

Maritime Industry Impacts on Coral Reefs: Challenges & Solutions in Southeast Florida

**U.S. Coral Reef Task Force Meeting
U.S.V.I. · October 2006**

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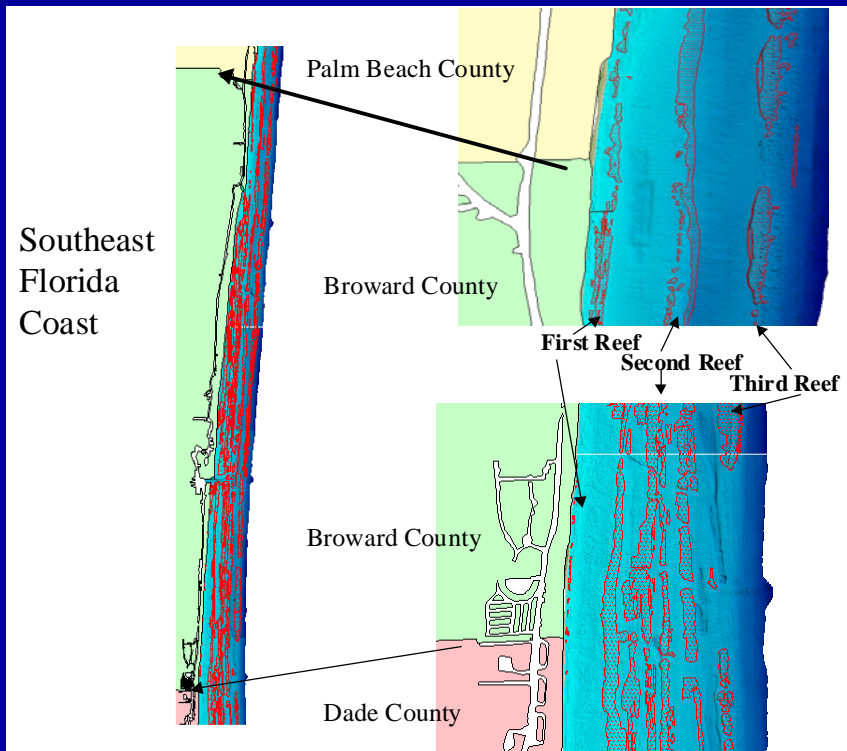
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Southeast Florida (including Miami-Dade, Broward, Palm Beach and Martin Counties) contains reefs that:

- are extensive
- are close to shore
- co-exist with intensely developed coastal areas

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In Broward County there are generally three lines of reef cresting in 3-5m (First Reef), 7-9m (Second Reef) and 16-23m (Third Reef)

The Florida reef tract extends beyond the Florida Keys northward through Martin County

- series of discontinuous reef lines (terraces) that parallel the shoreline
- a diversity of reef types
- algae and small octocorals near shore
- numerous octocorals and varied stony coral populations on the outer reefs

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Southeast Florida is home to 3 major commercial ports:

