

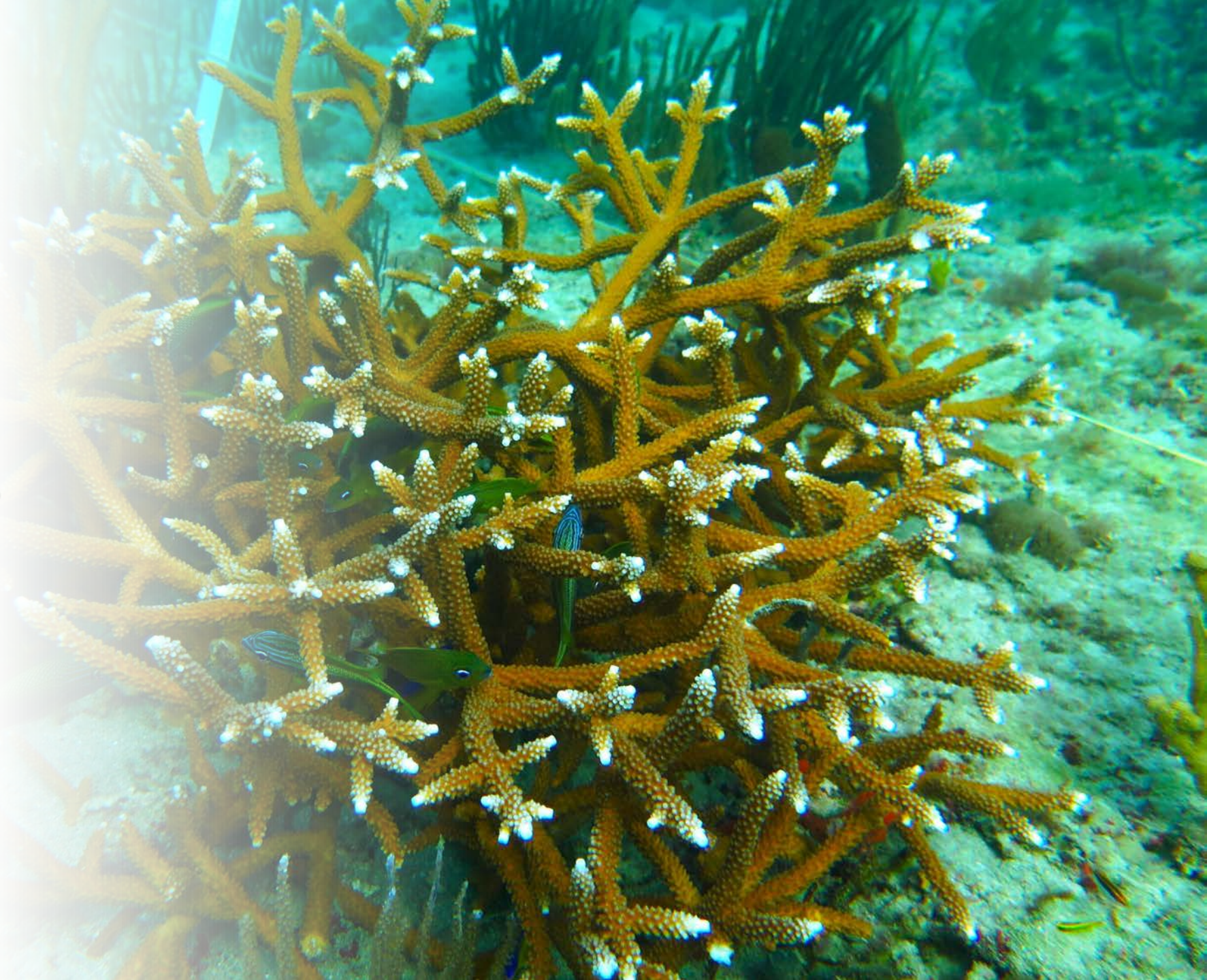


Coral Reefs - Health Status

CLIMATE CHANGE TASK FORCE MEETING

February 1, 2024

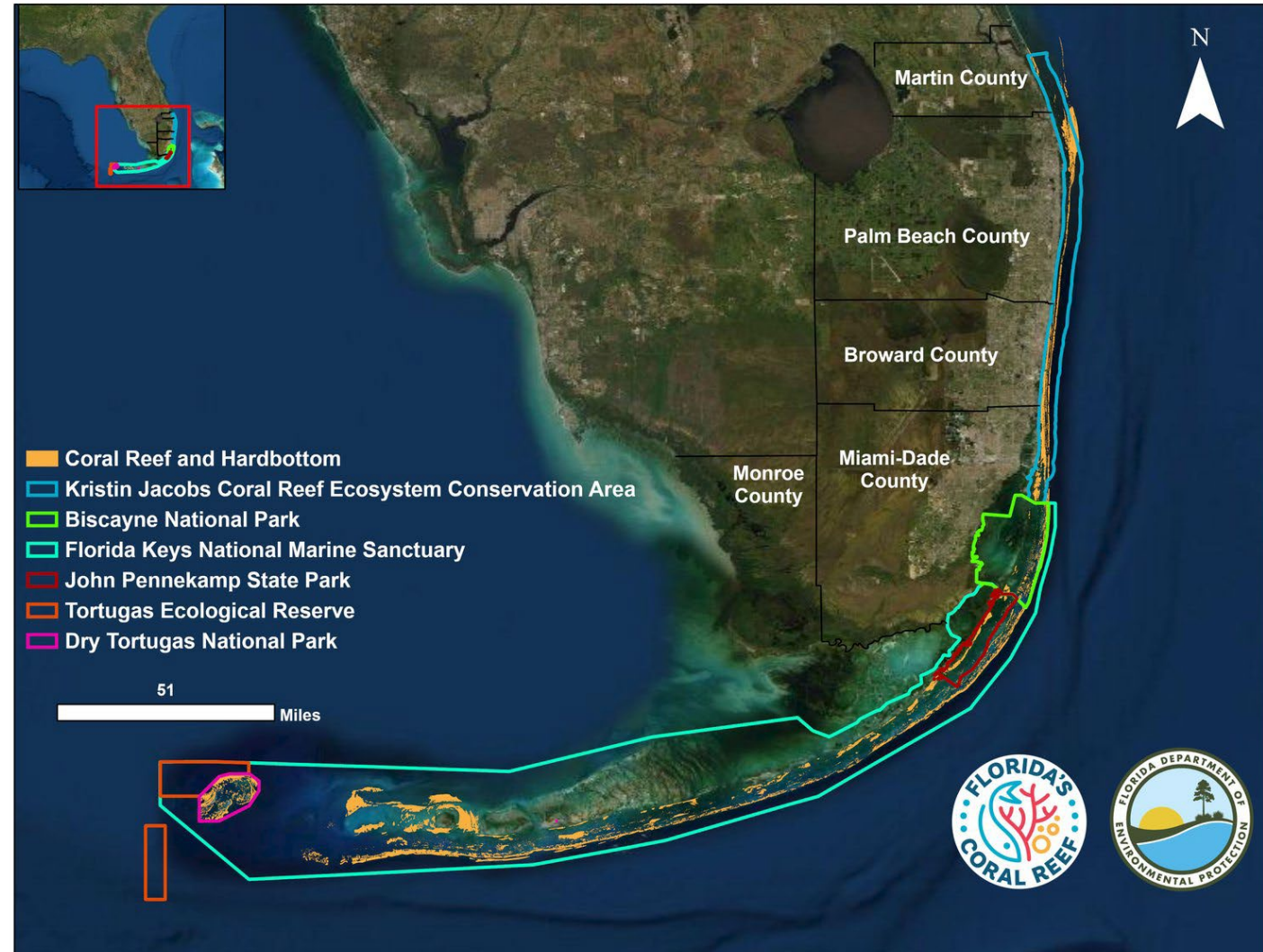
Florida's Coral Reef



BACKGROUND

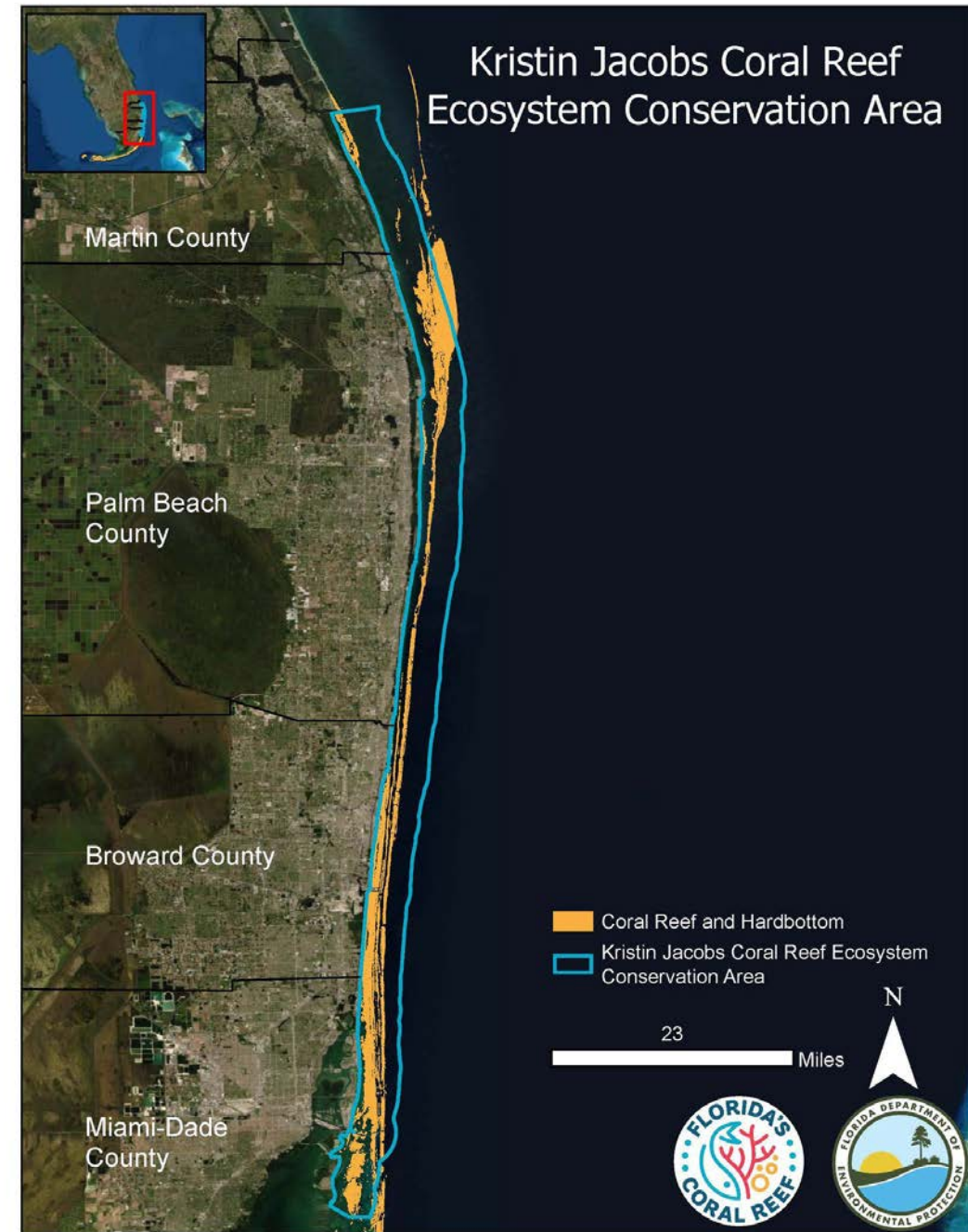


- Florida's Coral Reef stretches approximately 350 miles from the Dry Tortugas, north to St. Lucie Inlet in Martin County
- Managed areas including a Reserve, National Parks, State Parks, Sanctuary, and Conservation Area
- Unique shallow water coral reef system in the continental US in subtropical waters
- The reef formed more than 8,000 years ago
- Periods of growth and periods of no new growth



KRISTEN JACOBS CORAL REEF ECOSYSTEM CONSERVATION AREA (KJECA)

- Formerly known as the Southeast Florida Coral Reef Initiative (SEFCRI) area
- Established on July 1, 2018
- Conservation area that covers 105 miles of the northern portion of Florida's Coral Reef
- Overseen by Florida Department of Environmental Protection's Coral Reef Conservation Program
- Sets the stage for region-wide coordination, management, and restoration activities



KRISTEN JACOBS CORAL REEF ECOSYSTEM CONSERVATION AREA (KJECA)



Potential Designation of the KJECA as an Aquatic Preserve

Language from the Florida Aquatic Preserve Act (258 *F.S.* and Chapters 18-20 *F.A.C.* and 18-21 *F.A.C.*)

