



Restoring Resilience

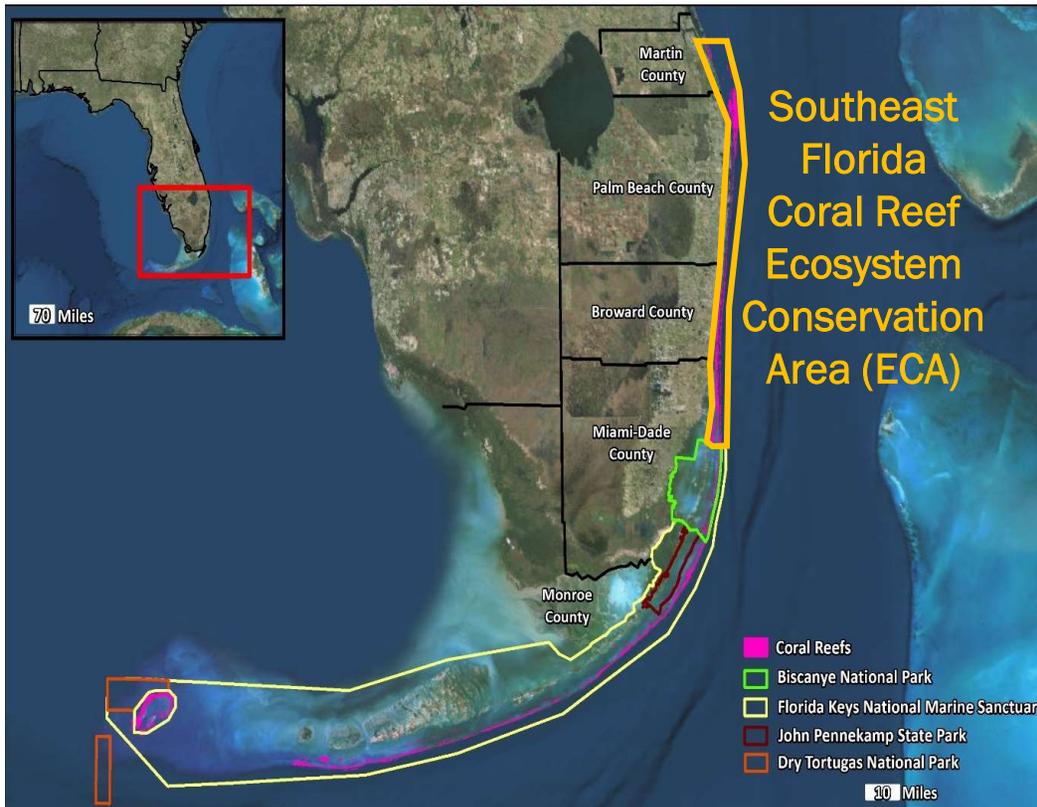
Update on Florida Reef Tract Coral Disease Outbreak Response Efforts

