

Developing Guidelines for Rapid Response to, and Restoration of, Coral Reef Injuries in Southeast Florida: Preliminary Results from a Local Action Strategy Project

**Chantal E. Collier¹, Richard Dodge², David Gilliam², Kelly Gracie³,
Lisa Gregg⁴, Walter Jaap⁵, Michael Mastry⁶, Nikki Poulos¹**

¹Florida Department of Environmental Protection, Coral Reef Conservation Program, Miami, FL

²National Coral Reef Institute, Nova Southeastern University Oceanographic Center, Dania, FL

³Florida Fish and Wildlife Conservation Commission, Tallahassee, FL

⁴Tetra Tech EC, Inc., Boynton Beach, FL

⁵Lithophyte Research, St. Petersburg, FL

⁶Michael Mastry, Attorney and Counselor, P.A., Tampa, FL



Southeast Florida Coral Reef Initiative (SEFCRI)

Vision: To develop an effective strategy to preserve and protect southeast Florida's coral reefs and associated reef resources, emphasizing balance between resource use and protection, in cooperation with all interested parties



140 LAS projects targeting 4 focus areas of concern:

- Land-based sources of pollution
- Lack of awareness and appreciation
- Impacts associated with fishing, diving, and other uses
- Maritime industry and coastal construction impacts

Southeast Florida Coral Reef Initiative (SEFCRI)



Southeast Florida (including Miami-Dade, Broward, Palm Beach and Martin Counties) was chosen because it contains reef ecosystems that:

- are extensive
- are close to shore
- co-exist with intensely developed coastal areas
- lacked a coordinated public education or management plan

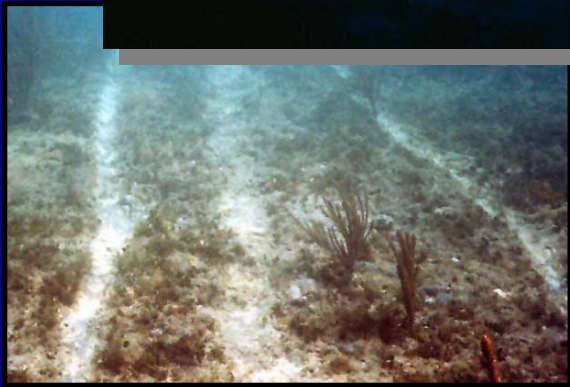
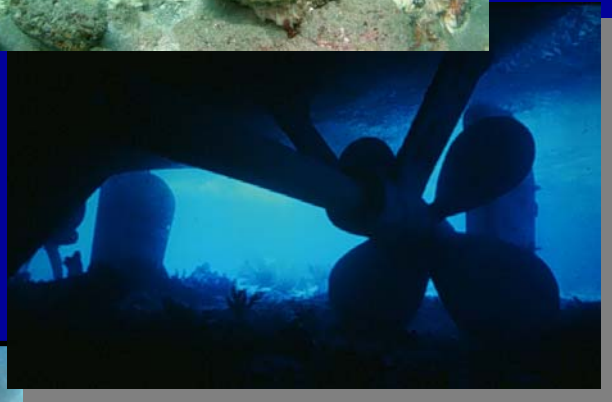
Maritime Industry & Coastal Construction Impacts (MICCI) Project 2



**Develop guidelines for rapid response to,
and restoration of, coral reef injuries
in southeast Florida**

Project Approach:

- Assemble project team
- Develop & conduct workshop
- Draft guidelines document
- Public review & comment
- Produce final guidelines



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

MICCI Project 2 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, coral reef injuries in southeast Florida

Workshop Participants

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



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

Workshop Day 1: Process and Policies for Emergency Response

- Review existing policies and procedures for emergency response
- Document “best practices” from these policies and procedures that can be potentially incorporated into guidelines for rapid response to coral injuries
- Build group consensus on those best practices that should be incorporated into guidelines for rapid response to coral injuries
- Describe next steps for creating guidance for agency policies involving injuries to coral reef ecosystems that will include technical guidelines for triage and restoration of such injuries

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

Workshop Day 2: Technical Approaches for Response, Restoration and Repair of Coral Reefs