- Port of Miami
- Port Everglades
- Port of Palm Beach

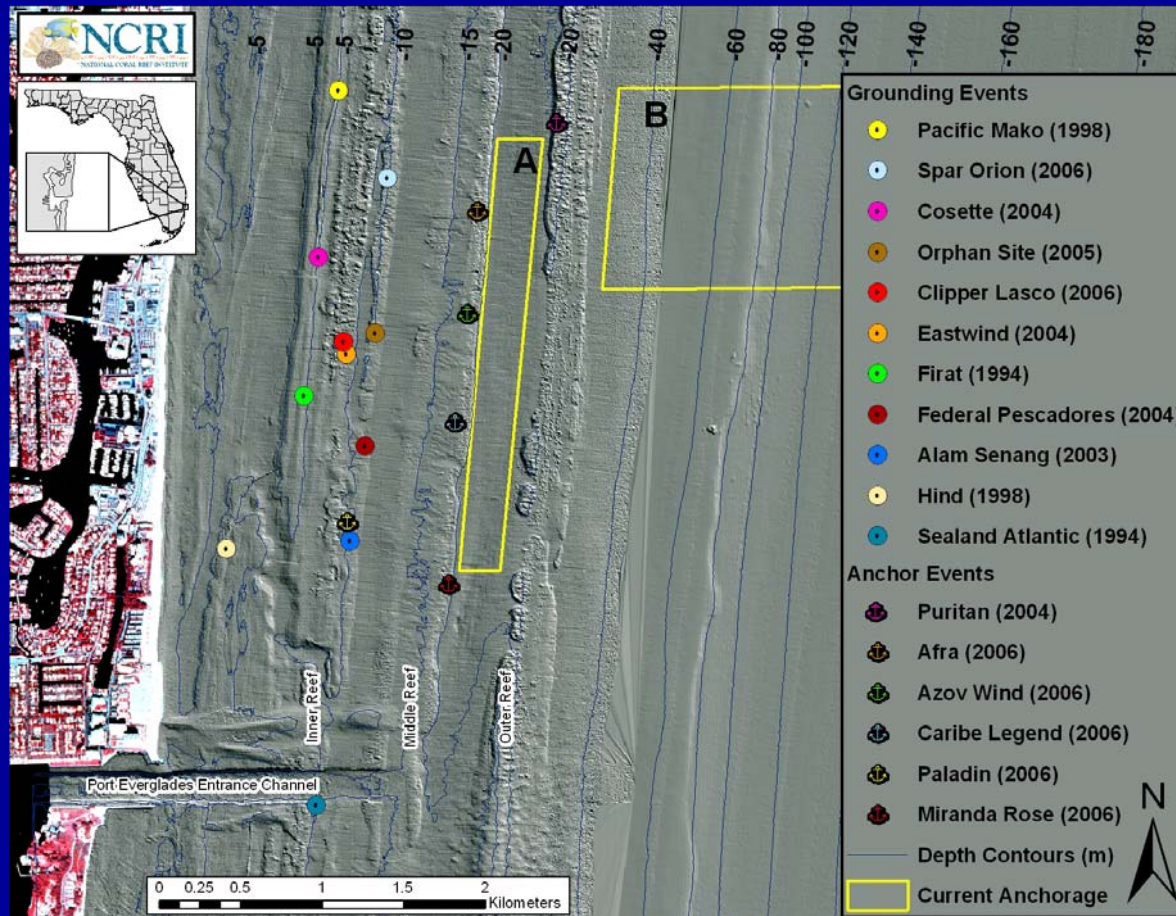


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The high number of vessels using Port Everglades (5,901 ship calls in 2005) subjects the surrounding marine environment to a constant flow of ship traffic.

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US Coast Guard designated anchorages at Port Everglades shown in yellow, with locations of recent vessel groundings and known anchor drag impacts.

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Vessel groundings, salvage efforts, anchoring on coral reefs, propeller wash, and towing cable drags can result in loss of coral reef habitat.

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Seeking Solutions:

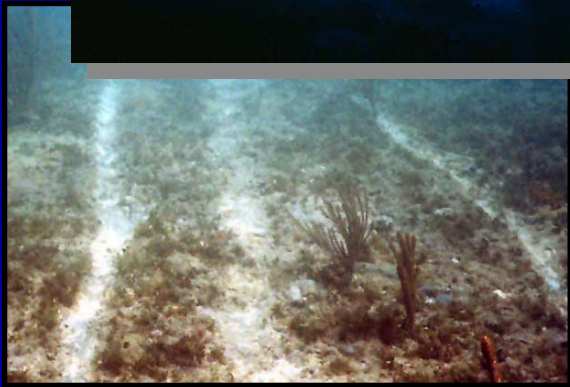
FDEP, FWC, Broward County, National Coral Reef Institute, NOAA NMFS, U.S. Coast Guard, and other Southeast Florida Coral Reef Initiative (SEFCRI) partners are working cooperatively towards:

1. Solutions for prevention of reef impacts associated with maritime industry activities in southeast Florida
2. Increased coordination, if and when a grounding or anchor drag event occurs
3. Rapid response, repair and restoration of injured corals and other marine organisms

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Local Action Strategy:
Develop guidelines for
rapid response to, and
restoration of, coral reef
injuries in southeast Florida



Developing Guidelines for Rapid Response to, and Restoration of, Coral Reef Injuries in Southeast Florida

