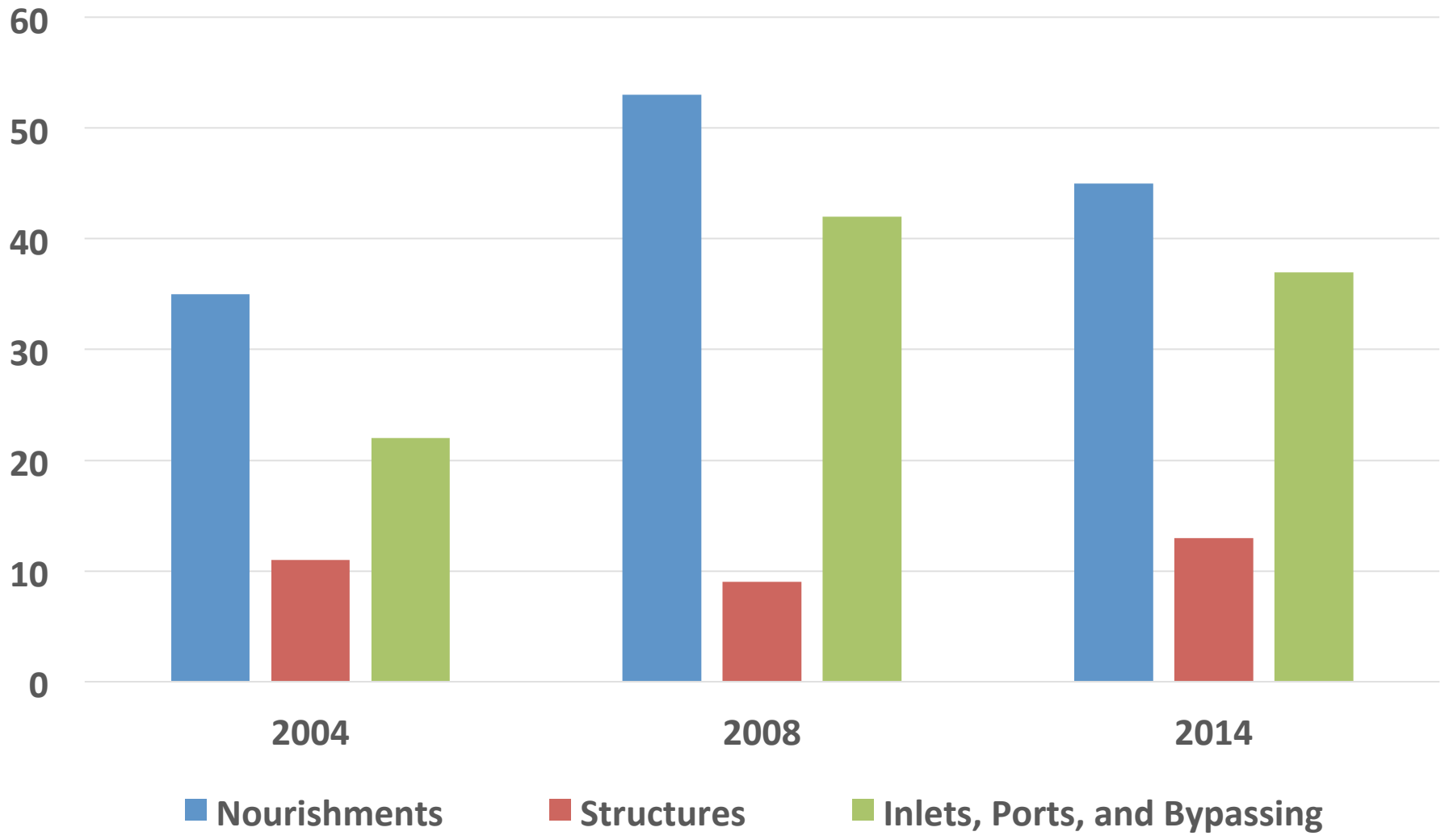
Environmental Permitting Summer School

July 25, 2014