IMPACT

- Oil and gas explorations

MINIMAL IMPACT

- Public interest justification
- Docks and Seawalls
- Dredging and Beach Nourishment
- Utilities Cables and Pipes
- Artificial Reef Program

NO IMPACT

- Ports and Navigation Projects
- Fishing Regulations and Fishing
- Current permit and submerged land leases for projects
- Aquaculture activities

BENEFITS

- Federal and state funding would be funneled into conservation and restoration of coral reefs within the ECA
- One regional management plan that outlines strategies and goals to protect natural resources and increase fisheries
- Increase in water quality monitoring and funding for water quality projects

AQUATIC PRESERVE

- Covers only lands or water bottoms owned by the state
- Privately owned lands or water bottoms are excluded.
- Ports and navigation channel or other public works project authorized by the United States Congress are excluded from the aquatic preserves
- No dredging and filling of submerged lands except: minimum dredging and filling for public navigation, creation and maintenance
- Pathway for local governments to both permit and assist in compliance and enforcement of regulations through a delegation program
 - Other alteration of physical conditions as may, in the opinion of the trustees, be necessary to enhance the quality or utility of the preserve or the public health generally.

Fall under
"Outstanding Florida
Waters"

Allow construction, repair,
replacement, or rehabilitation of
docks, seawalls, breakwaters,
piers, though permitting -
standards differ

Require the development,
use, and regulation of
management practices

Prohibit oil and
gas exploration

MARINE SANCTUARY

- The National Marine Sanctuaries Act authorizes feds to designate and protect areas of the marine environment with special national significance as national marine sanctuaries.
- All activities (e.g., fishing, boating, diving, research, education) may be conducted unless prohibited or otherwise regulated in the site-specific regulations.
- Permitting handled internally by local office for the Marine Sanctuary to balance recreation, research, and conservation.
- Special Use Permits, generally for commercial use
- Permit Research and Education activities through permitting. Activities involving sanctuary needs are prioritized.
- Hyper-localized and site specific language used in legislation

FLORIDA'S CORAL REEF ADJACENT TO BROWARD COUNTY



- Broward County coastline is 24 miles long
- Three parallel reef tracts as well as critical nearshore habitat
 - Ridge Complex (Nearshore Hardbottom)
 - Inner Reef
 - Middle Reef
 - Outer Reef

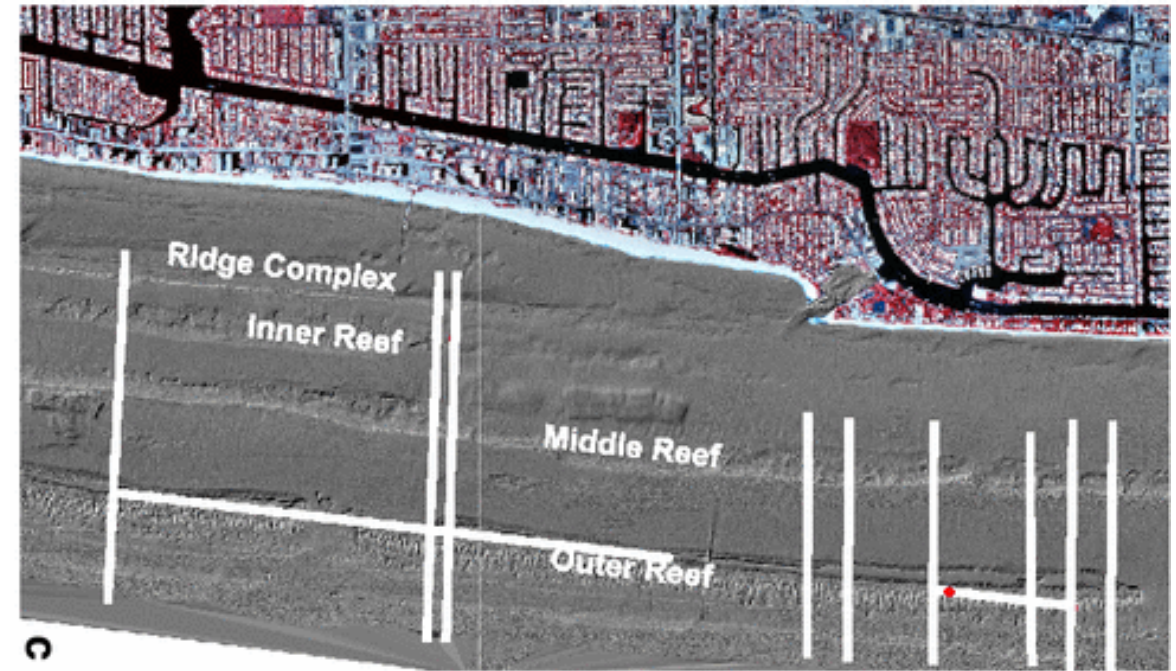


Image: Broward County



Image: Broward County



Image: NOAA



Image: A Delaney

IMPACTS TO CORAL REEFS



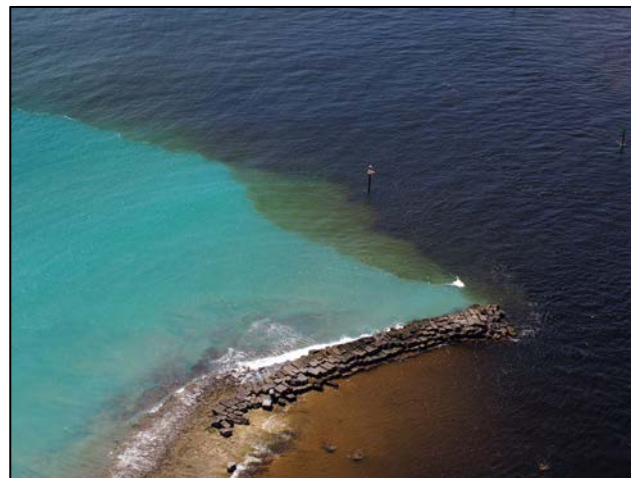
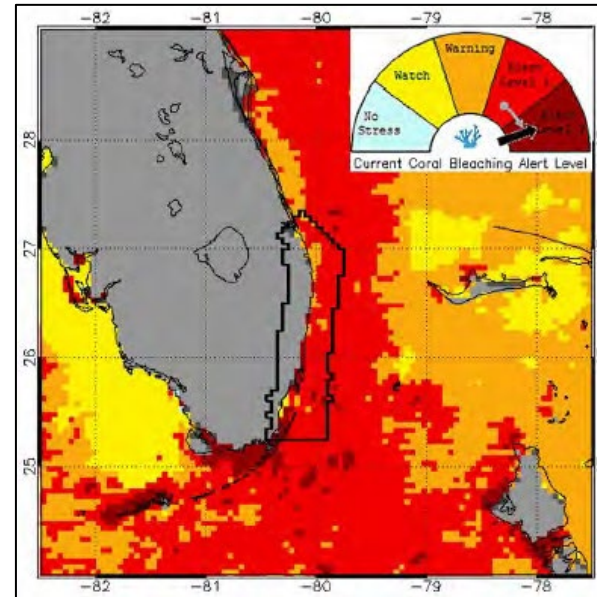
IMPACTS TO CORAL REEFS

