South Florida Coastal Marine Ecosystem

AND ITS WATERSHED

Joint SEFSC-SERO-OAR-CRCP
Nomination for
SE US Habitat Blueprint Area

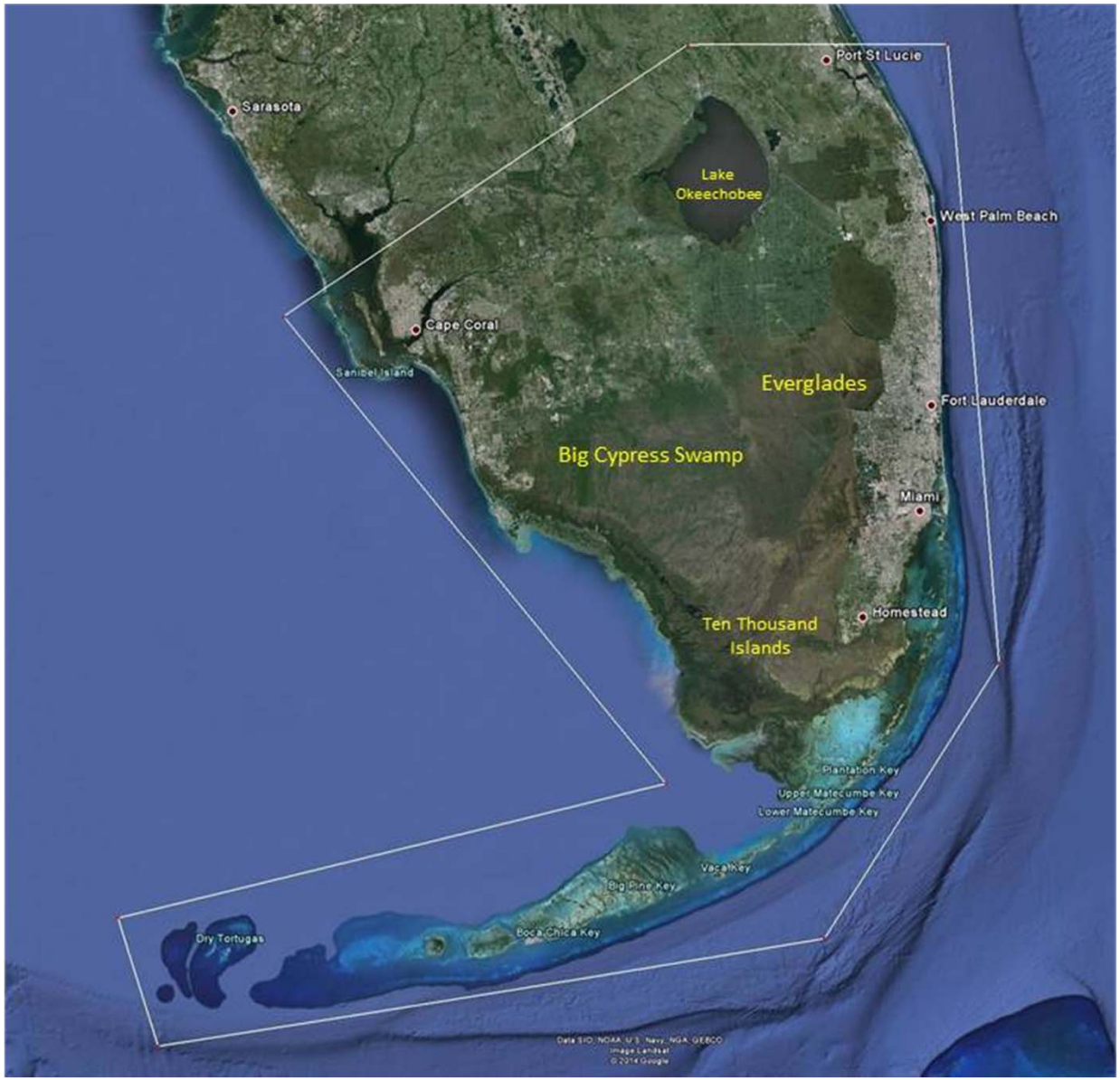
NOAA HABITAT BLUEPRINT INITIATIVE

- Selected areas for targeted habitat conservation efforts

- Framework for NOAA
  - to think strategically across programs, with partners both within and outside of NOAA, to counter loss of irreplaceable coastal habitat and improve habitat for fisheries, marine life, and coastal communities.
  - to increase the effectiveness of efforts to improve habitat and increase economic, cultural, and environmental benefits.

NOAA HABITAT BLUEPRINT INITIATIVE

- **NOAA Habitat Blueprint** is about NOAA accomplishing more and better habitat protection and restoration through **improved information sharing and collaboration** among NOAA agencies and with partners.
- The **NOAA Habitat Blueprint** was developed to build on existing programs, prioritize NOAA activities, and guide future actions--simply **improving the way NOAA does business**.