**Joanna C. Walczak, SE Regional Administrator
Office of Resilience & Coastal Protection – SE Region**



Florida's Coral Reefs

Florida Reef Tract



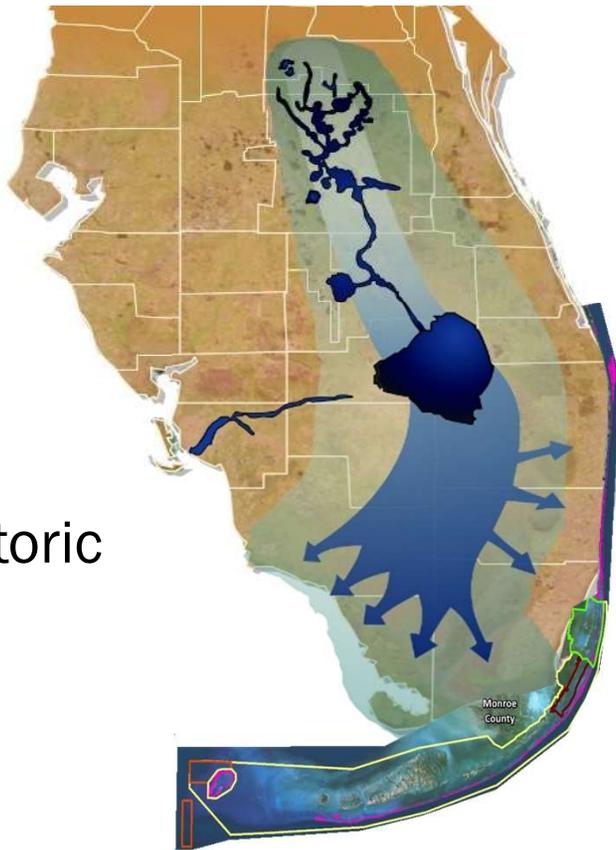
Images: DEP, D. Gilliam, NOAA



Florida's National Treasures

The Everglades and the Florida Reef Tract

Historic

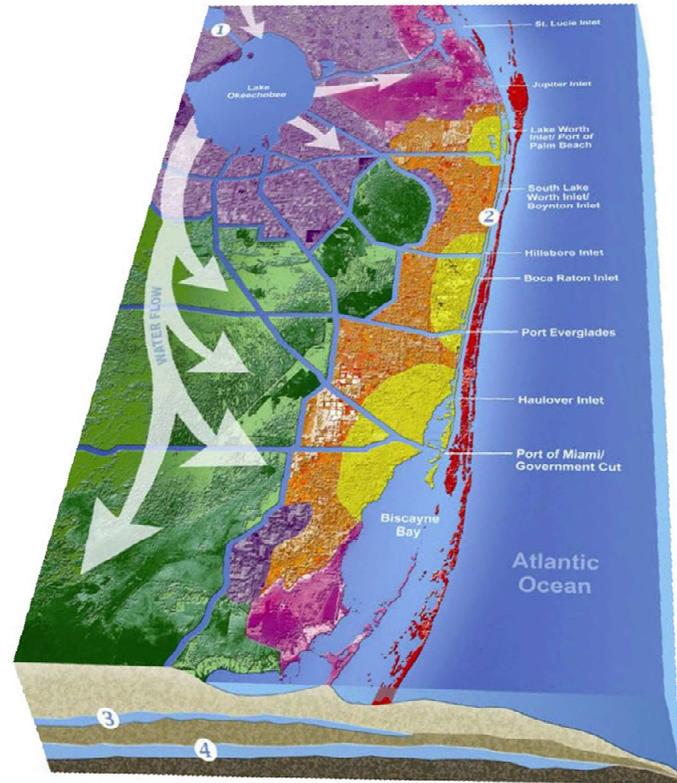
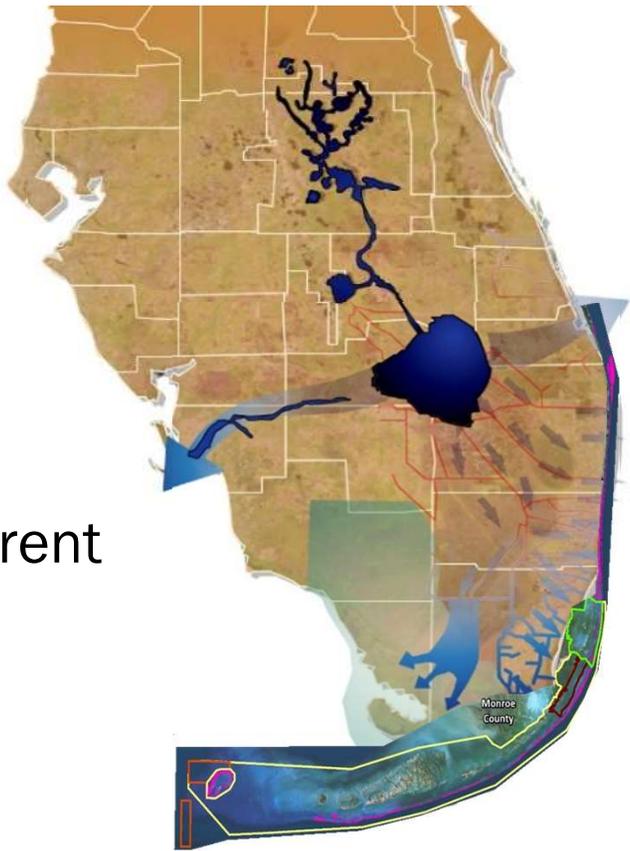