Local Stressors

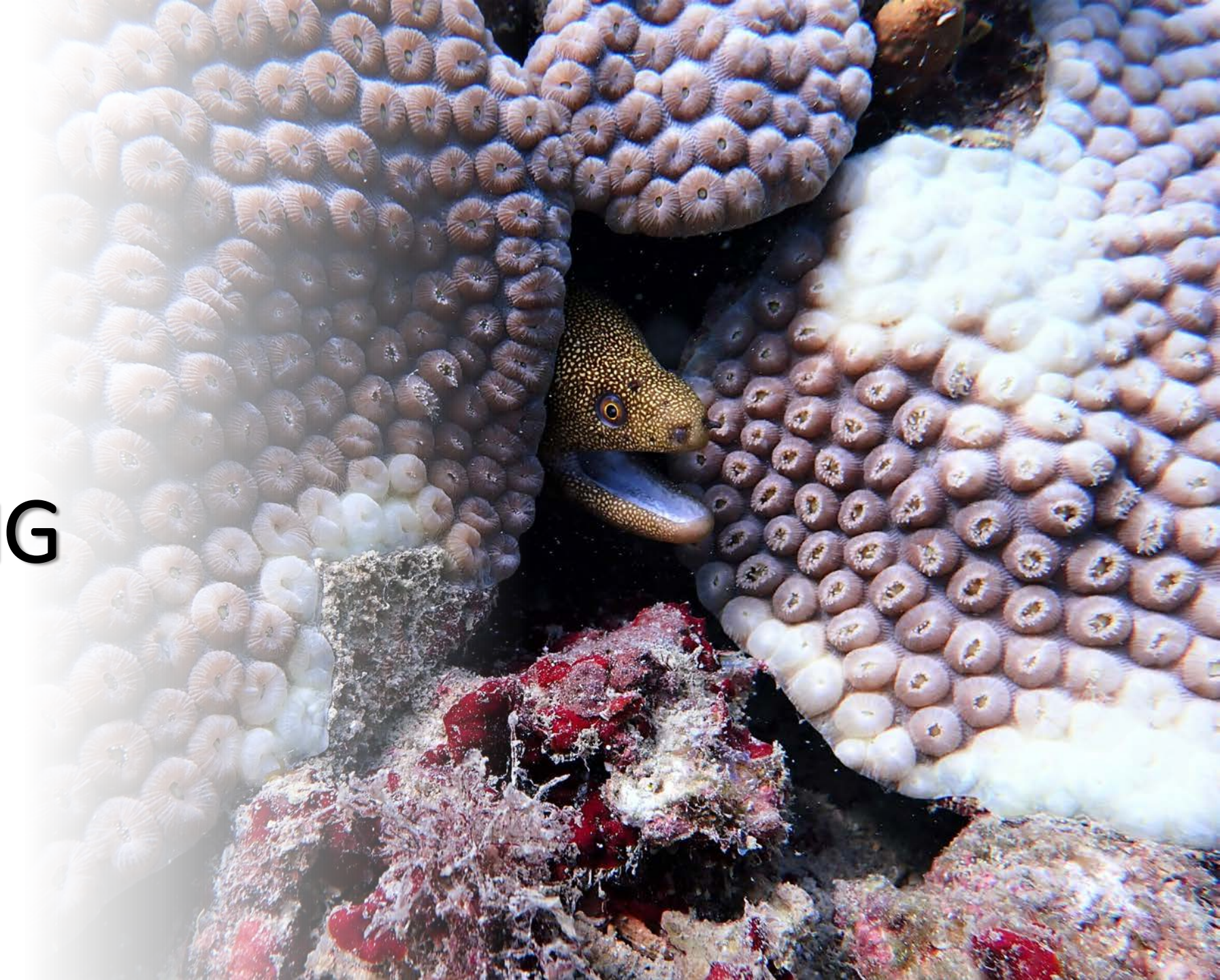
- Pollution and Poor Water Quality
- Marine Debris
- Physical Damage
- Disease Outbreaks
- Fishing Pressure
- Overuse/Misuse