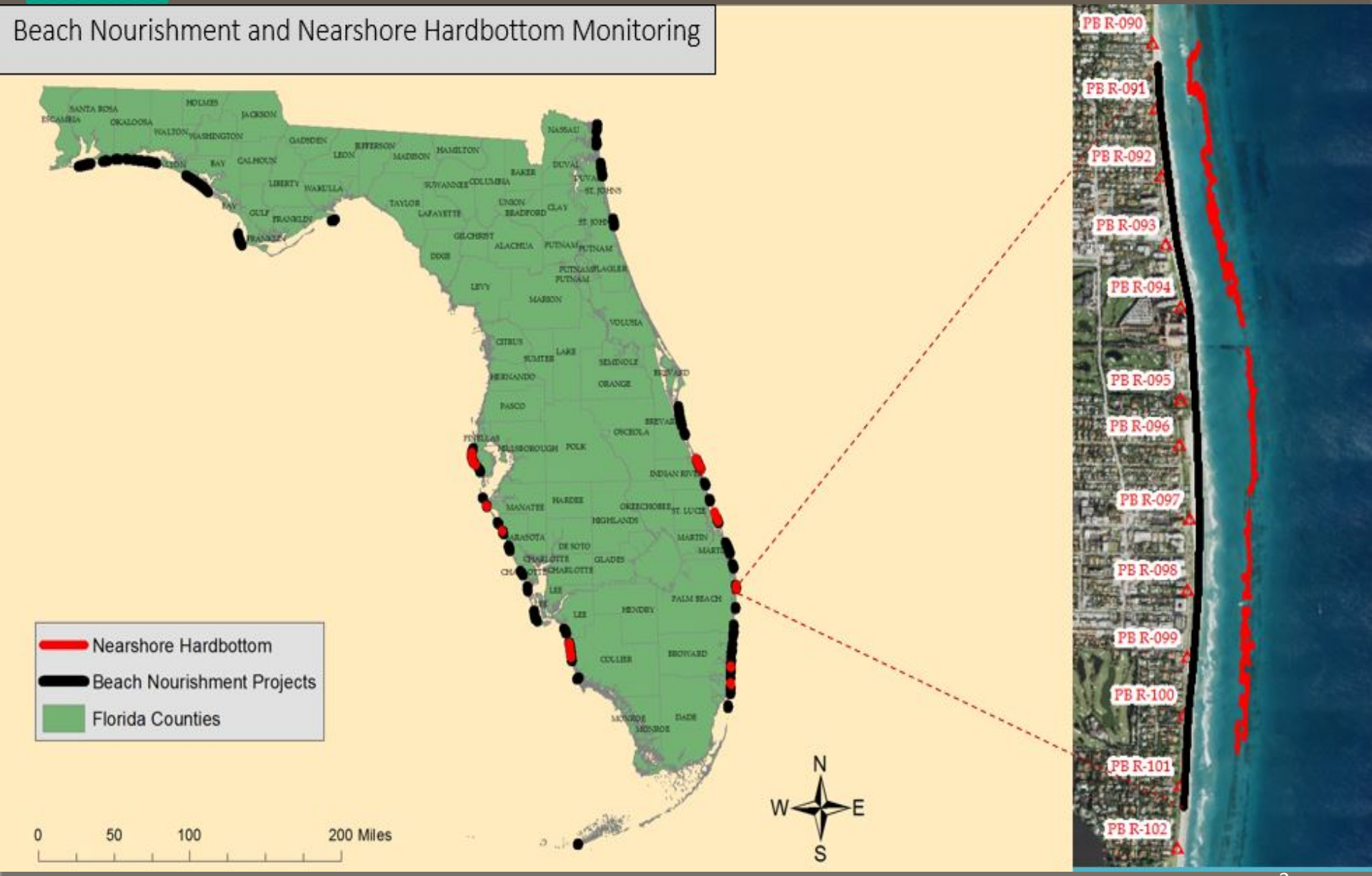




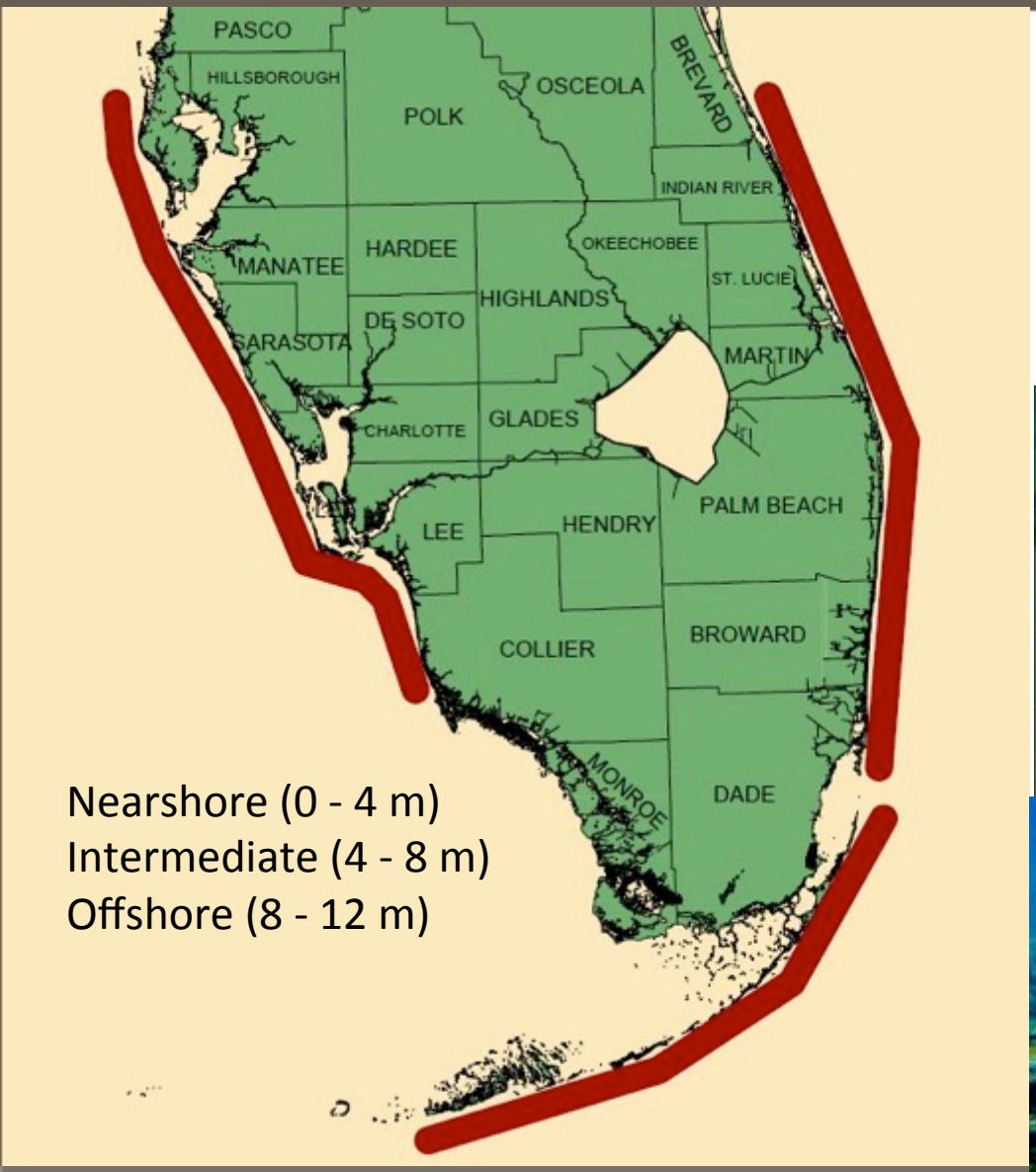
Active Permits by Type