Florida's National Treasures

The Everglades and the Florida Reef Tract

Current

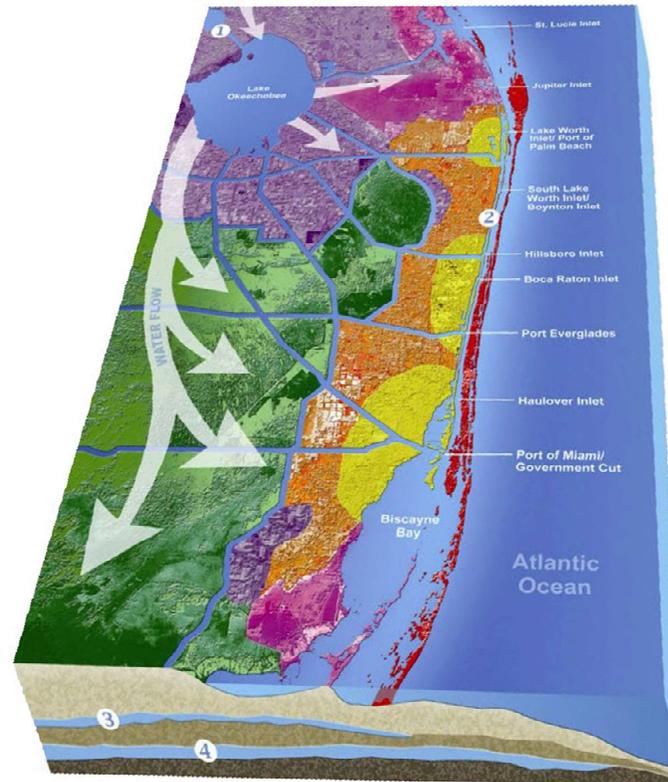
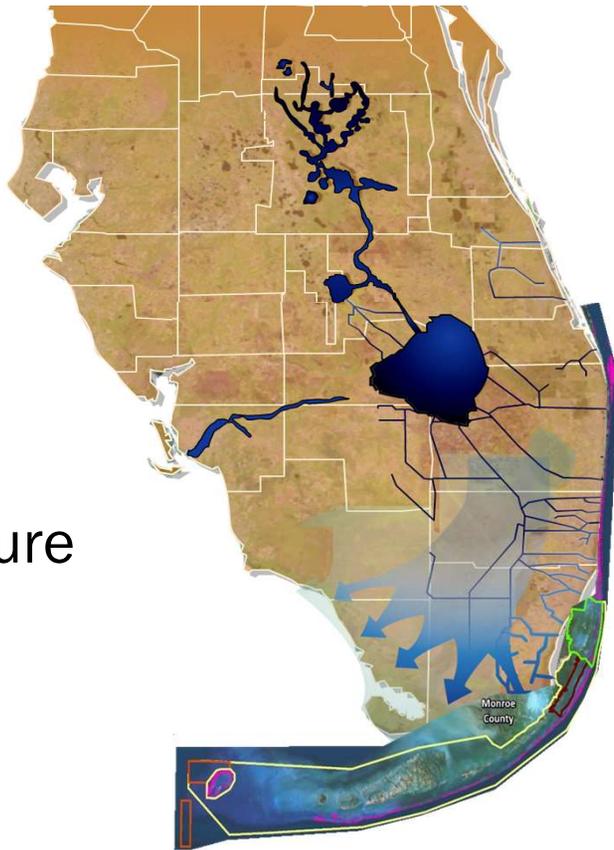




