



# The Coastal Component: A Critical Part of Restoring the the South Florida Ecosystem

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# NOAA's Strategic Plan Goals

To achieve its mission, NOAA's focus through 2008 will be on four overarching goals:



1. Protect, restore, and manage the use of coastal and ocean resources through ecosystem-based management approaches.

2. Understand climate variability and change to enhance society's ability to plan and respond.

3. Serve society's needs for weather and water information.

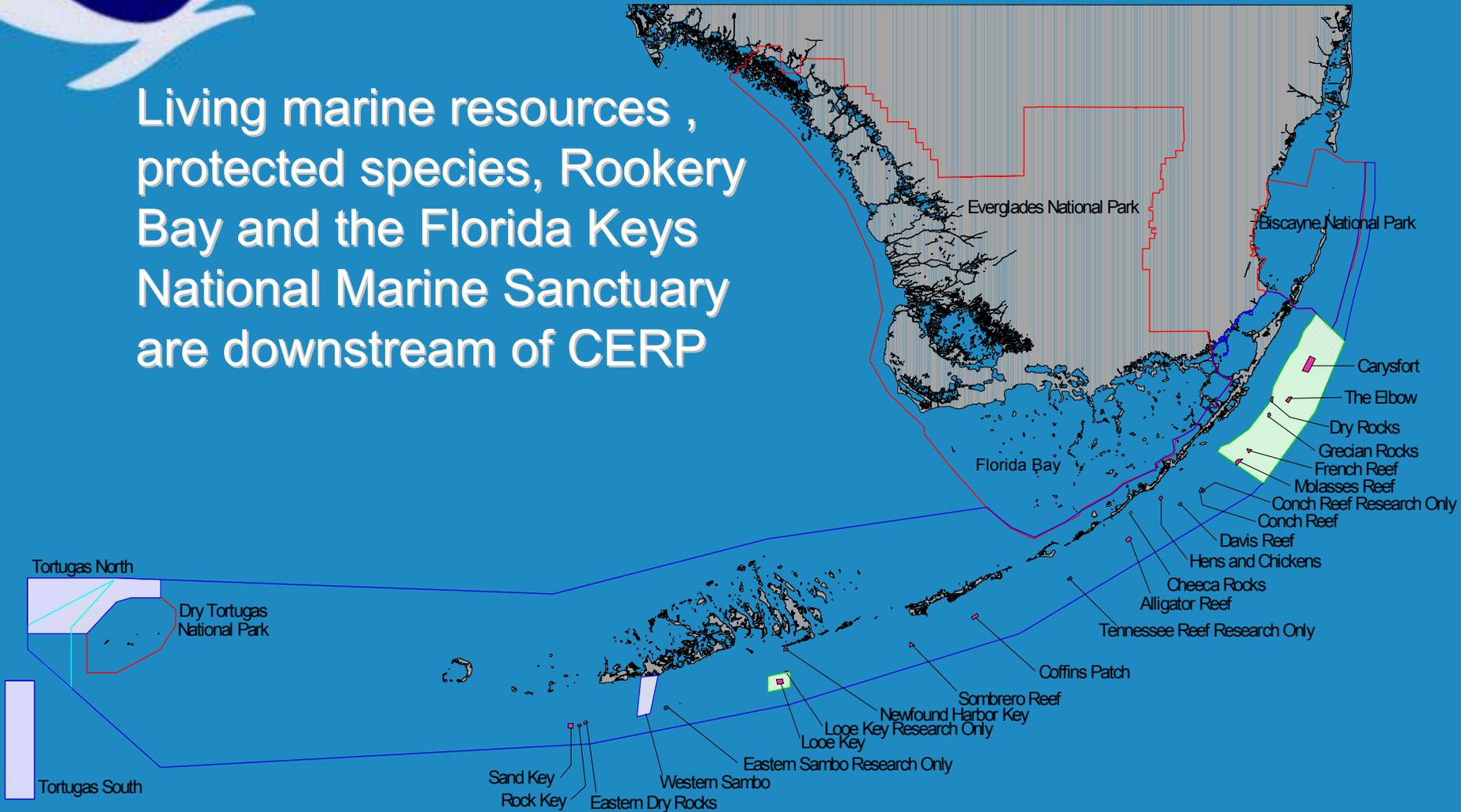
4. Support the Nation's commerce with information for safe and efficient transportation.



