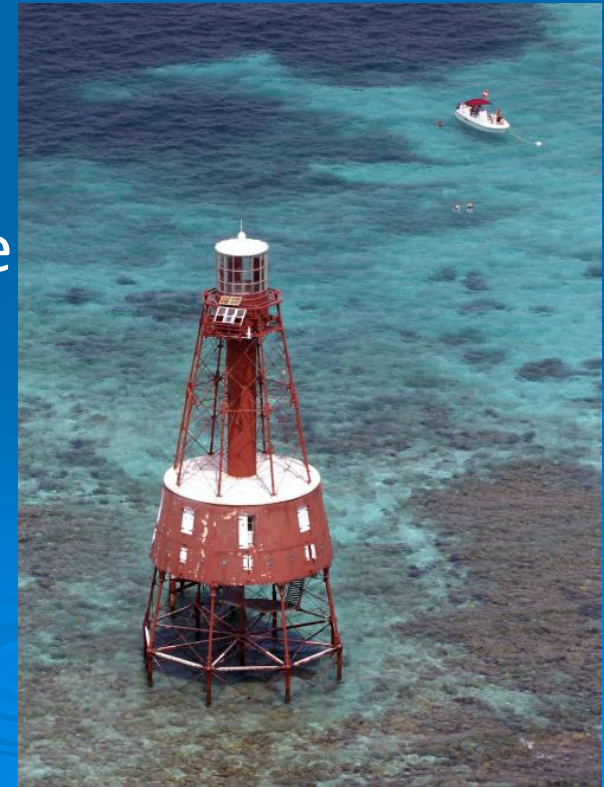


U.S. Environmental Protection Agency's Role in South Florida Water Management

South Florida Geographic Initiative (1995)

- Florida Keys National Marine Sanctuary's Water Quality Protection Program
- South Florida Ecosystem Restoration
- Southeast Florida Coral Reef Initiative



Florida Keys National Marine Sanctuary's Water Quality Protection Program

Brief History

1990. FKNMS Act- established Sanctuary. Congress directed NOAA to develop and implement a comprehensive management plan (1997)

- **Promote multiple uses**
- **Use marine zoning**
- **EPA and State of Florida develop and implement a WQPP**
 - Plan finalized 1996
 - First Sanctuary with a WQPP
 - Identify sources of pollution
 - Recommend corrective actions that address sources of pollution
 - Establish long-term status and trends monitoring – corals, seagrass, water quality (1995 – present)

Florida Keys National Marine Sanctuary's Water Quality Protection Program

Accomplishments

- **Established Steering Committee (state, federal, county, municipalities, NGOs, citizens- 24 members)**
- **Technical Advisory Committee (state, federal, university scientists)**
- **Funded 16 years monitoring (\$18 million)**
- **Funded 30 Special Studies on processes, causes, effects (\$2 million)**
- **Worked with state, county, municipalities**

Sanitary Wastewater Master Plan (2000)

Stormwater Master Plan (2001)