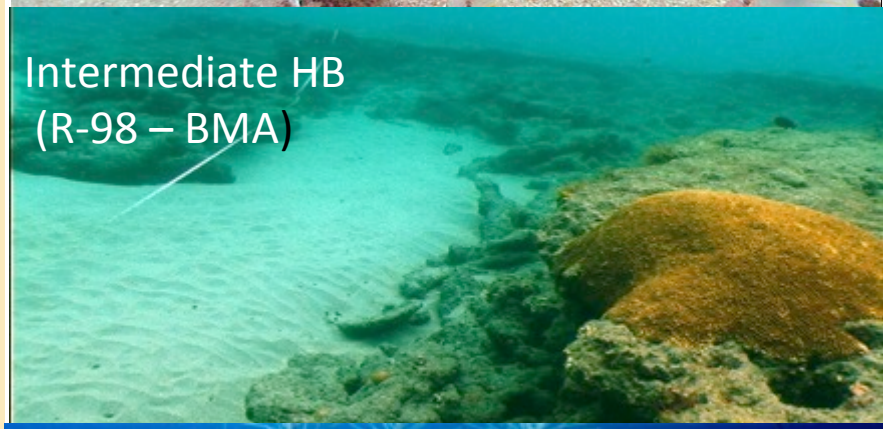


Projects with Hardbottom



Where is the Hardbottom?