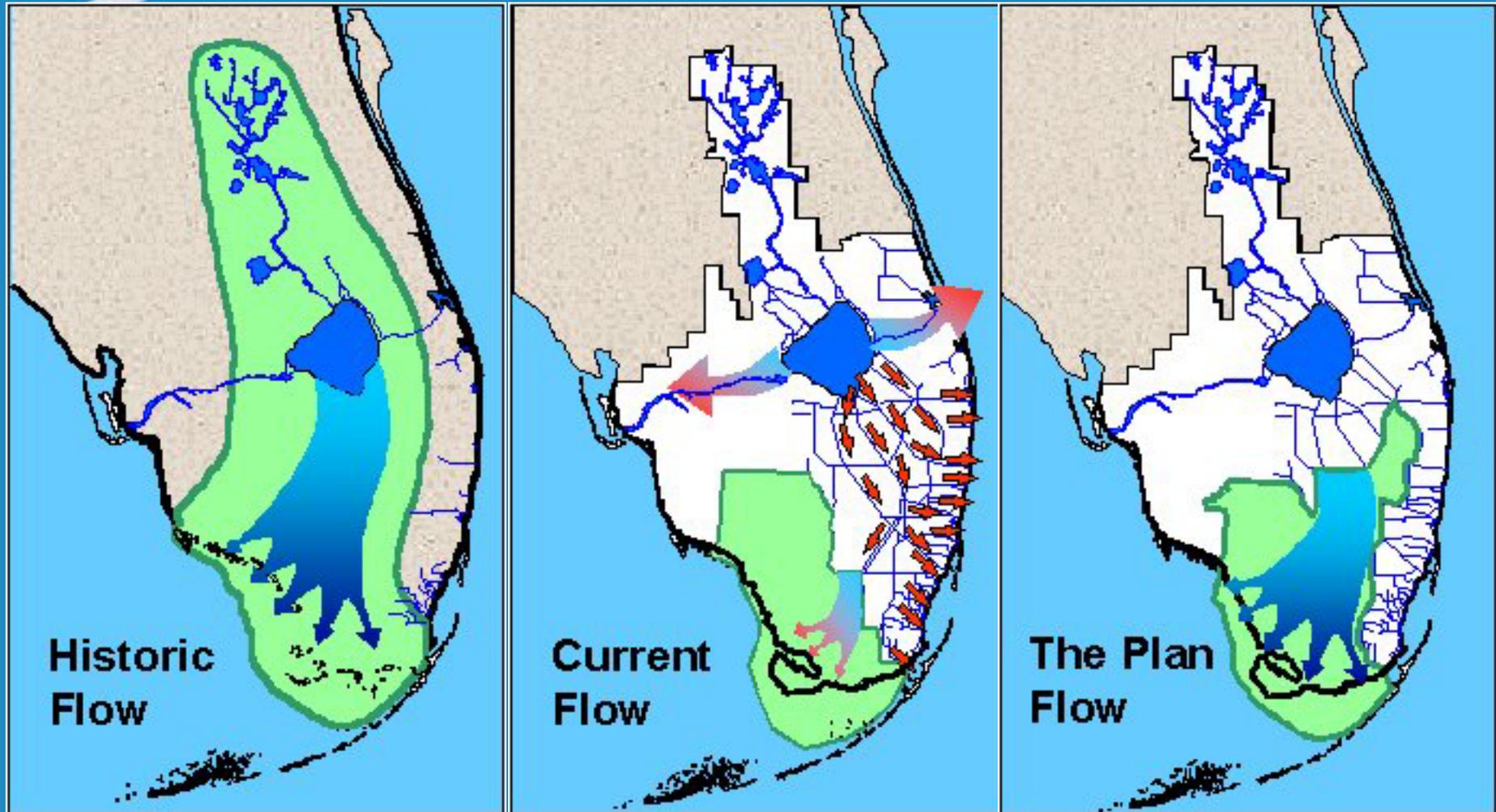
# NOAA's Trusteeships and Responsibilities

- NOAA Fisheries
  - Magnuson-Stevens Fishery Conservation and Management Act (FMCA) - 1976
  - Endangered Species Act (ESA) - 1973
  - The Marine Mammal Protection Act (MMPA) - 1972
- NOAA National Ocean Service
  - Florida Keys National Marine Sanctuary and Protection Act (FKNMSA)-1990
  - National Marine Sanctuaries Act (NMPA)-1972
  - Coastal Zone Management Act (CZMA) –1972
  - Coral Reef Conservation Act - 2000