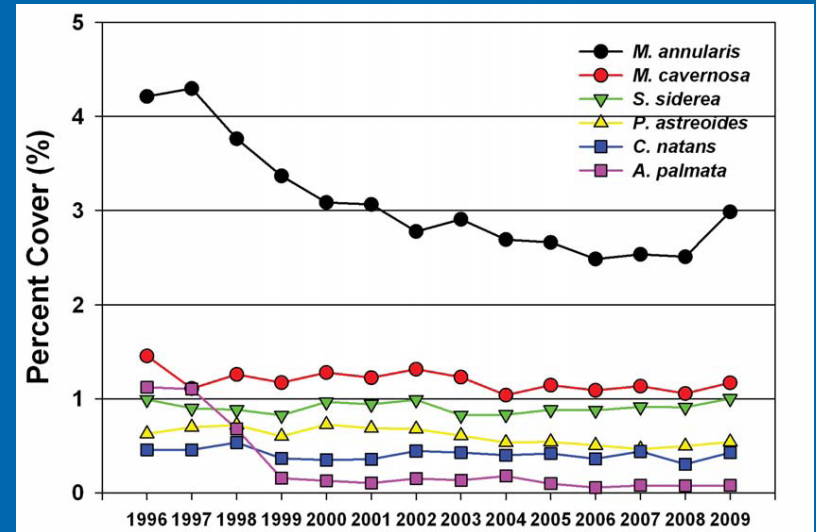
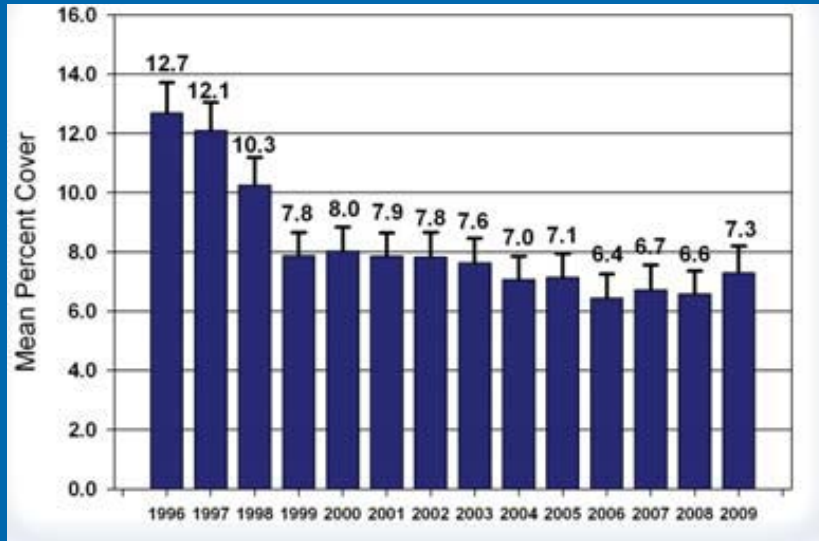
Carrying Capacity Study (2002)

Domestic wastewater improvements - 60% EDUs (\$488 million 2011)

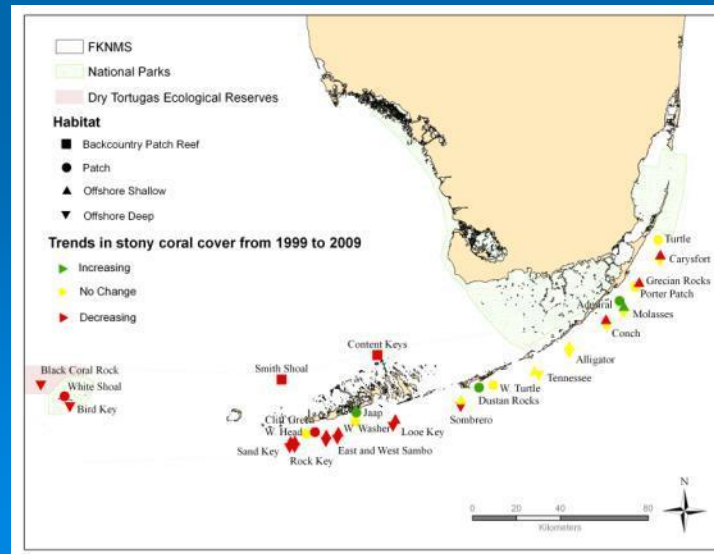
Vessel wastewater – NDZ state waters (2002)

NDZ federal waters (2010)