Florida's National Treasures

The Everglades and the Florida Reef Tract

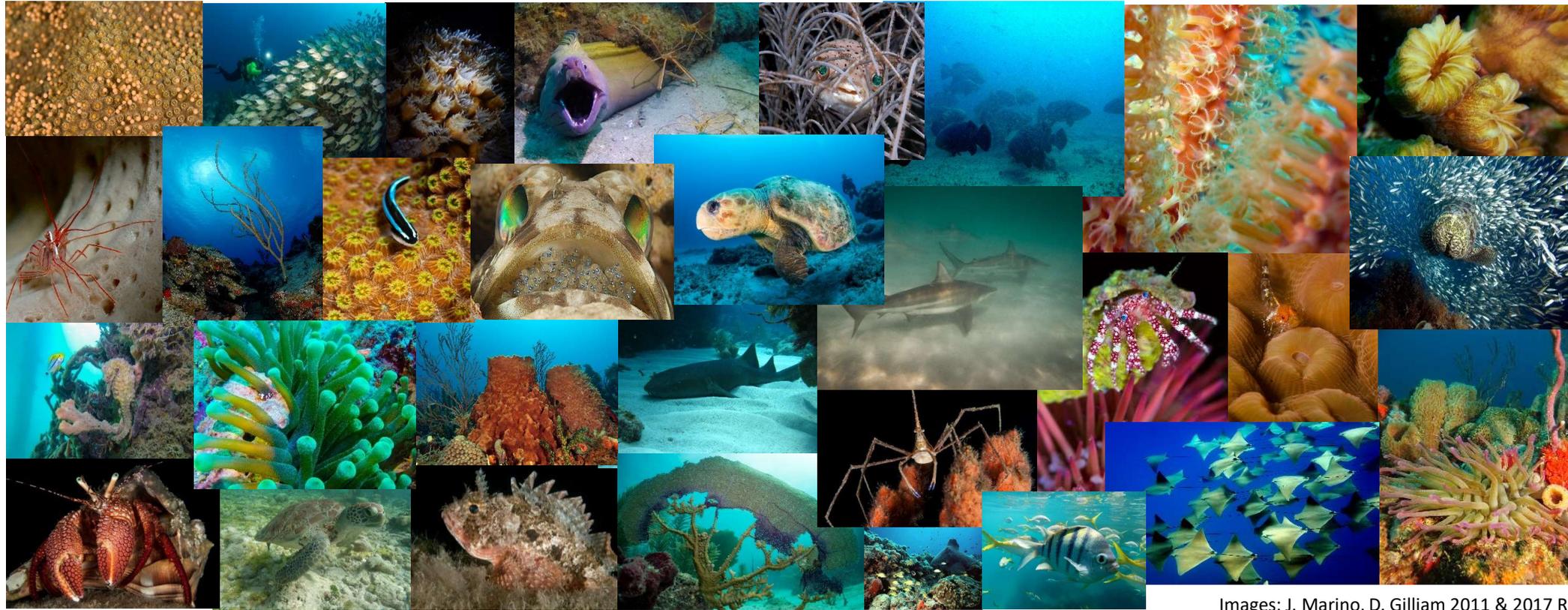
Future





Florida's National Treasure

Ecologically Diverse



Images: J. Marino, D. Gilliam 2011 & 2017 Re



Coastal Resilience

Economically Essential

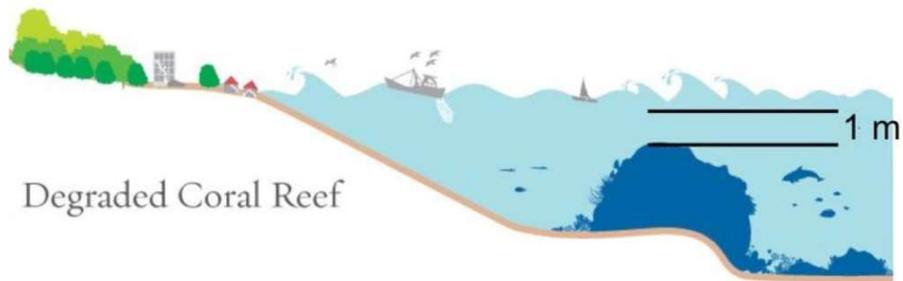
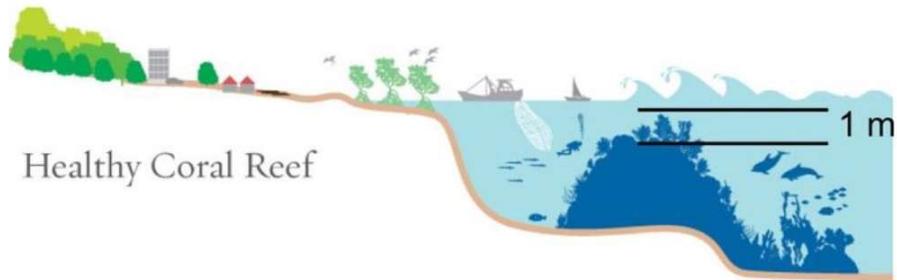