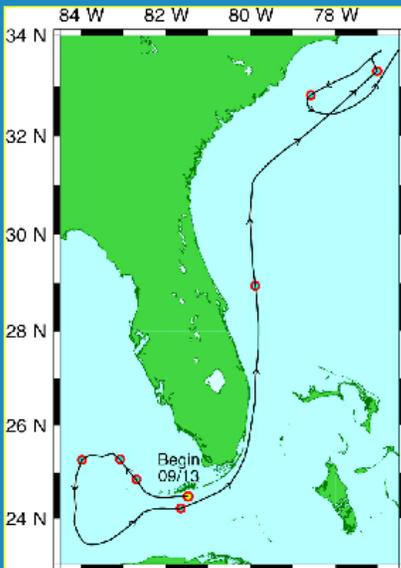
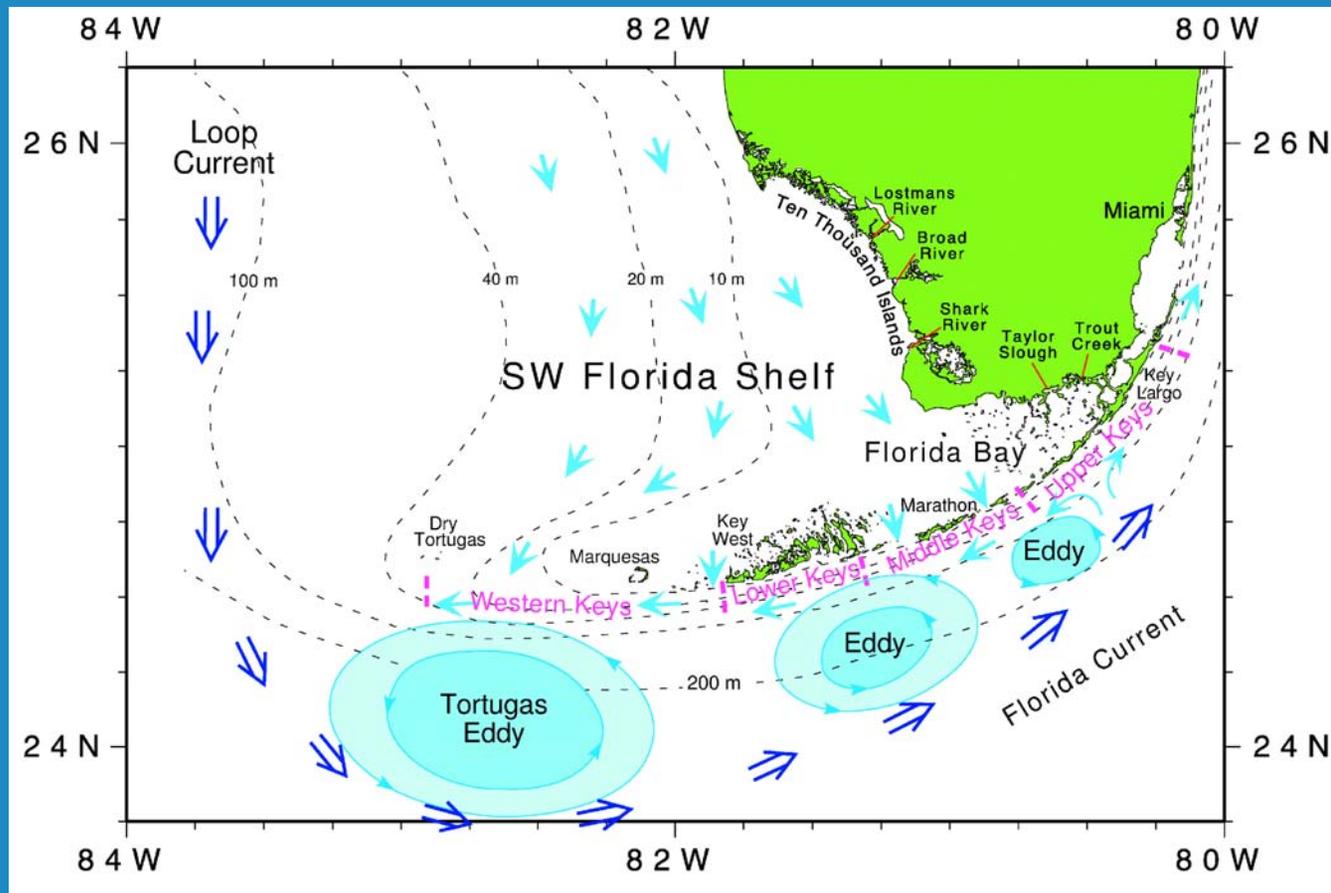
Living marine resources ,  
protected species, Rookery  
Bay and the Florida Keys  
National Marine Sanctuary  
are downstream of CERP