- Gather successful practices from field practitioners who have experience responding to coral injuries
- Review different damage assessment techniques
- Review actual examples of how field practitioners complete:
 - Survey Methods (organisms and structure)
 - Triage for organisms
 - Injury Assessment (HEA and others)
 - Structural restoration of reef framework
 - Rubble management
 - Transplanting of organisms
 - Monitoring
 - Qualification of contractors for coral reef restoration
- Describe next steps for creating guidance for practices to respond to, provide triage, restore and monitor injuries to coral reef ecosystems

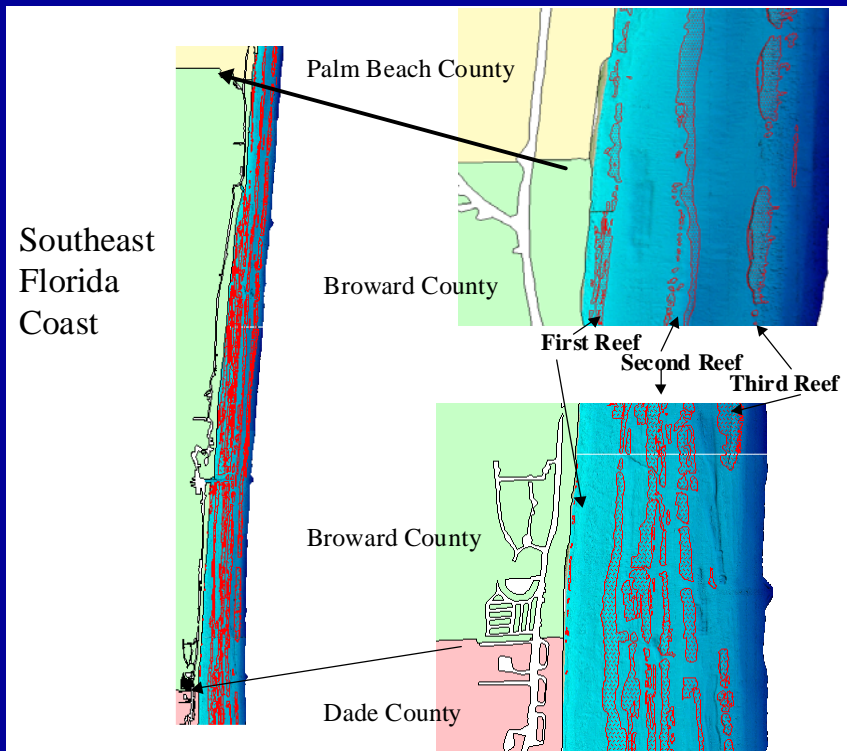
Developing Guidelines for Rapid Response to, and Restoration of, Coral Reef Injuries in Southeast Florida