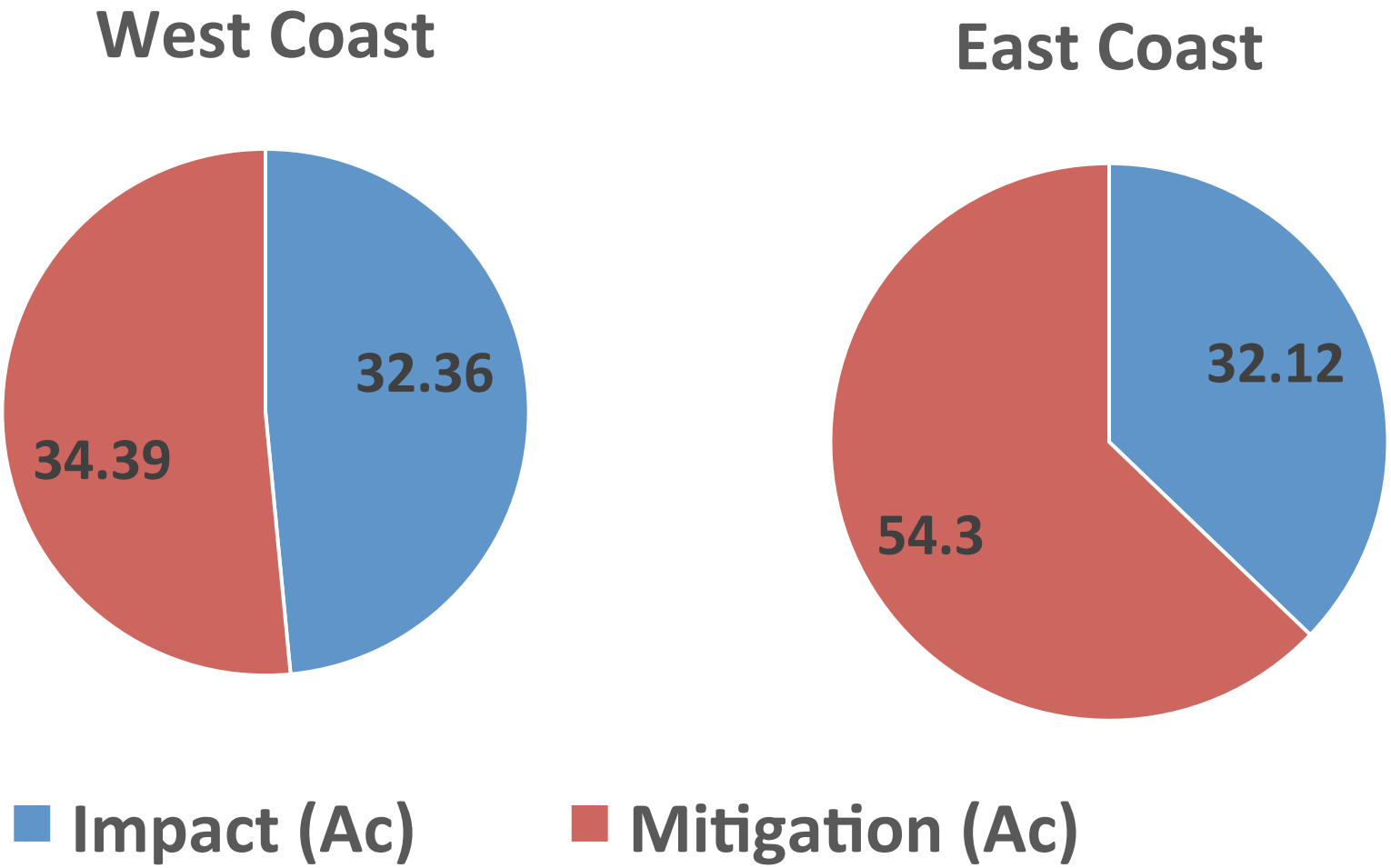




Species / Habitat Concerns

- Species
  - Interagency coordination
  - BO conditions
  - Structure challenges
  - Construction windows
- Minimization
  - Footprint, volume, etc.
  - BMPs (turbidity, dredge methodology)
- Impact Assessment
- Mitigation Assessment

HB Impact / Mitigation Summary



Hardbottom Mitigation = Various Types of Artificial Reefs

Impact Assessment

Document / measure:

- Habitat type
- Condition
- Amount
- Species
- Functions
- Spatial extent

Mitigation Assessment Tool

CHAPTER 62-345 F.A.C.- Uniform Mitigation Assessment Method (UMAM): Under Revision

GOAL: To develop a more certain regulatory process that is applied consistently across Florida to protect the environment and foster a sustainable economy. Make easier for citizens, businesses and agency staff.