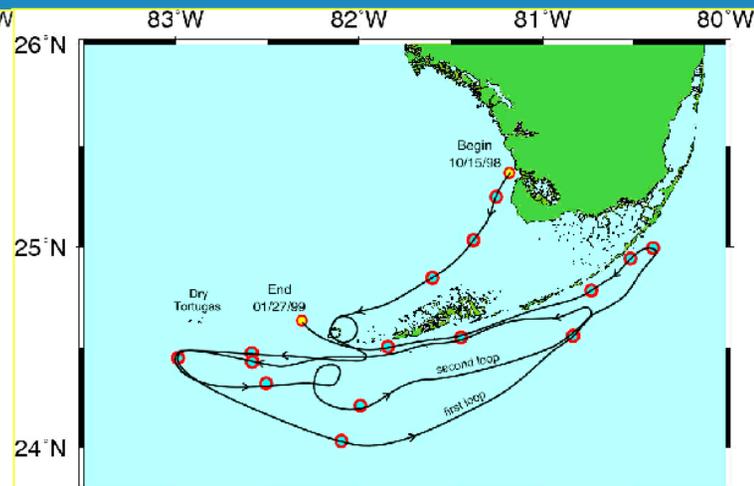
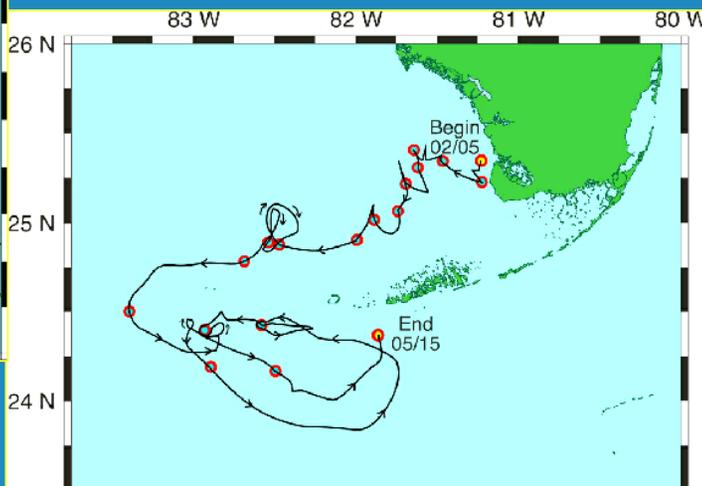
# Changes in water flow critical to restoring coastal and marine resources



Physical processes closely couple the entire S FL ecosystem.