Draft Guidelines

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

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

Characterization of Southeast Florida Reef System



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

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

Socioeconomic Status, Trends & Reef Impacts

Southeast Florida is densely populated and urbanized

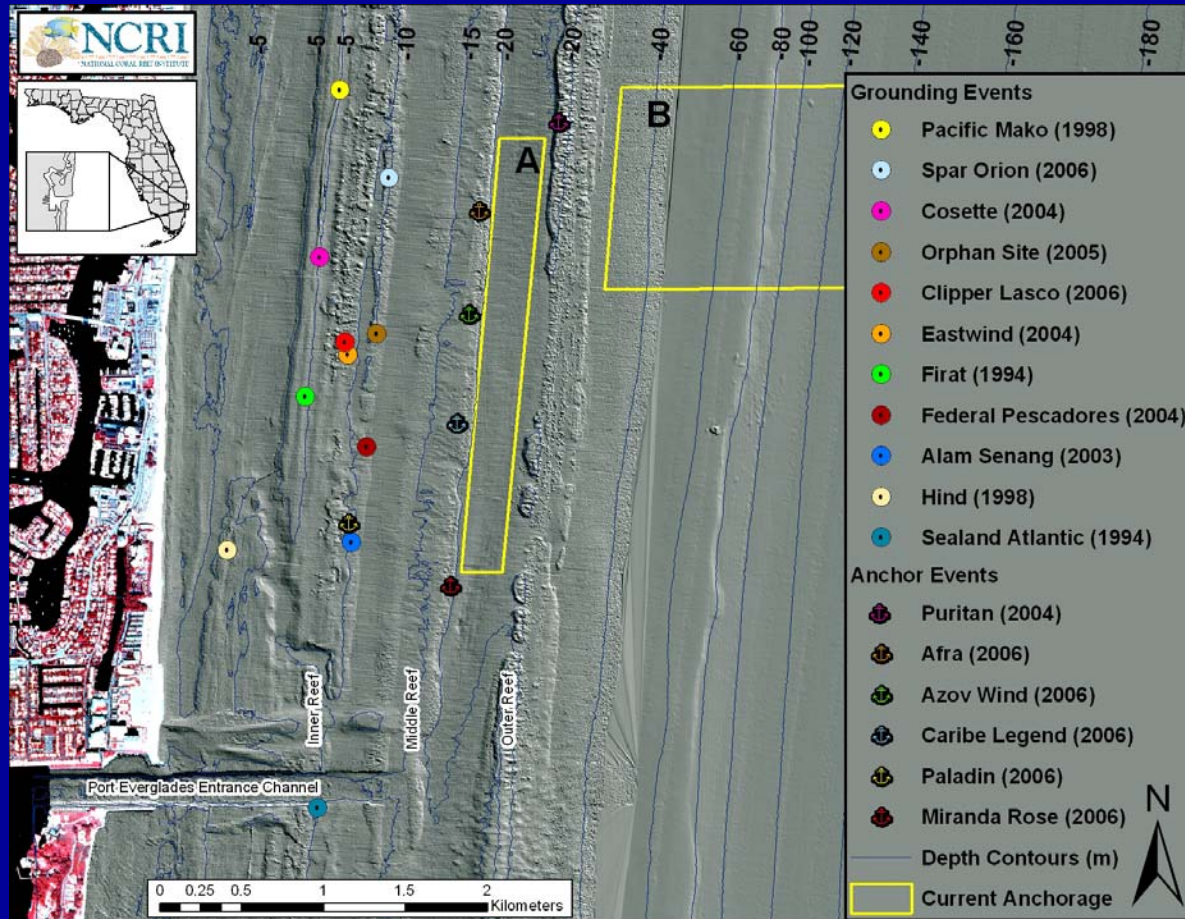
- Population: > 5,000,000
- Density: > 900 people/mi²
- Tourism: 24.7 million visitors in 2004
- Boat registrations: >141,000
- Annual reef usage: >15 million person days/yr

Reef impacts associated with proximity to this coastal environment

- Land-based sources of pollution (runoff, outfall discharges)
- Resource use (fishing, diving, boating)
- Construction activities (beach nourishment, infrastructure installation, port maintenance and expansion)
- Maritime industry (vessel groundings and anchor damage)



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



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

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

Reef injuries result from permitted and unpermitted activities

Permitted Activities

- Require authorization from local, state, or federal regulatory entities
- *Examples:* Beach nourishment, dredging, surveying, pipeline construction, communication cable installation, port maintenance/expansion
- Include response requirements for potential reef impacts

Unpermitted Activities/Incidents

- Are not governed by the regulations for permitted activities
- *Examples:* Acts of nature, vessel groundings and salvage efforts, anchoring on coral reefs, propeller wash, towing cable drags
- Target of the “Guidelines” project

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



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

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

Legal Issues

Trustee

- Agency or entity with delegated authority to manage, protect, and regulate sovereign submerged lands
- Florida Department of Environmental Protection (FDEP) is the primary resource Trustee in Florida
- In southeast Florida, the local County agency may serve as secondary resource Trustee
- **FDEP treats unpermitted reef injuries as proprietary violations, not regulatory violations** (Section 253.04, Florida Statutes , Chapter 18-14, Florida Administrative Code)

Responsible Party (RP)

- Owner, insurer, or other representative of the source (e.g. a vessel) of the reef injury



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

Initial Response

Reporting an Incident

- What (e.g. type of incident, location, name, size of vessel)
- To Whom (several agencies involved, single hotline recommended)