Rule Development:
Preservation adjustment factor
Location/landscape support
Benthic habitats – SAV, Streams, HB
Risk factor

Website: http://www.dep.state.fl.us/water/wetlands/mitigation/umam/index.htm

- EXAMPLE UMAM SHEET
- SAV habitat
- Worksheet - quick assessment, objective
- Auto calculations
- HB habitat sheet is under development

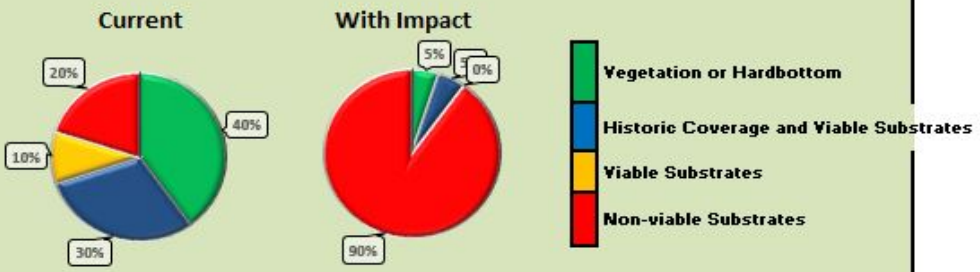
UMAM Manual | Table of Contents

Submerged Aquatic Habitat

Current Condition = 7.042 | With Impact = 2.208 | -0.483

For questions 1 - 7 and number 10, please enter estimates of areal extent rounded to the nearest whole number. For questions 8, 9, 11, and 12, please use the provided checkboxes to provide a response.

PQ
- (●) Impact Area
- ( ) Mitigation Area



1 What percent of the assessment area is currently vegetated at a density that would achieve at least a 1.0 using the Braun-Blanquet cover-abundance scale? 40 %

2 What percent of the assessment area is currently occupied by hardbottom communities? 0 %

3 Excluding those areas indicated above, what percent of the assessment area's remaining extent satisfies both item A and item B shown below: 30 %

A The area contains substrates with a depth and composition consistent with those found in surrounding areas currently occupied by vegetation or hardbottom, or substrates contained in the area are otherwise determined to be viable for colonization by vegetative or hardbottom communities,