South Florida Coastal Marine Ecosystem and Its Watershed

<u>Components:</u>

Florida Reef Tract

Florida Keys National Marine Sanctuary

Reef Tract North to St. Lucie Inlet

Indian River Lagoon South

(incl. St. Lucie River Estuary)

Charlotte Harbor (southern)

Ten Thousand Islands

Everglades National Park

(incl. Florida Bay, Whitewater Bay)

Biscayne National Park

Dry Tortugas National Park

Biscayne Bay Aquatic Preserve

Big Cypress Preserve

Everglades Water Conservation Areas

Lake Okechobee

This proposed HBA is large, but it is united by the integrated hydrologic flow from one watershed

- Water management and the restoration effort are primarily the responsibility of the U.S. Army Corps of Engineers and the local sponsor, the South Florida Water Management District (SFWMD).
- The Corps and the District are implementing the Comprehensive Everglades Restoration Plan (CERP) as a framework to restore, preserve, and protect the South Florida ecosystem.
- Other Federal and State agencies contribute to the planning, information development and science-based adaptive management process guiding CERP.

Major Habitat Issues in Coastal Waters

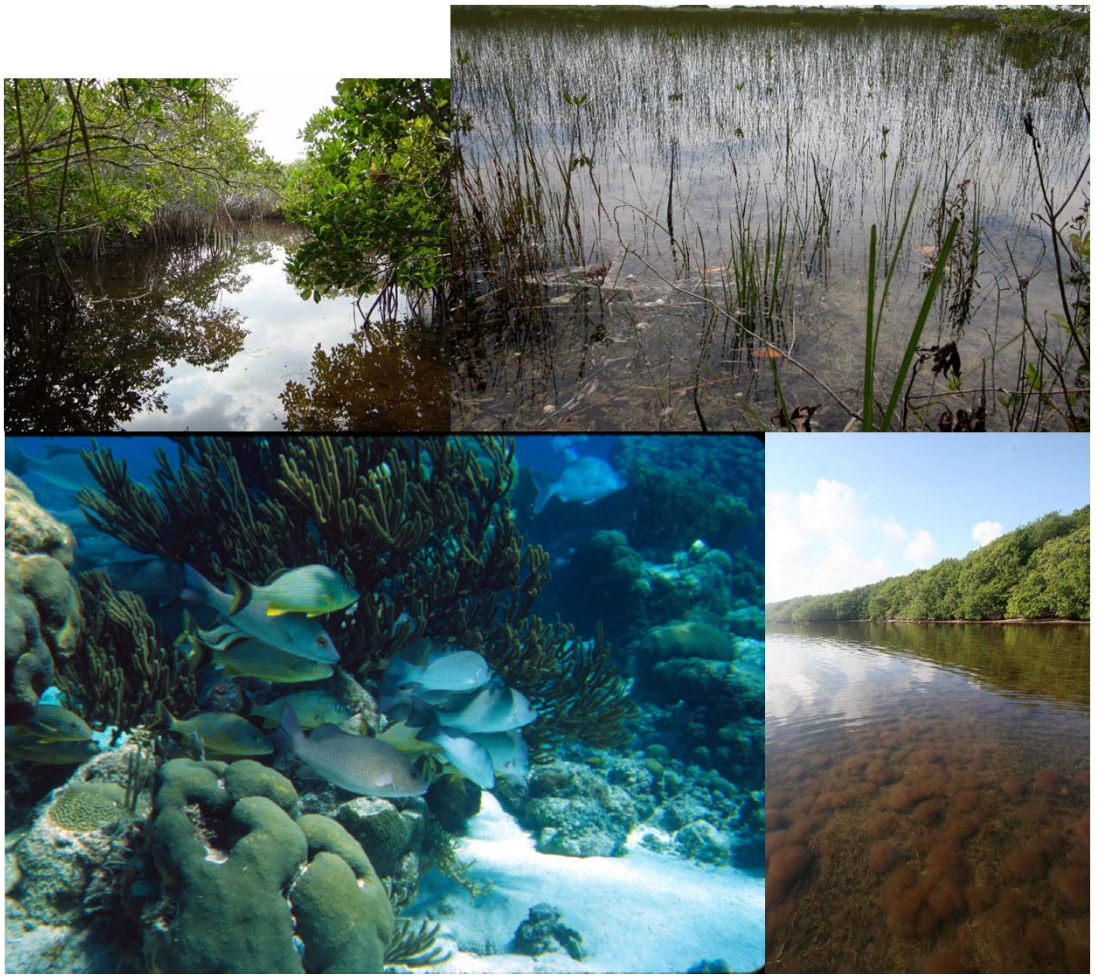
- Loss of coral cover and structure, coupled with little visible natural coral recruitment or coral reestablishment from fragments
- Loss of nursery and other essential fish habitat, including seagrass, mangrove, and reef
- Degraded water quality
- Overfished stocks and stocks experiencing overfishing
- Imperiled (especially, ESA listed and proposed) coastal marine species