Global Stressors

- Ocean Acidification
- Increasing Ocean Temperatures
- Coral Bleaching



CORAL BLEACHING



CORAL BLEACHING

How corals respond to stress

Coral Bleaching

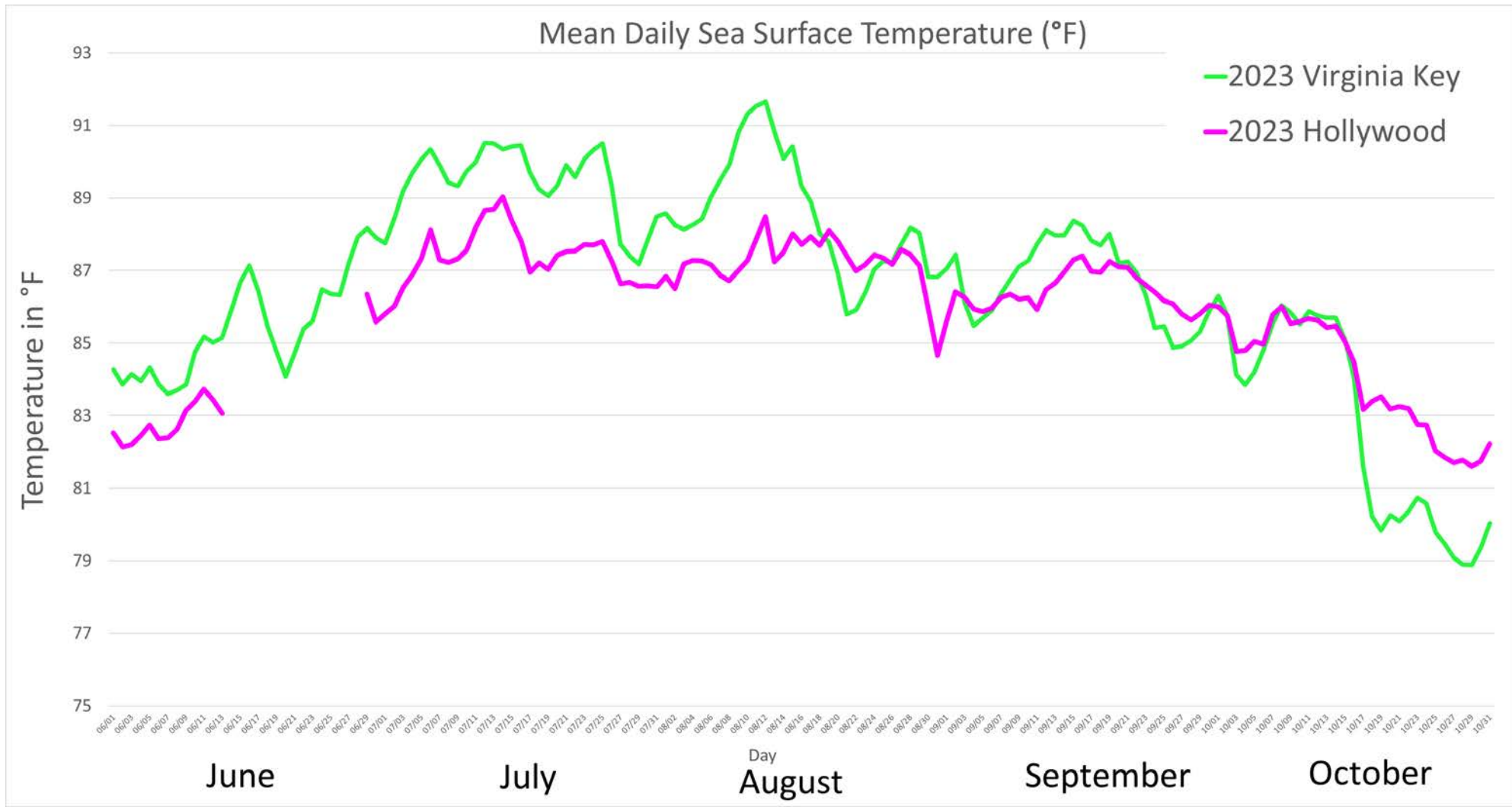
- Temperature (hot or cold) changes (<60F° or >84F°)
- Zooxanthellae and polyps have a symbiotic relationship
- In response to stress polyps expel zooxanthellae
 - leaves behind translucent tissue
 - colony is susceptible to disease and starvation



CORAL BLEACHING



- Daily sea surface temperature (June through October 2023)
- NOAA waverider buoy Station 41122
- NOAA national data buoy Station VAKF1



CORAL BLEACHING



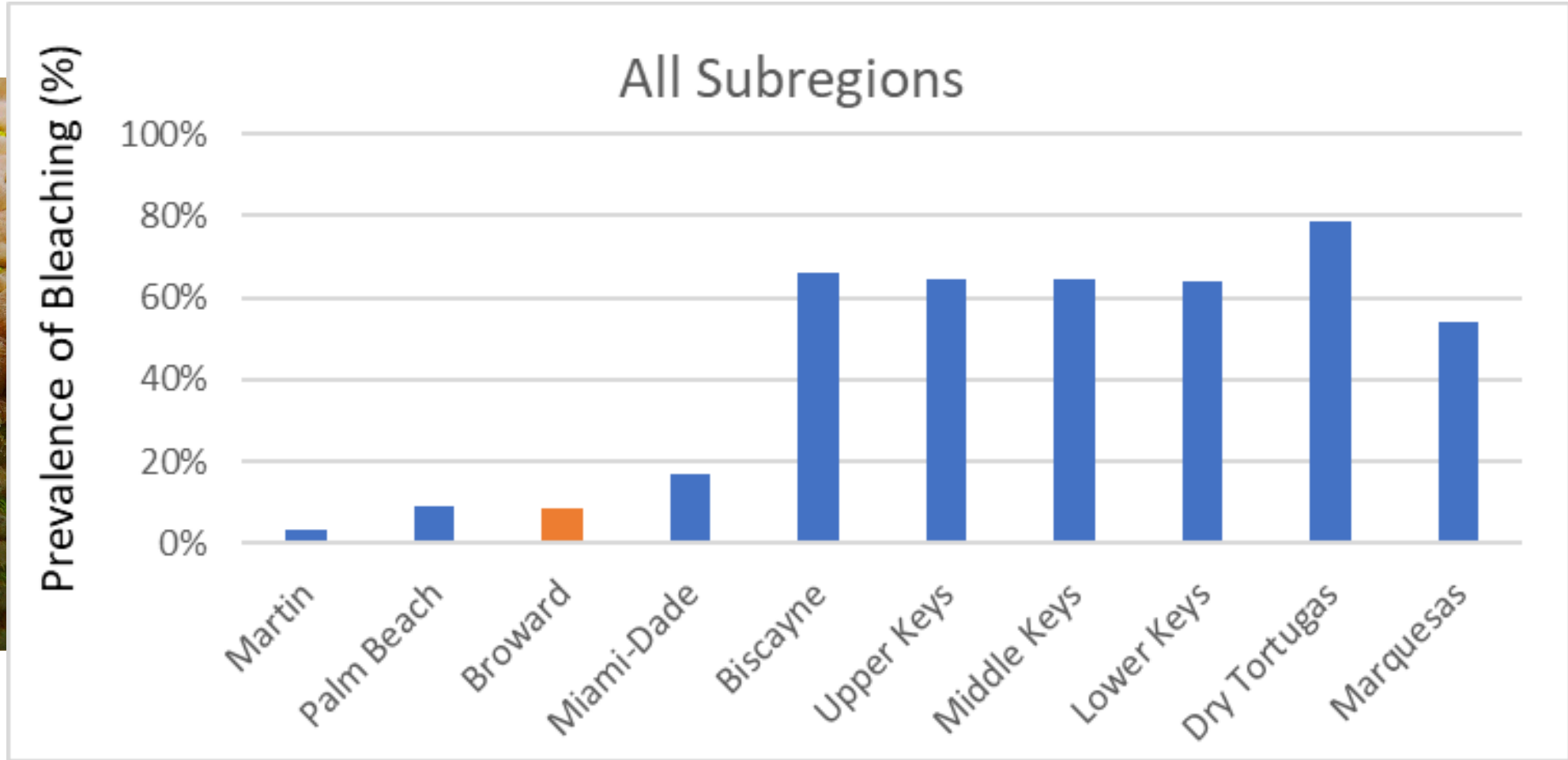
Florida Reef Resilience Program Disturbance Response Monitoring