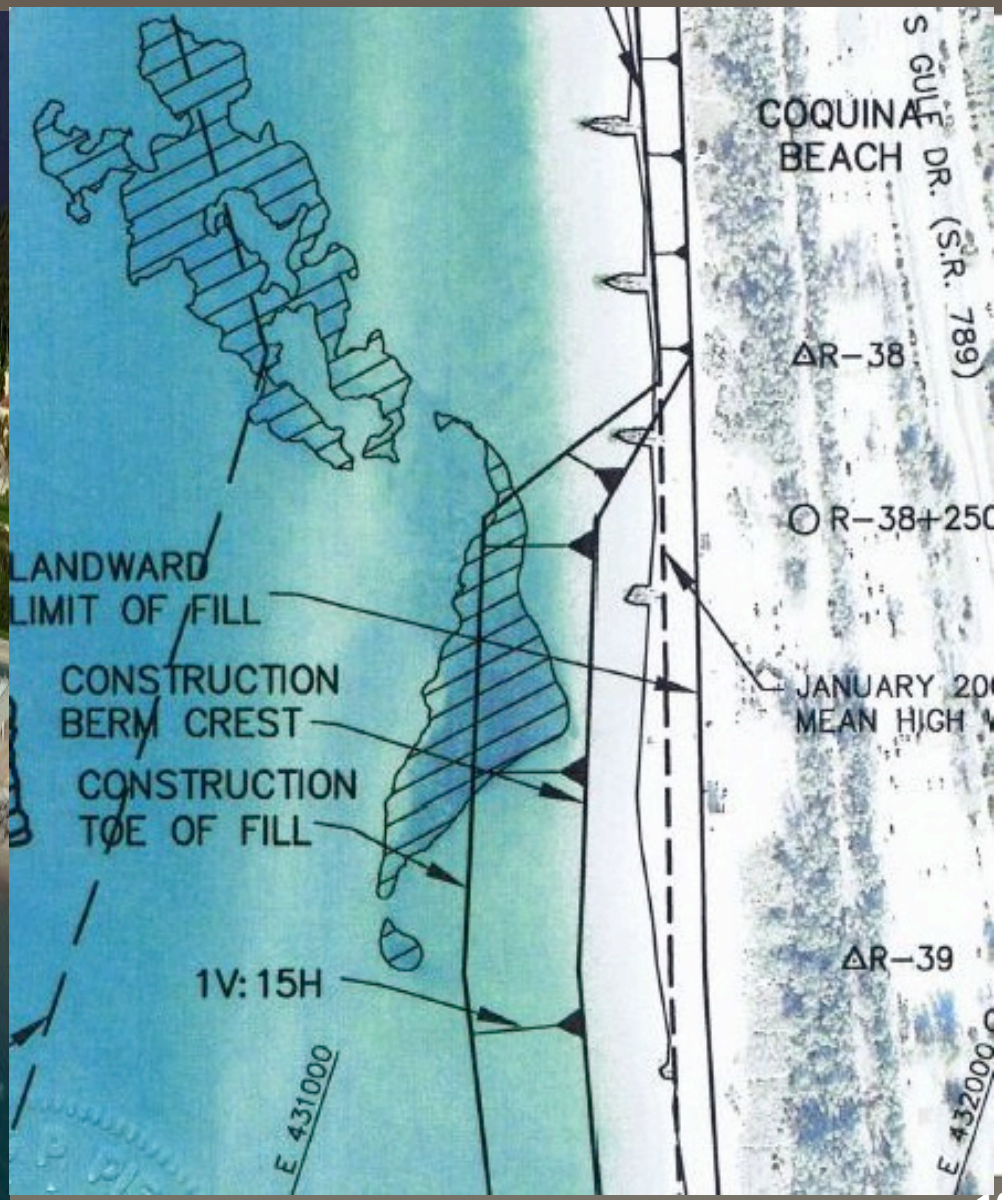
AND

B There is evidence of the area having been occupied by vegetation or hardbottom within the most recent 10-year period. Examples of evidence of habitation include documented surveys, prior delineation of inhabited areas through aerial interpretation, and documented first hand accounts.

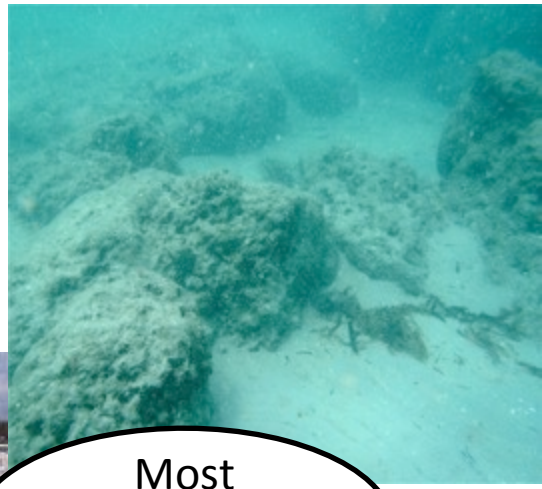
4 Excluding areas addressed under Questions #1 - 3 above, what percent of the assessment area's remaining extent contains substrates that are determined to be currently viable for potential colonization by vegetative or hardbottom communities? 10 %