Water Quality Protection Program Findings

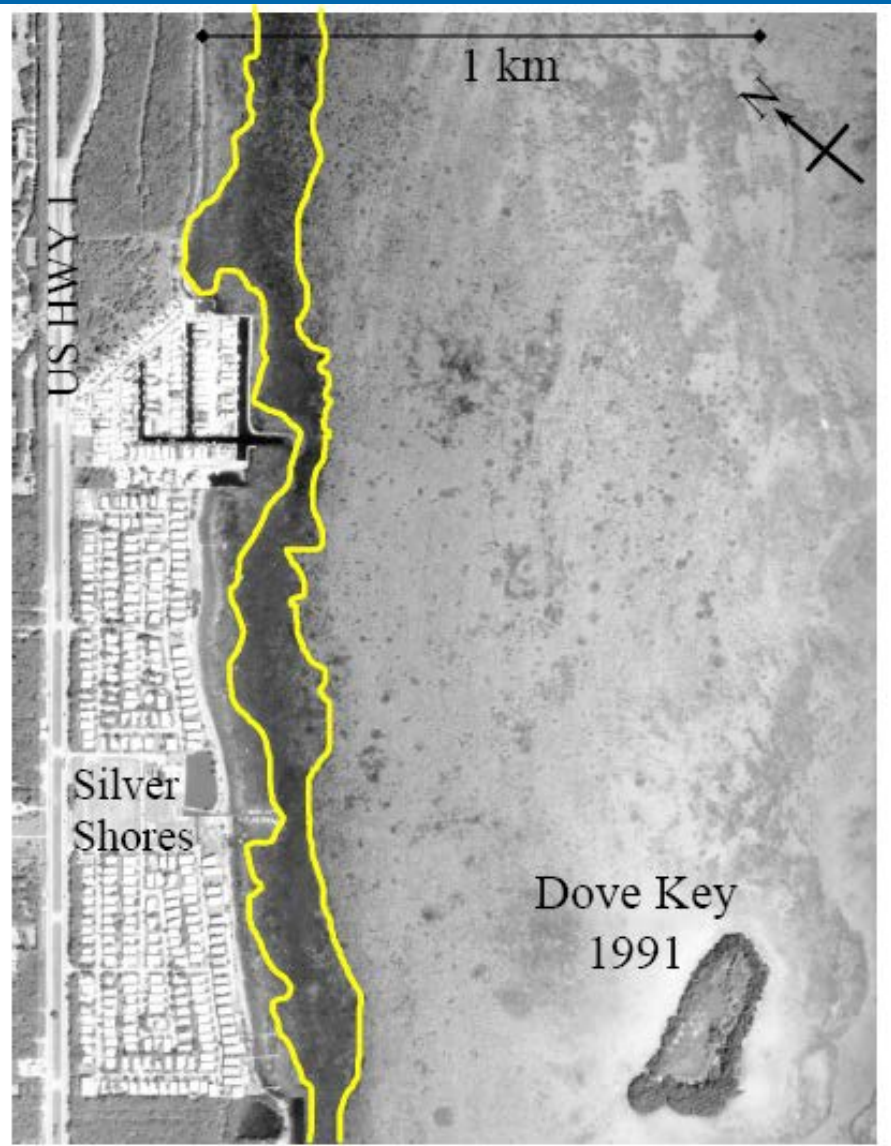


Bleaching events and hurricanes caused major declines since 1996.



Branching corals can appear and disappear quickly.

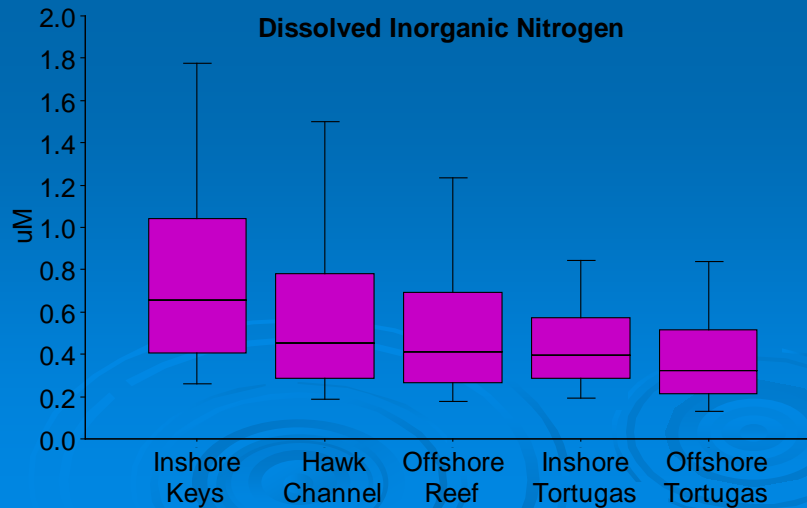
Most coral loss is in the Lower Keys and Dry Tortugas.