Schematic circulation and satellite-tracked surface drifters



# Getting the Water Right is essential to Restoring the Coastal Ecosystem



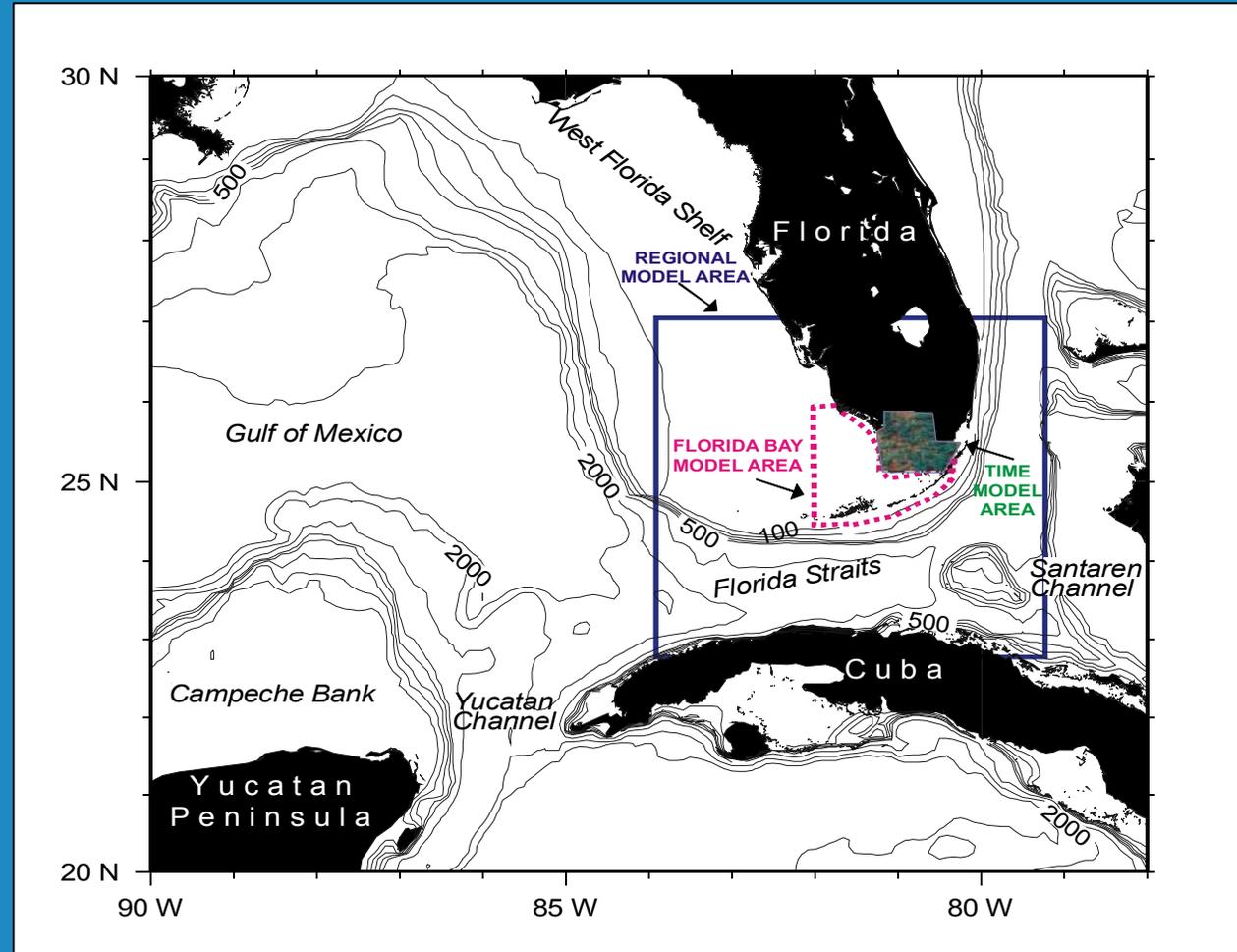
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- Predicting changes and/or effects of restoration on the coastal system requires models
  - Such models need to be supported by comprehensive data and observations
  - NOAA and others are addressing some of these needs

**BUT**

Additional needs exist; these can not be accomplished by a single agency

# The Florida Bay/Florida Keys Feasibility Study Physical Model Workplan

How can we improve ability to forecast impacts of inland projects on coastal resources?