- Collaborative effort among agencies, local governments, scientists, conservation organizations, and reef stakeholders
- Development of resilience-based management strategies to address climate and other stressors affecting the FCR
- Disturbance Response Monitoring (DRM) program was created to address severe bleaching events
- Data Collection - to provide valuable information on the condition of corals
- Information assists managers to
 - Identify resilient areas along the reef
 - Develop conservation and restoration strategies
 - Encourages partners to work together in a regional effort



CORAL BLEACHING

Regional 2023 DRM Survey - Spatial Comparison



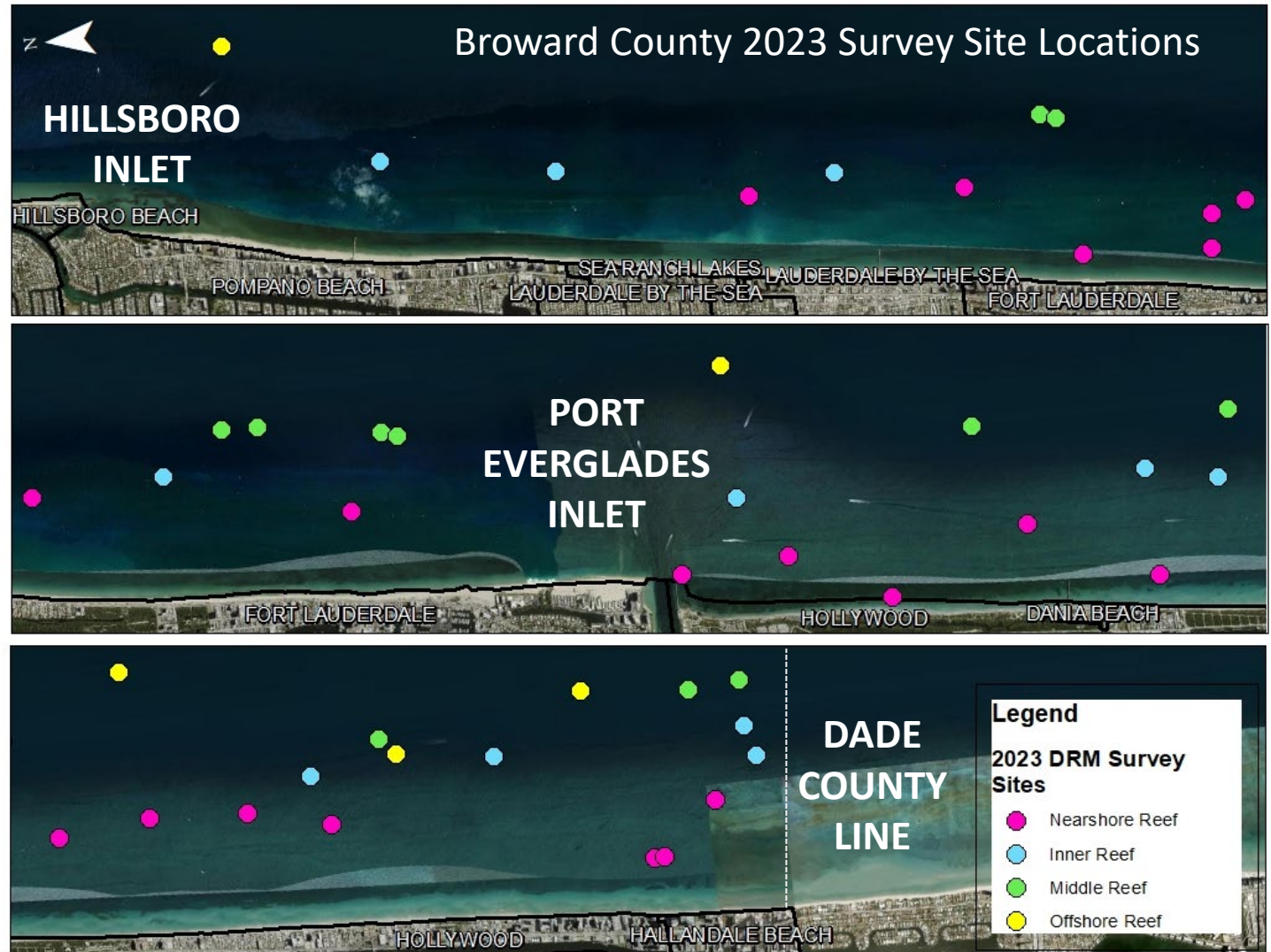
*please note the data graphs presented were developed using a PRELIMINARY DATASET. The data hasn't undergone a complete QA/QC process and is not considered finalized at this time.