Hardbottom Mitigation Options

- Nearshore Artificial Reef
- Offshore Artificial Reef
- Alternative Mitigation



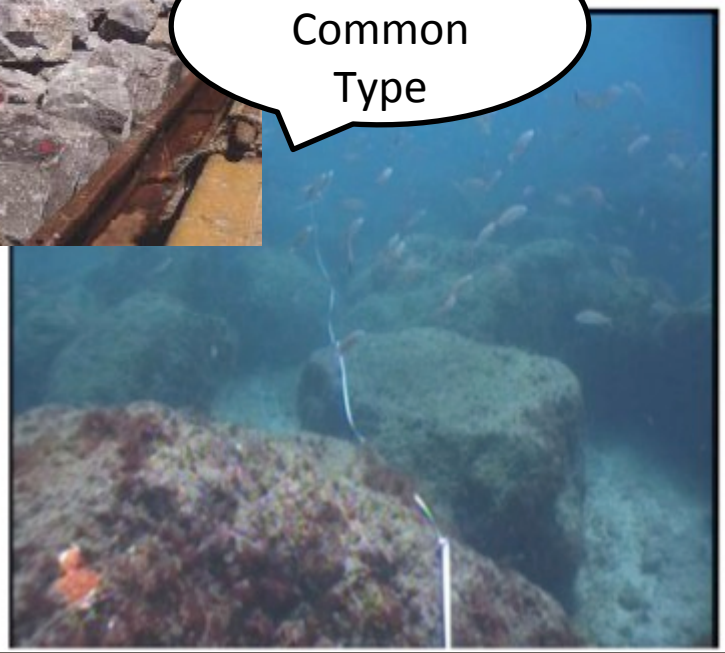
Traditional Hardbottom Methods



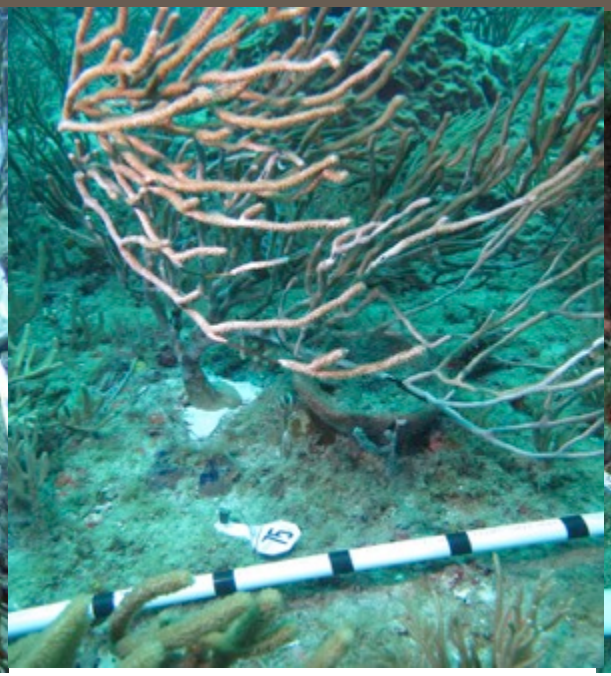
Most Common Type

Articulated Reef Module / Reef Module

Boulder Artificial Reef

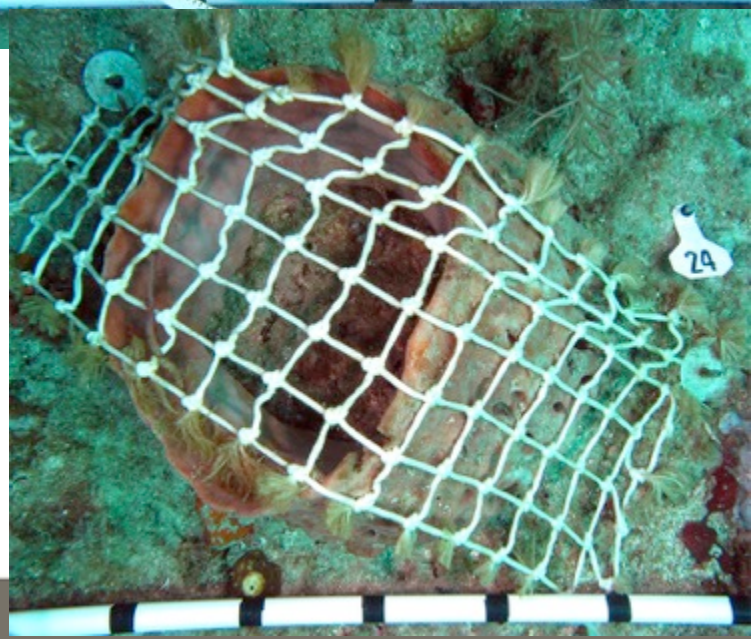


Alternative HB Mitigation



RESTORATION / ENHACEMENT

- Coral nursery program
- Orphan coral / octocoral reattachment
- Adaptive management