SEFCRI LAS Workshop

February 2-3, 2006 • Fort Lauderdale, Florida

Workshop Goal

Facilitate stakeholder participation in the development of guidelines for rapid response to, and restoration of, reef injuries in southeast Florida

Workshop Participants included over 60 representatives from:

State Agencies: FDEP, FWC

Federal Agencies: NOAA, NPS, USCG, USACE

Local Agencies: Miami-Dade, Broward, Palm Beach, Martin Counties

Non-Governmental Organizations

Universities

Private Marine Science & Engineering Contractors

Law Firms

Day 1: Process and Policies for Emergency Response

Day 2: Technical Approaches for Response and Restoration



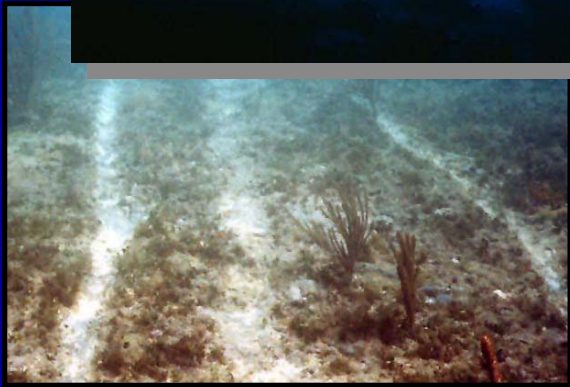
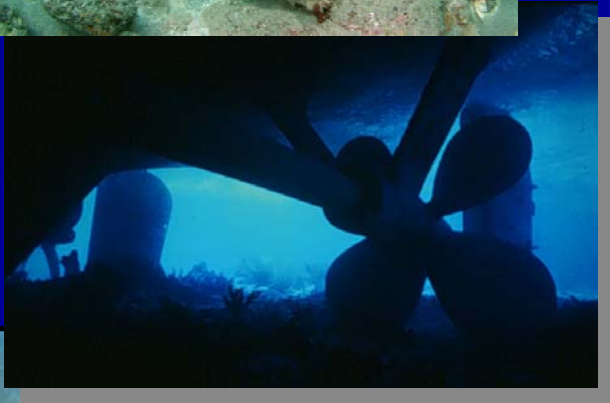
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Local Action Strategy: Develop guidelines for rapid response to, and restoration of, coral reef injuries in southeast Florida

Draft Guidelines

- Characterization of southeast Florida reef system
- Socioeconomic status, trends & reef impacts
- Types of reef injury
- Legal issues
- Initial response
- Response
- Post response



Maritime Industry Impacts on Coral Reefs: Challenges & Possible Solutions in Southeast Florida

Port Everglades Anchorage Alternatives Feasibility Study:

- Calypso U.S. Pipeline, LLC mitigation requirement
- Calypso contracted a private consulting firm to undertake an offshore anchorage feasibility study assessing:
 - alternate nearshore anchorages
 - mooring options
 - modifications to the existing anchorage
- The State of Florida, Broward County, Federal Agencies, and other stakeholders are providing study review and input

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U.S. Coast Guard Proposed Anchorage Rule Change:

Port Everglades Anchorage Working Group:

USCG invited the State of Florida, Broward County, Federal Agencies, National Coral Reef Institute and other stakeholders to provide input on the determining a solution to the chronic vessel impacts at the Port

Possible solutions include:

- Redesignating the current Port Everglades ship anchorage areas
- Identifying potential alternatives to anchoring
- Recommending safer approach routes for vessels entering and exiting the area
- Limiting the size and number of vessels in existing anchorage areas
- Limiting the amount of time vessels remain in the anchorage area

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Local Action Strategy:








Examine existing anchorage areas at:

- Port of Miami
- Port of Palm Beach

...to recommend anchorage modifications
and alternatives that minimize the risk of
coral reef impacts

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New Challenges: Post-Panamax Vessels

Generation (Year Range)	Vessel Type	Length	Draft	TEU
First Generation (1956-1970)	 Converted Cargo Vessel	135 m	< 9 m	500
	 Converted Tanker	200 m		800
Second Generation (1970-1980)	 Cellular Containership	215 m	10 m	1,000 – 2,500
Third Generation (1980-1988)	 Panamax Class	250 m	11-12 m	3,000
		290 m		4,000
Fourth Generation (1988-2000)	 Post Panamax	275 – 305 m	11-13 m	4,000 – 5,000
Fifth Generation (2000-?)	 Post Panamax Plus	335 m	13-14 m	5,000 – 8,000