CORAL BLEACHING



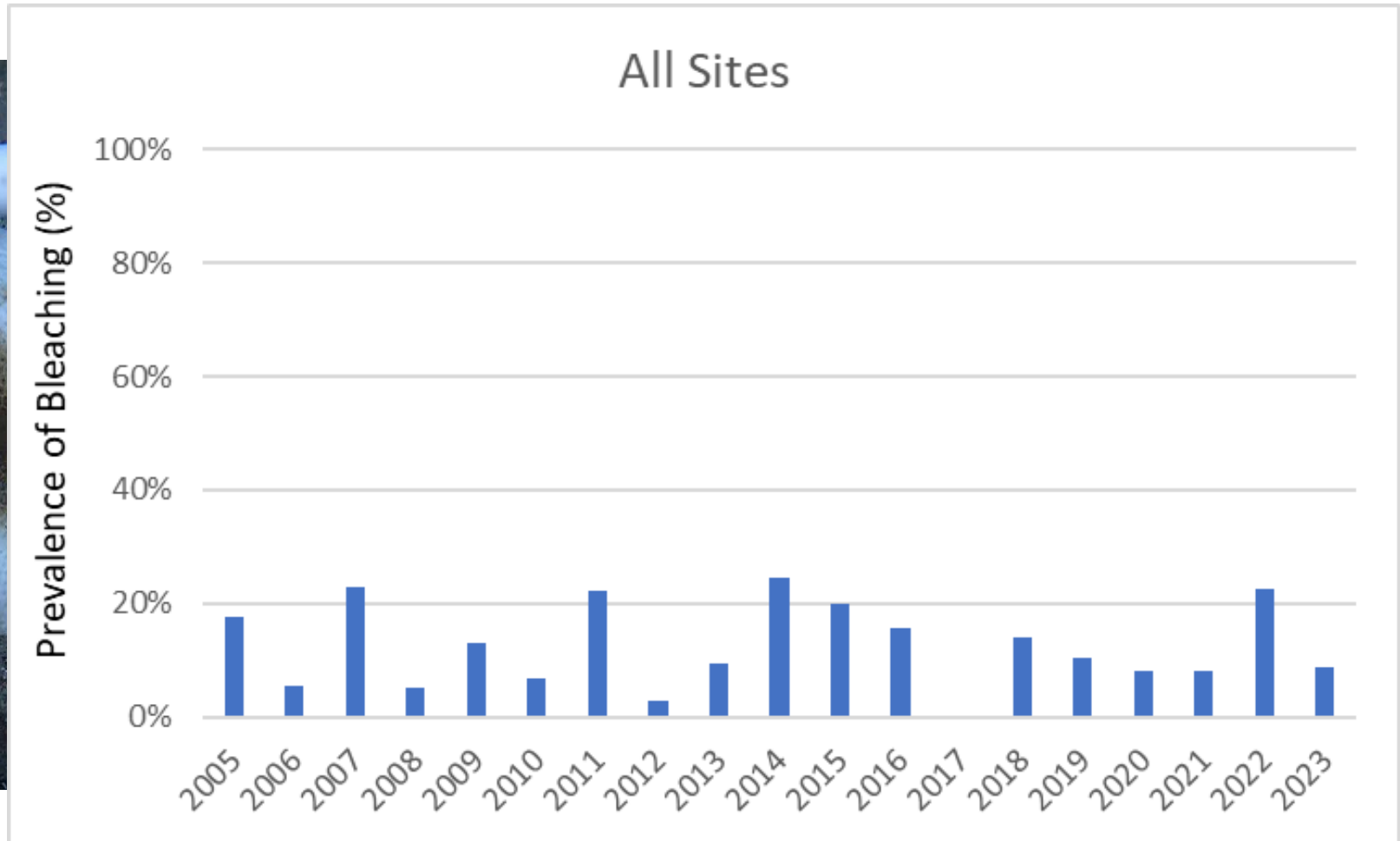
Broward County 2023 DRM Sites

- 47 sites surveyed
- >1300 colonies assessed
- Distributed by Zone
 - Nearshore
 - Inner Reef
 - Middle Reef
 - Outer Reef



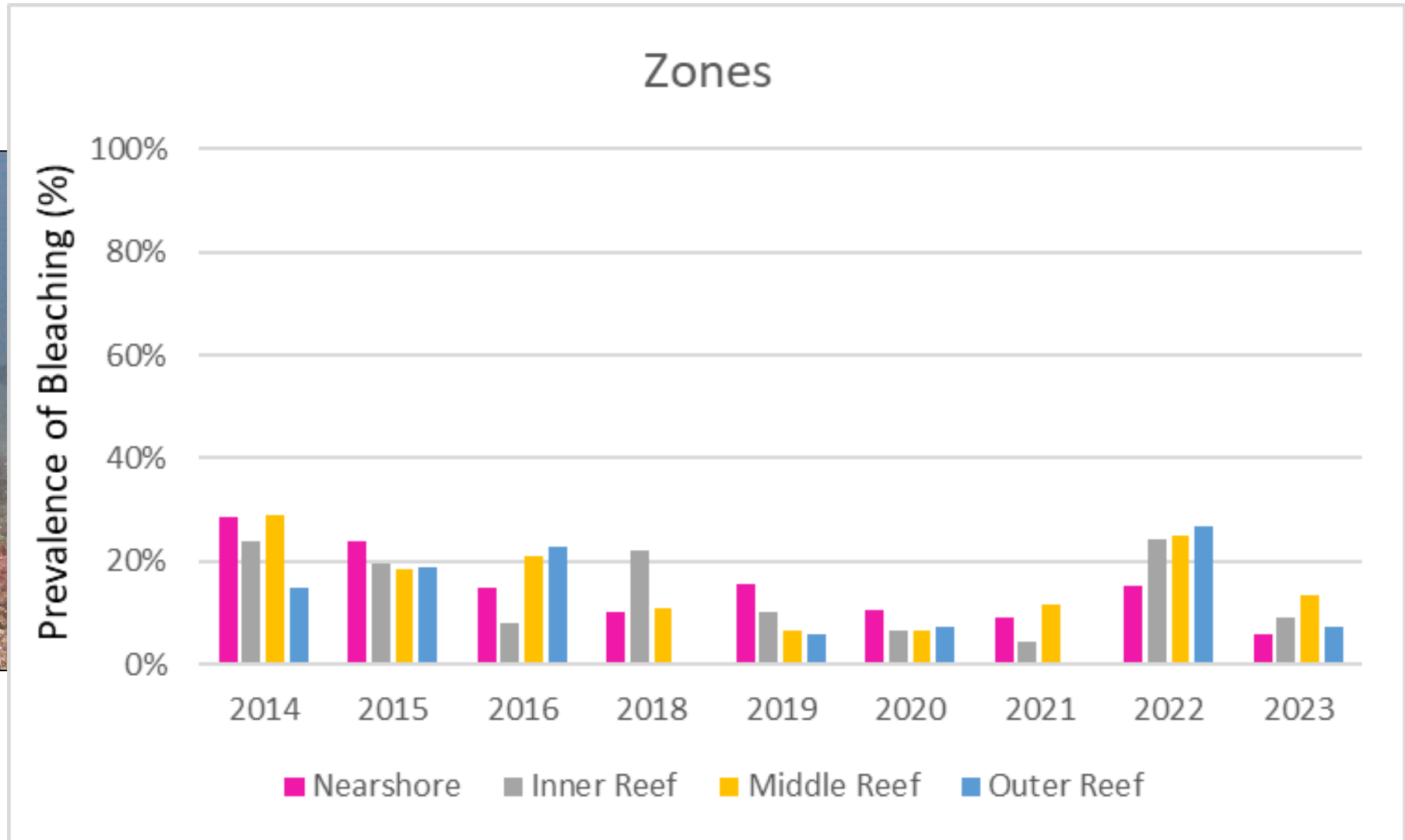
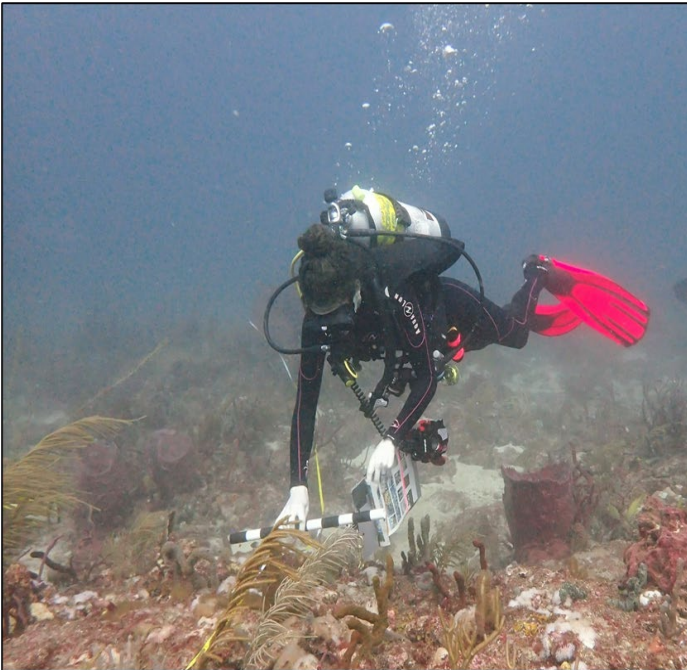
CORAL BLEACHING