Illustration by Dawn Witherington



Economically Essential

Coastal Protection, Fishing, Tourism

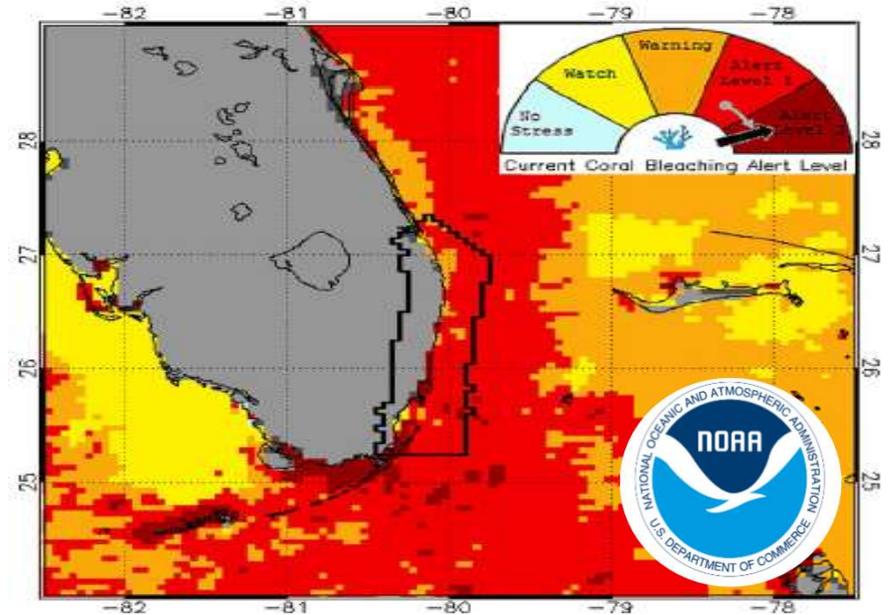


Images from: Mapping Ocean Wealth



Global Stressors

Increased frequency & severity of extreme thermal events
(hot & cold)