Adaptive Management

Use of sea urchins to make mitigation reef more effective

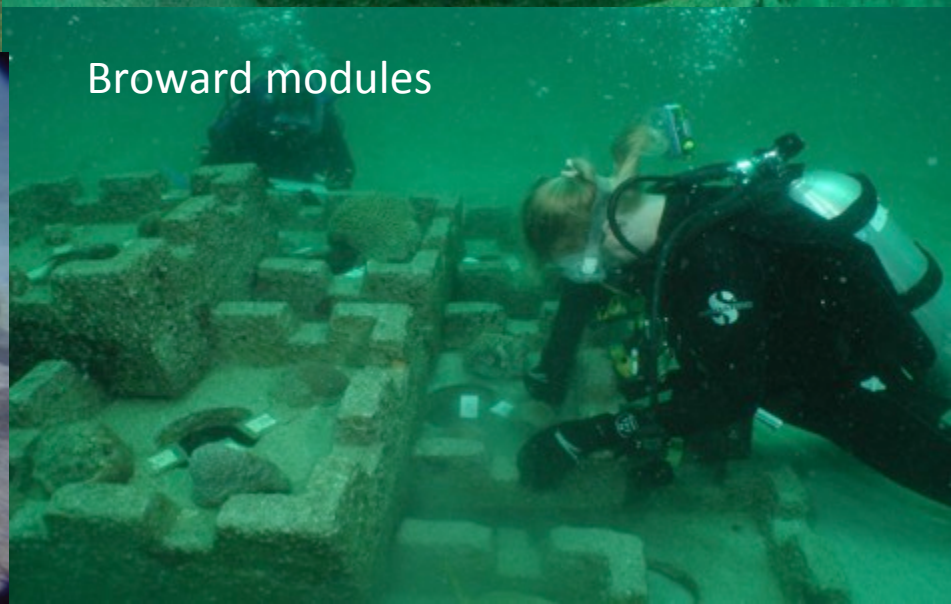
- Scours surface of reef
- Increases recruitment of corals

Nurseries


Nursery – Palm Beach
(permitted)


Acropora nursery


Nursery Anguilla

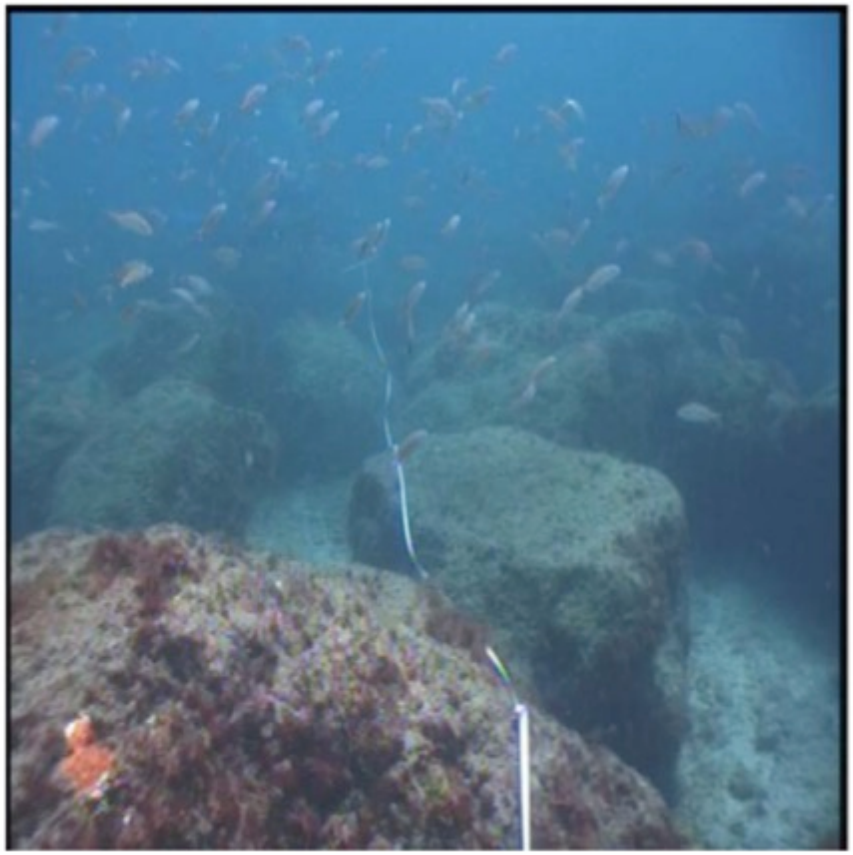

Broward modules

Mitigation Reef Study

- Resolve technical conflicts between State & federal policies
- Investigated how specific HB habitats vary with water depth (SE focus)
- Goal – assist applicants with design / siting of reef mitigation

Study Findings

- Artificial reef not always replacing ecological functions
- Water depth & relief important in habitats
- Species diversity not always replicated
- Artificial reef not end all, be all



Thank you!

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