Interagency Coordination

- Essential to timely and efficient response
- Communication is key

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

Response

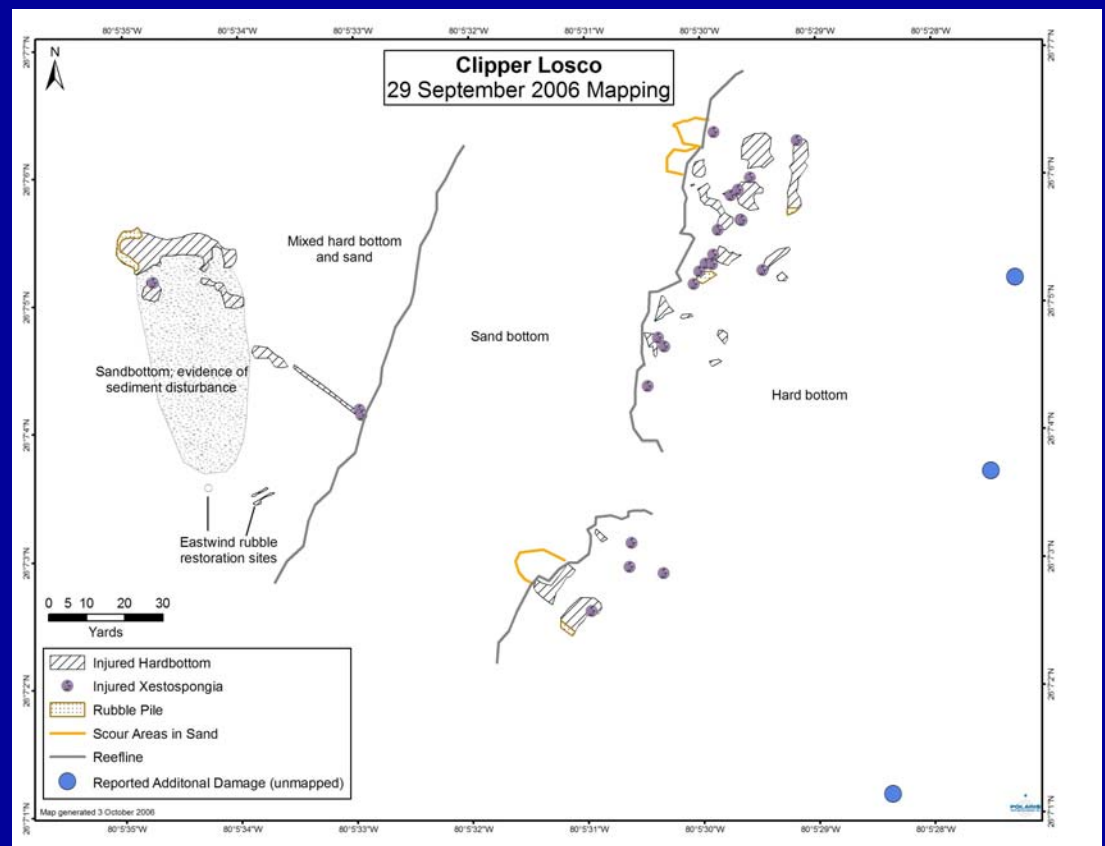
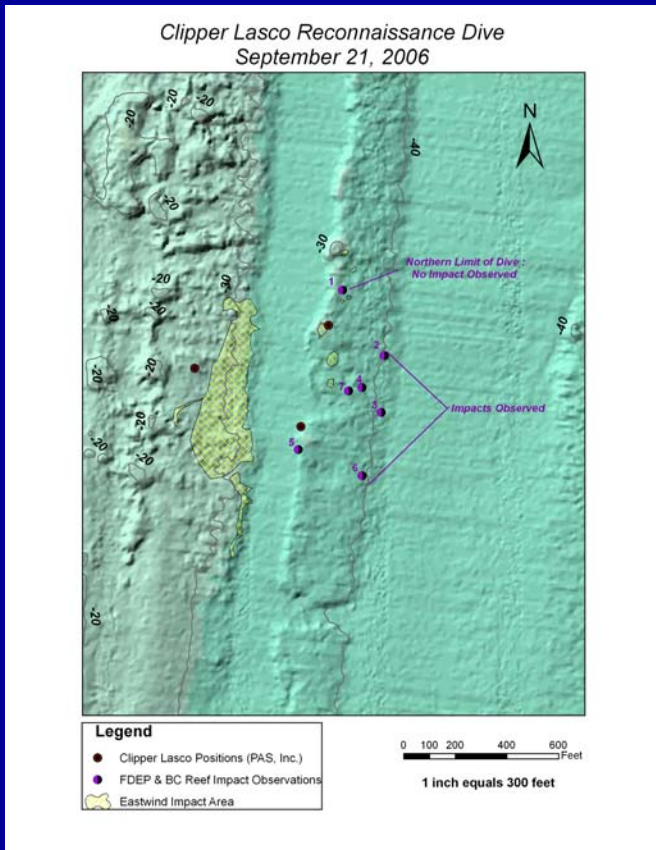
Trustee Responsibilities