Ocean (& coastal)
acidification

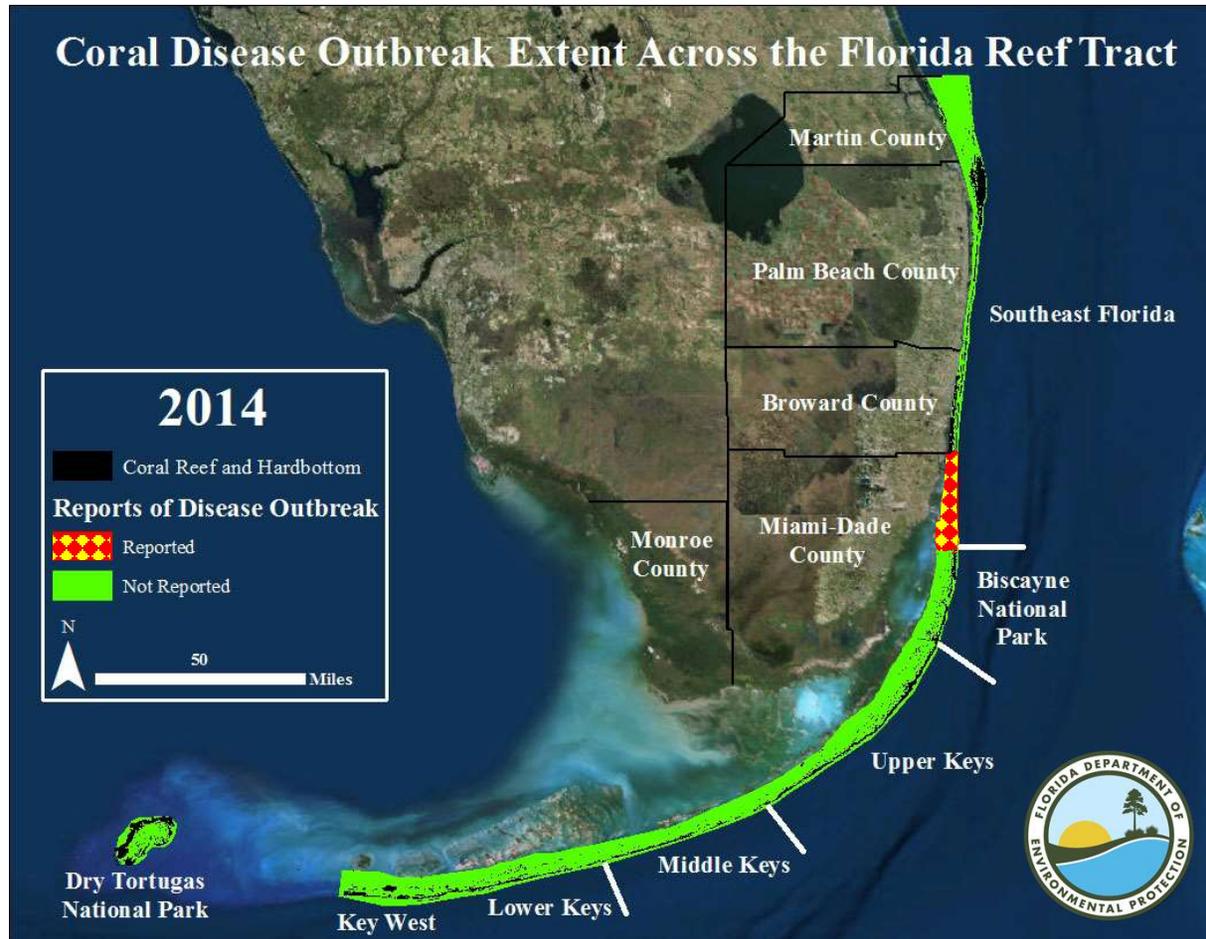


Local Stressors



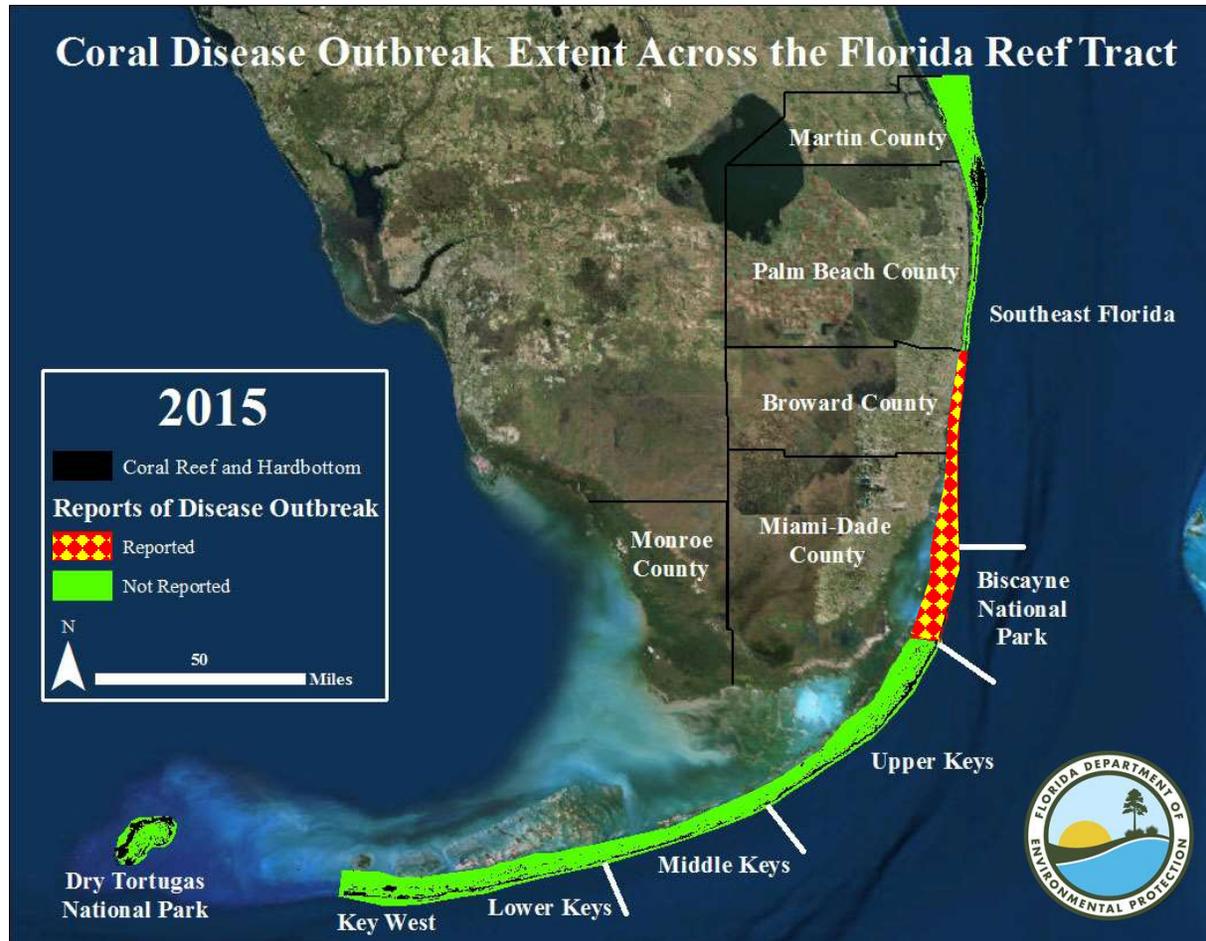