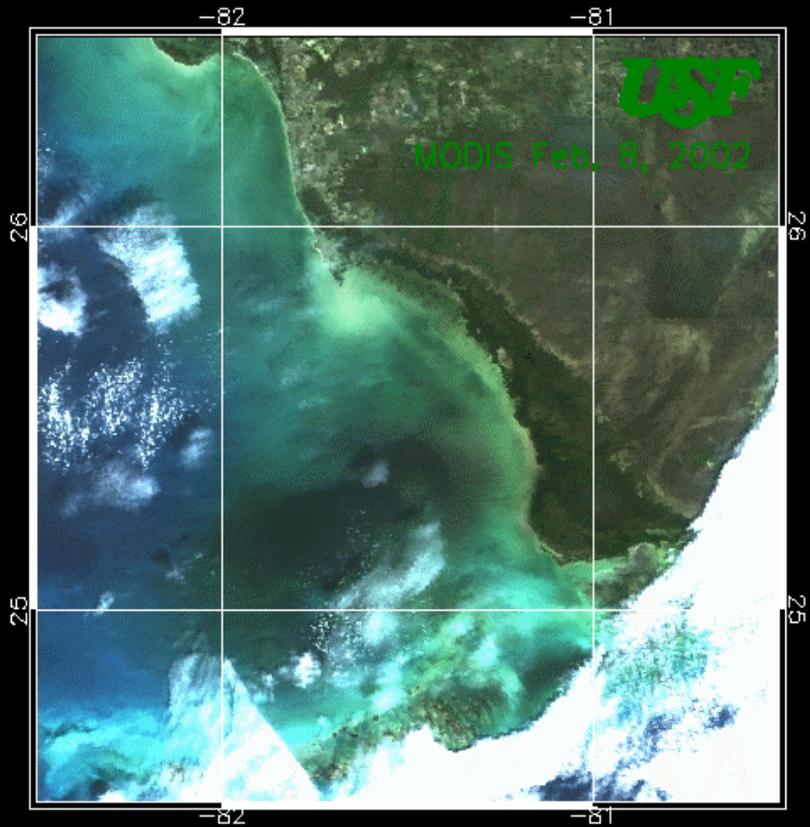
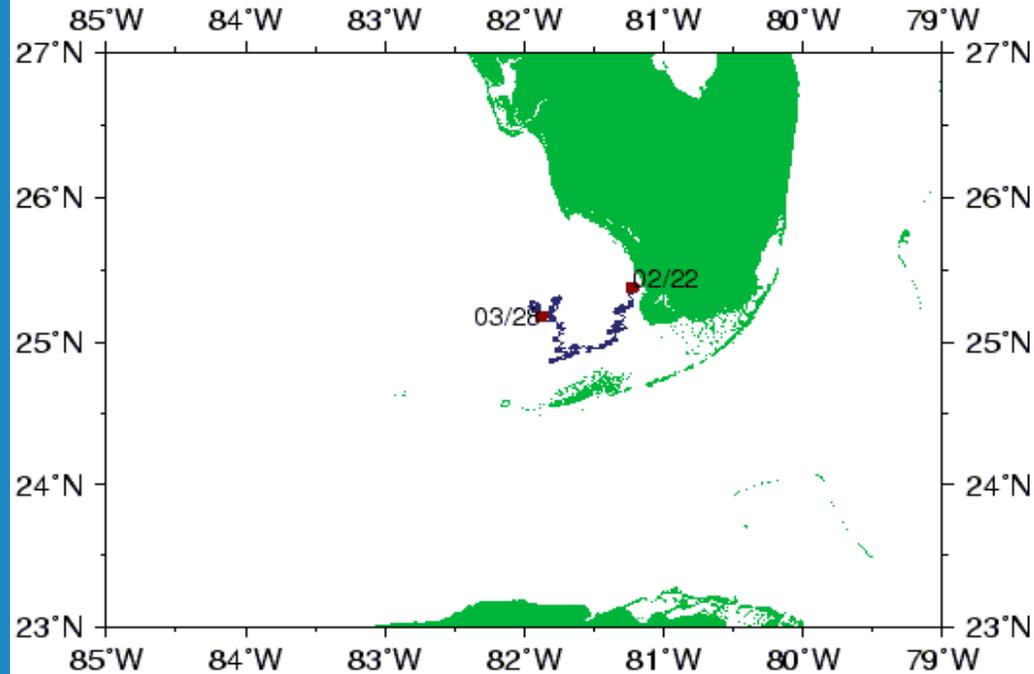
Regional Model - NOAA  
Inner Bay Model - SFWMD  
Coastal Hydrological Model- USGS



# **Understanding the Causes of Ecosystem Change Requires Commitment to Sustained Observations**

# Satellite Drifter

Drifter 29526 deployed 02/22 /2002  
dots along the track ~ every 24hrs  
last position at 03/28 /2002