Seagrasses respond positively to increased development and runoff until a tipping point is reached and algae begin to dominate.



**Long, dead end
canals do not flush.
Low DO, high fecal
coliforms.**



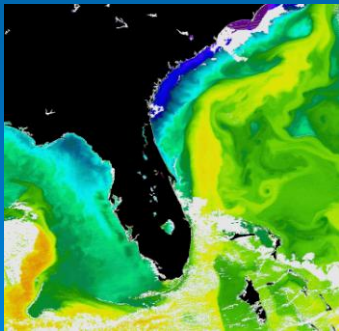
**Seagrass wrack can
load basins and
canals resulting in
low DO.**

**Land-based source
of nitrogen.**

Florida Keys National Marine Sanctuary's Water Quality Protection Program

Gaps

- Loss of funding (2011= 50% 1996)
- Miss episodic events
- Etiology of coral diseases
- Identification of indicator species
- Health of Florida Keys Reef Tract dependent on regional and global events
 - Address global warming , coral bleaching, ocean acidification



Health of Florida Keys Reef Tract can be influenced by far-field sources.



There are a lot of knowledge gaps on coral resiliency to bleaching and disease.

South Florida Ecosystem Restoration

EPA's Role:

Work with the State of Florida and others to make sure the provisions/requirements of the Clean Water Act are adequately addressed.

- Optimize quantity, quality, timing, and distribution of freshwater.
- Protect downstream components of the ecosystem- Florida Bay and Florida Keys reef tract.
- Raise awareness that South Florida Ecosystem Restoration is more than Everglades restoration.

Southeast Florida Coral Reef Initiative

Brief History

1998. Coral Reef Task Force established to protect coral reefs

2002. Florida established SEFCRI Team (58 partners- state, federal, local, university, NGO, industry). Martin to Miami-Dade Counties

Goal

Develop Local Action Strategies to identify and reduce threats to corals

- Land-Based Sources of Pollution (EPA guidance and funding \$750K)
- Maritime Industry
- Fishing, Diving, and Other Uses
- Awareness and Appreciation

Corals in southeast Florida are close to shore, major metropolitan centers, and inlets. The size of the watershed and the volume of wastewater is huge compared to the Keys.



Southeast Florida Coral Reef Initiative

LBSP Focus Team

Goal- Develop best management practices to limit pollution to nearshore waters

- Modeled after FKNMS WQPP
- Has Technical Advisory Committee
- Characterize extent and condition of corals (SECREMP)
- Characterize and quantify point and non point sources of pollution
- Investigate cause and effect of pollution on coral abundance and health

Accomplishments - are ongoing

- Benthic habitat maps
- Developing biomarkers
- Monitoring: water quality - inlets, groundwater, surface waters, corals

The Future is of EPA's role in south Florida is uncertain

- **Loss of funding to EPA's SFGI (50%)**
- **Retirements and loss of positions**
- **Closing of the EPA South Florida Office**

Plea for Help

- **Continue world-class science program; emulated by others**
- **Sound science leads to Informed management**
- **Informed management required to maximize resource health**
- **Economy and jobs depend upon healthy resource**

Tropical Connections

South Florida's marine environment

William L. Kruczynski and Pamela J. Fletcher, Editors



- EPA – Florida Sea Grant project
- Fact page format for lay readers
- 162 authors
- Corals and Hardbottoms
- Seagrass
- Mangroves
- Management, Research, Monitoring Recommendations
- Annotated Further Reading
- Available November 2011 from ian.umces.edu/press