- Coordinating communication among response agencies
- Determining identity of the RP, notifying the RP of possible violations of law, requesting cooperation of the RP
- Oversee initial site assessment, salvage operations and biological triage, and development of a primary restoration plan

RP Responsibilities

- Selecting and retaining a qualified contractor for assessment and restoration activities
- Obtaining any necessary permits, conducting a site assessment, mapping reef injuries, and carrying out triage and restoration plan activities

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



Initial injury area assessments conducted by the Trustee (left) and RP (right)

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

Response

Primary Restoration

- Funding (RP or Trustee)
- No-action
- Restoration Plan
 - Injury Assessment
 - Biological Triage
 - Debris Removal
 - Reef Framework Repair
 - Rubble Stabilization
 - Organism Reattachment
 - Mapping
 - Time Table
 - Reporting

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



Triage and restoration activities include caching live corals, removing paint, and reattaching salvaged organisms.

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

Post Response

Compensatory Mitigation

- Post Restoration Assessment
- Mitigation Assessment Using HEA

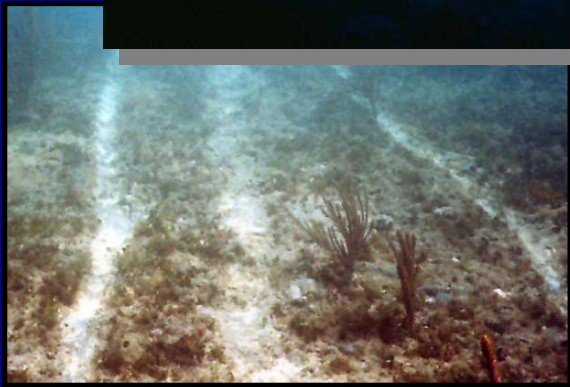
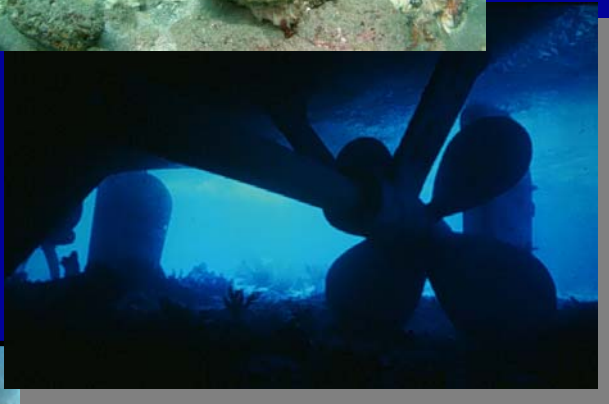
Monitoring Plan

- Structural Reconstruction
- Biological Recovery
- Reporting

Penalty Assessment

Maritime Industry & Coastal Construction Impacts (MICCI) Project 2

**Develop guidelines for rapid response to,
and restoration of, coral reef injuries
in southeast Florida**



Next Steps:

Nov 06 - Complete Draft Guidelines

Dec 06 - Public Review & Comment

Jan-Feb 07 - Review Comments
& Revise Draft as Needed

Spring 07 - Produce Final Guidelines

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:

Chantal Collier

FDEP Office of Coastal & Aquatic Managed Areas

Coral Reef Conservation Program

1277 NE 79th Street Causeway

Miami, FL 33138

Phone: 305-795-1208

Email: Chantal.Collier@dep.state.fl.us