Threats

- Pressures of human population growth (expected 1.5-2x Florida average)
- Altered quantity, timing, and distribution of freshwater inflow (canals, levees, control structures)
- Water pollution from nutrients and contaminants (canals, ocean outfalls)
- Introduction and expansion of invasive non-native species (lionfish)
- Expanding and higher impact tourism (cruise ships, personal water craft, anchorage)
- Coastal development and beach renourishment (shoreline hardening and degradation of beach habitat)
- Physical damage to habitat (dredging, groundings, gear)
- Sea-level rise

Principal objective:

- Build upon existing multi-agency management framework and use of sound science to…
- conserve and restore marine habitat structure and function and
- the health and productivity of fisheries … and to
- protect and recover protected species and
- restore biological diversity.



Current activities:
high likelihood of significant progress in 3-5 yr

- Engaging in freshwater management activities affecting coastal waters (i.e., project design evaluation, science planning, monitoring, assessment, benefits predictions, and adaptive management in CERP (NMFS/SEFSC, OAR/AOML)
- Supporting state and local partners in organizations that promote coral reef conservation, research, and restoration (NOS/NMS,CRCP,CZM; NMFS/SEFSC)
- Developing and monitoring performance measures to protect and restore Biscayne Bay and Florida Bay by assessing CERP effects (NMFS/SEFSC; OAR/AOML)
- Providing Reef Fish Visual Census (RVC) data to stock assessment scientists to support SEDAR single species fishery stock assessments and Allowable Catch Limits (ACLs) (NMFS/SEFSC)
- *Acropora* monitoring, recovery characterization, larval reproduction, and evaluation of reef restoration effectiveness (field and lab studies) (NMFS/SEFSC,SERO,RC)
- Characterizing ocean outfall effluent and dispersion patterns (OAR/AOML)

Planned activities with high likelihood of significant progress within 3-5 yrs:

- Engage in adaptive management in CERP to promote more effective management of freshwater inflow to essential fish habitat in Biscayne Bay, Florida Bay, and the Ten Thousand Islands (NMFS/SEFSC, OAR/AOML)
- Increase capacity (more listed species) in coral restocking (NMFS/SEFSC,SERO,RC)
- Develop coordinated program for responding to major events (monitoring, assessment, mitigation)
- Develop mitigation methods to rescue/revive imperiled corals and encourage colonization by reef-building corals (NMFS/RC,SEFSC)
- Assess effects of Marine Protected Areas on fish communities and the ecosystem using reef fish visual census methods (RVC) (NMFS/SEFSC)
- Collaborate with federal, state, and local partners to better integrate water management planning in CERP with coastal marine resource planning and issues (NMFS/SEFSC,SERO;OAR/AOML)

Planned activities with high likelihood of significant progress within 3-5 yrs:

- Work with partners to expand RVC/NCRMP fish monitoring to northern limits of Florida reef tract (NMFS/SEFSC)
- Determine habitat requirements and connections between habitats affecting fishery and protected resources at all life stages, and identify spawning sites and times (NMFS/SEFSC)
- Determine factors influencing algal blooms in Biscayne Bay, Florida Bay, and the reef tract (OAR/AOML).
- Increase capacity (more listed species) in coral restocking (NMFS/SEFSC,SERO,OHC)
- Develop coordinated program for responding to major events (monitoring, assessment, mitigation)
- Develop mitigation methods to rescue or revive imperiled corals and encourage colonization by reef-building corals (NMFS/RC,SEFSC)

Existing and Anticipated Cross NOAA Opportunities for Collaboration

NMFS/SEFSC
NMFS/SERO
NMFS/RC
OAR/AOML
NOS/CRCP
NOS/NMS
NOS/NERR
NWS
NHC
NOS/NCCOS
ORCM/CZM
NOAA Cooperative Institute for Marine and Atmospheric Studies (UM/RSMAS, Nova SEUOI, FIU)

Leverage NOAA Investments Consistent with Regional Initiatives

- Florida Keys National Marine Sanctuary
- Coral Reef Conservation Program (CRCP)
- South Florida Coral Reef Evaluation & Monitoring Program (SECRMP)
- South Florida Coral Reef Initiative
- Rookery Bay National Estuarine Research Reserve (RB-NERR)
- NOAA involvement in CERP since inception
- Ongoing coral research
- Integrated Ecosystem Assessment (IEA)
- NOAA Cooperative Institute for Marine and Atmospheric Studies (UM/RSMAS, Nova SEUOI, FIU)

High potential for success

Collaborative efforts underway

Support community and management structure in place or developing

Substantial research building understanding to guide strategic new research

Substantial reef habitat mapping already performed

Socioeconomic factors already considered

Acknowledgments

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