True color image

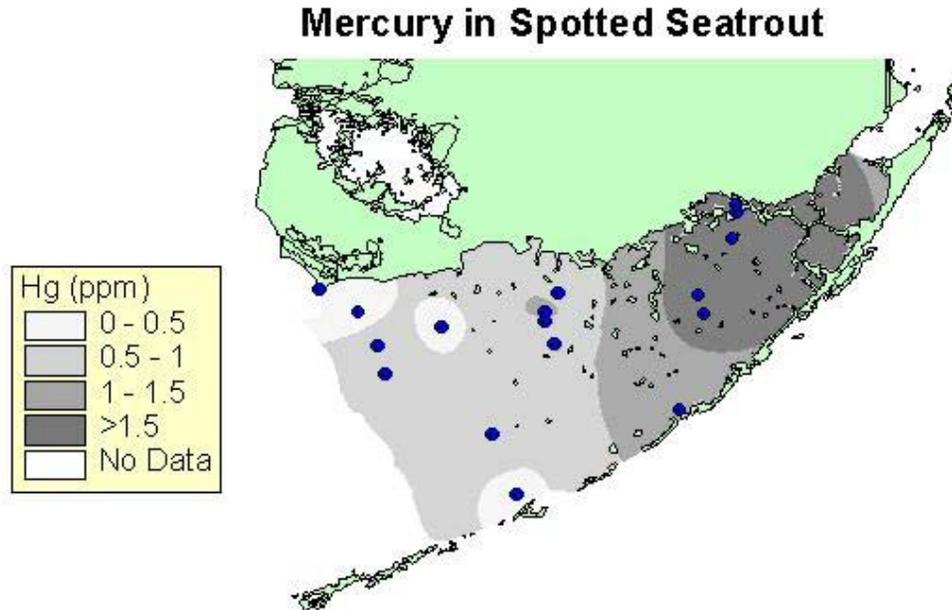
## Feb 2002 Blackwater Event



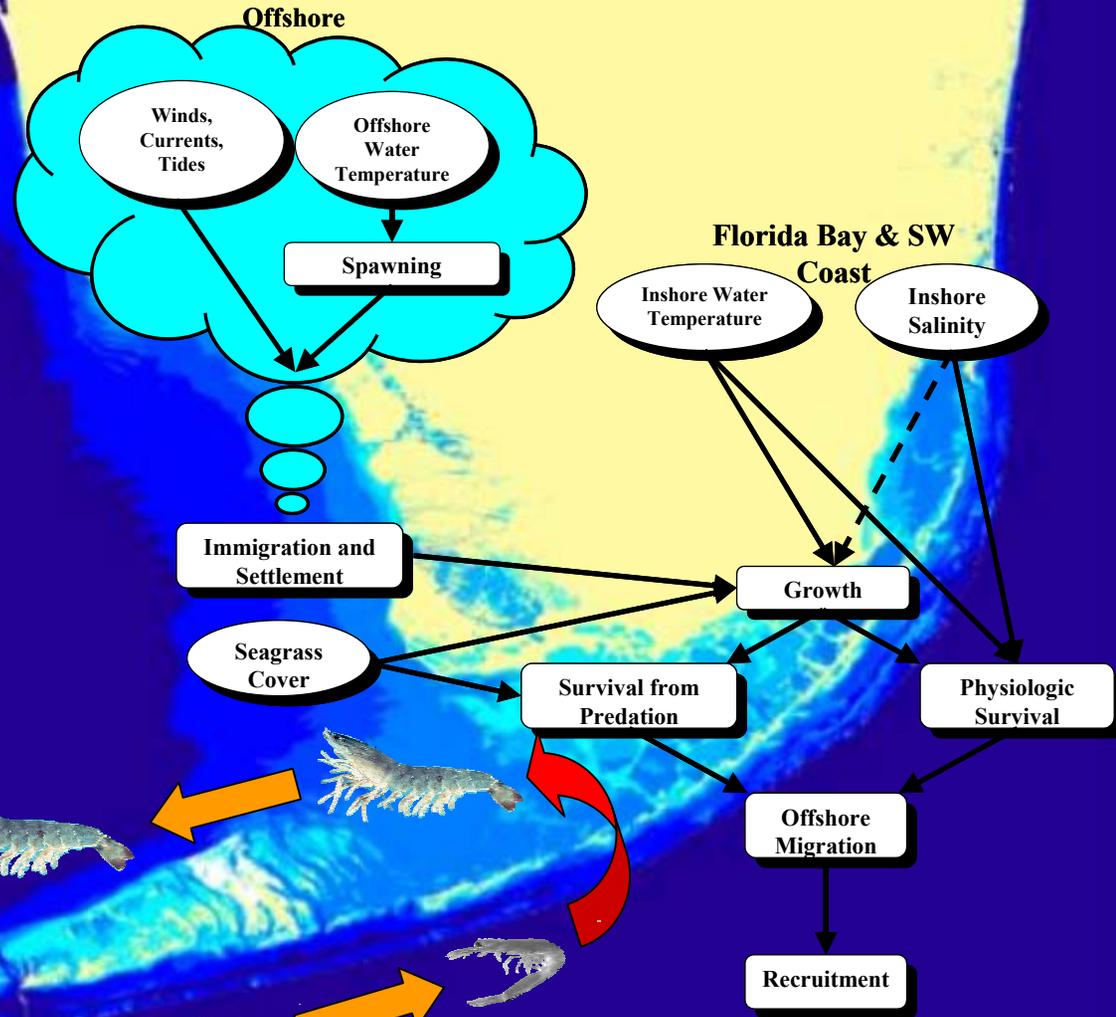
# Issues of NOAA Concern

- **Water Quality**
  - Nitrogen Stimulated Eutrophication
  - Mercury Concentrations in fish
  - Endosulfan (pesticides)
- **Living Marine Resources**
  - Pink shrimp recruitment and freshwater inflow
- **Critical Habitats**
  - Seagrass Beds
  - Coral Reefs
- **Public Misconceptions**
  - Florida Bay's Murky Past