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New Challenges: Port and Entrance Channel Expansion

- The Army Corps of Engineers, Jacksonville District is preparing a congressionally authorized feasibility study and draft Environmental Impact Statement (DEIS) for dredging and expansion activities at Port Everglades
- The project is being designed to accommodate post-Panamax vessels, which are too large to travel through the Panama Canal
- The DEIS is anticipated for release October 2007

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New Challenges: Port and Entrance Channel Expansion

Reef Survey for Port Everglades DEIS:

Reviewed by 13 resource managers and scientists from 7 local, state and federal agencies and universities

Findings

- lack of appropriate QA/QC procedures
- low sample size and under sampling
- lack of appropriate control sites
- lack of inclusion of protocols to specifically identify *Acropora cervicornis*
- lack of survey information for channel walls and side slopes
- lack of survey information for areas adjacent to direct impact areas

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New Challenges: Port and Entrance Channel Expansion

Port Everglades Outer Entrance Channel Widening and Deepening Impacts			
habitat type	acreage	additional information	new impacts or previously dredged areas?
Reef 2	11.9	approx 25,546 scleractinian corals; 24,100 octocorals	new
Reef 3	9.4	approx 60,882 scleractinian corals; 47,260 octocorals	new
Reef (total)	21.3	approx 157,788 corals	new
Hardbottom	20.09	no compensatory mitigation offered	previously dredged
Seagrass	5	including approx 1 acre of <i>Halophila johnsonii</i>	new
Mangroves	11.55	8.48 ac currently held in conservation easement for previous Port impacts	new

Source: Port Everglades Mapping and Assessment Preliminary Draft July 2006, FWS draft CAR April 2005



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New Challenges: Port and Entrance Channel Expansion

Cumulative Impacts:

Port of Miami Phase III project impacts are also significant
(FEIS complete)

- 6.3 acres of seagrass habitat
- 28.7 acres of low-relief hardbottom/reef habitat
- 20.7 acres of high relief hardbottom/reef habitat
- 123.5 acres of rock/rubble habitat

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New Challenges: Port and Entrance Channel Expansion

Alternatives and Economics:

- The need for 2 ports within a 30-mile area to accommodate post-Panamax vessels has not been demonstrated, nor has it been evaluated in the draft feasibility study
- The economic analysis prepared for the feasibility study considers the need for Port Everglades expansion independent of the Port of Miami expansion
- Currently, there are no ports along the U.S. east coast that can accommodate post-Panamax vessels; however the Port of New York/New Jersey is undergoing a dredging project to accommodate post-Panamax vessels

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Steps To Identify Solutions

- Evaluate need for 2 ports within 30-miles to accommodate Post-Panamax vessels
- Correct reef survey shortfalls
- Conduct an economic valuation of marine resources at Port Everglades, weighed against the cost of their total destruction and the expected economic benefit of the Port expansion (factoring in the Port of Miami expansion)
- Evaluate potential marine resource impacts at alternative Ports for comparison
- In considering this (and other) proposed project(s), uphold the mandate of Presidential Executive Order 13089, which states: “All Federal agencies whose actions may affect U.S. coral reef ecosystems shall: (a) identify their actions that may affect U.S. coral reef ecosystems; (b) utilize their programs and authorities to protect and enhance the conditions of such ecosystems; and (c) to the extent permitted by law, ensure that any actions they authorize, fund, or carry out will not degrade the conditions of such ecosystems.”

THANK YOU

The FDEP Coral Reef Conservation Program recognizes and is deeply indebted to the many stakeholders and partners who have contributed their time and expertise to the development and implementation of the Southeast Florida Coral Reef Initiative.



Southeast
Florida
Coral Reef
Initiative

For more information on the SEFCRI, including the complete Local Action Strategy visit:

www.dep.state.fl.us/coastal/programs/coral/

Coming soon:

www.southeastfloridareefs.net

Or contact:

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