Broward County DRM Sites – Temporal Comparison



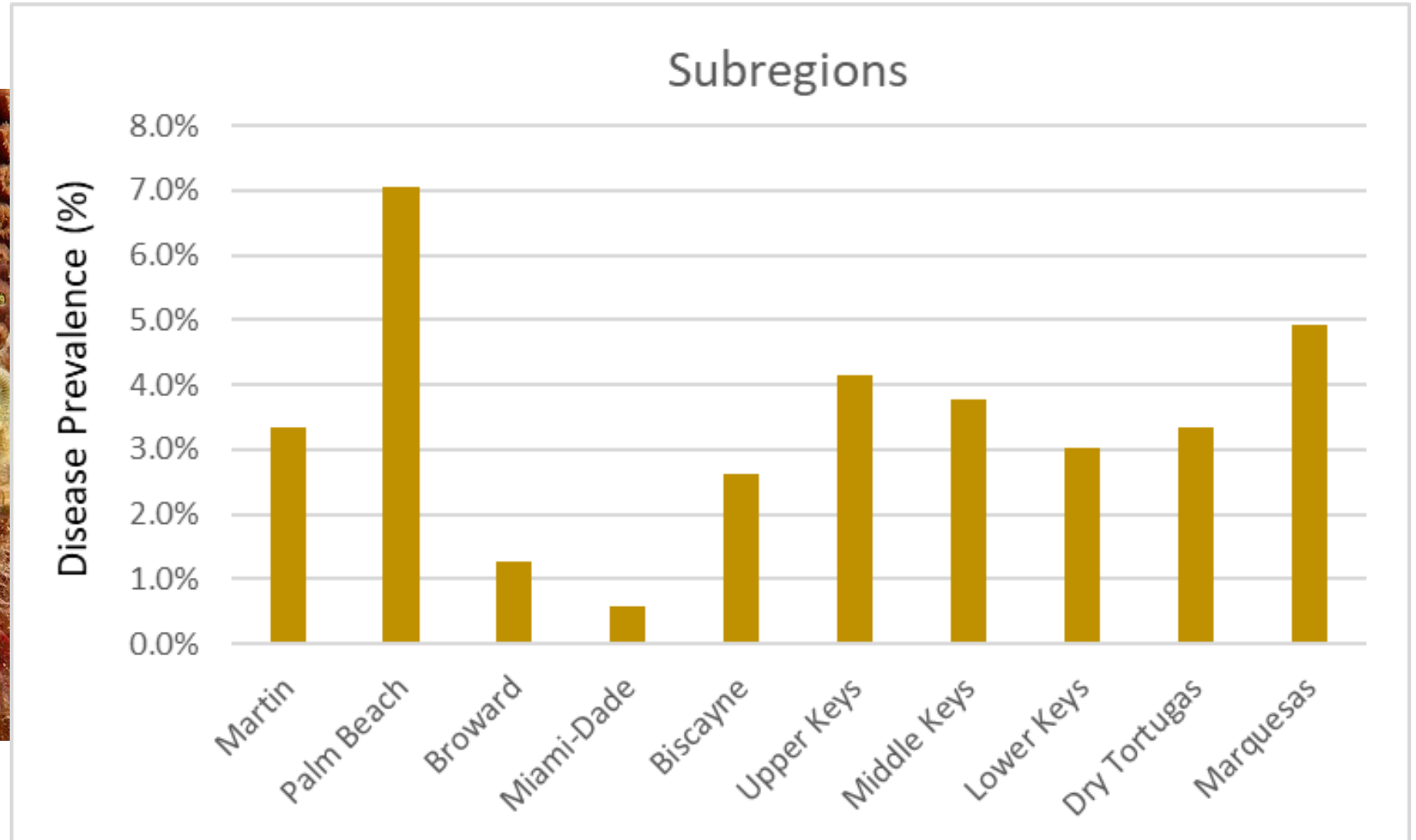
CORAL BLEACHING

Broward County DRM Sites – Temporal Comparison by Zone



CORAL DISEASE

Broward County DRM Sites – Spatial Comparison



References:

Florida Reef Resilience Program's Disturbance Response Monitoring (2023). 2005-2023. Unpublished data. Florida Fish and Wildlife Conservation Commission. Environmental Protection Agency cooperative agreement number X7-02D02321-0. **Note: DRM data and graphs presented in this presentation were developed using a PRELIMINARY DATASET. The data hasn't undergone a complete QA/QC process and is not considered finalized at the time of this presentation.*

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QUESTIONS?

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