# Impacts on Water Quality

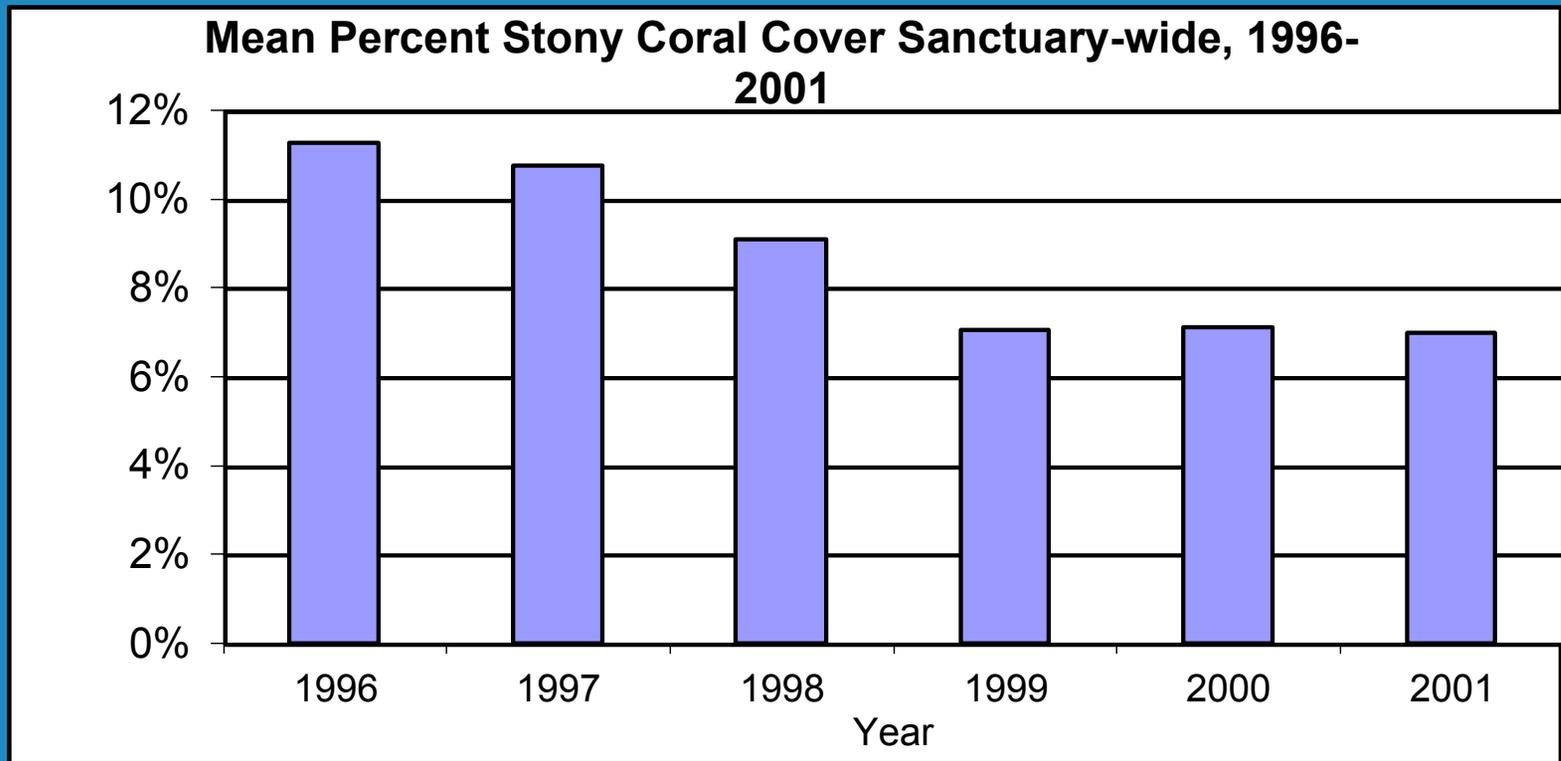


Pink shrimp spawn offshore near the Dry Tortugas and migrate onto nursery grounds in Florida Bay and nearby mangrove estuaries. When they grow up, they leave the nursery grounds for Tortugas spawning grounds.



Impacts on Living Marine Resources

# CERP impacts on Critical Marine Habitats?



# What is success? Possible Public Misconceptions





## RECOMMENDATIONS

1. Need to improve coastal monitoring to track and achieve SF Restoration
2. Need to improve modeling of coastal impacts to forecast and achieve SF restoration
3. Need to include more marine species and habitats as CERP goals, indicators and performance measures