Florida's Coral Disease Outbreak



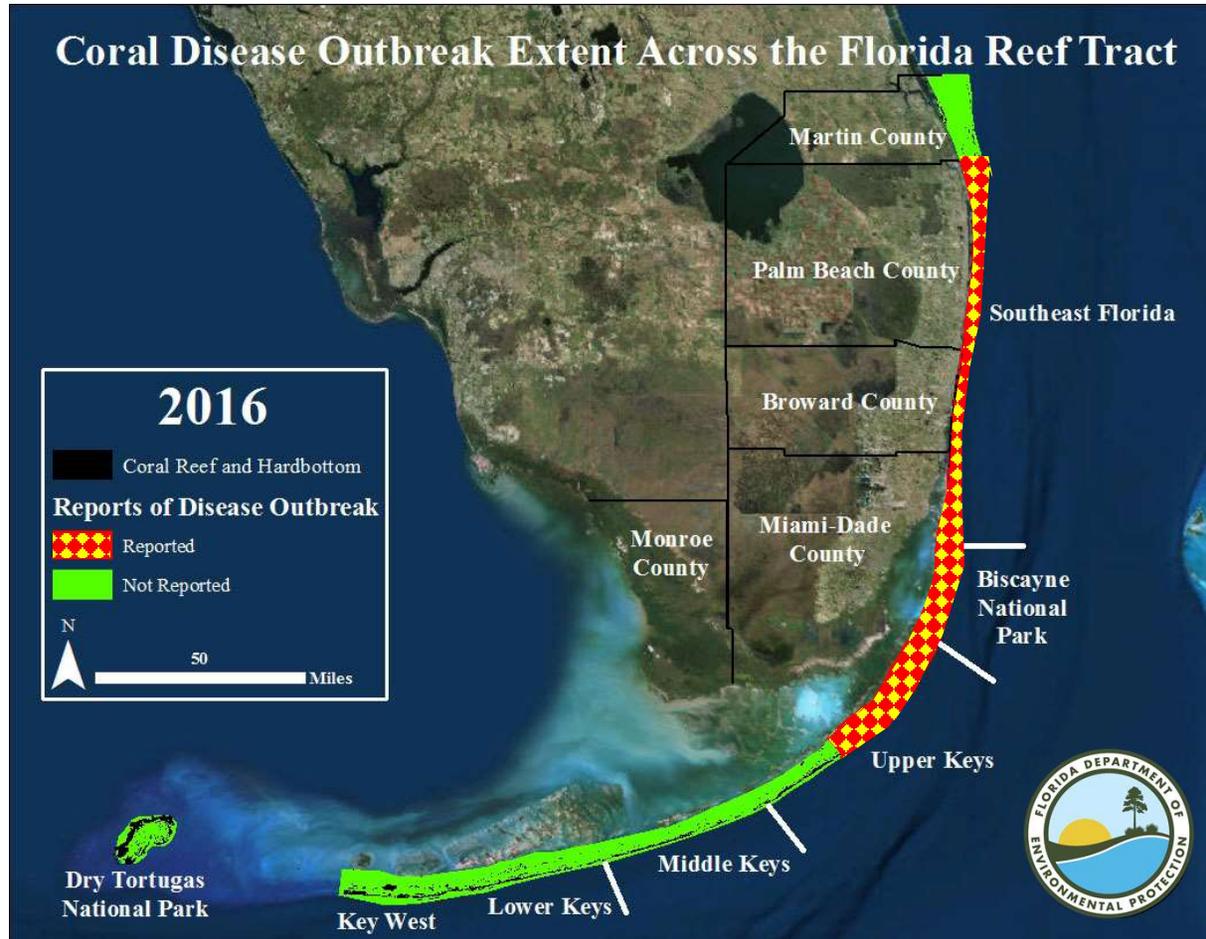


Florida's Coral Disease Outbreak



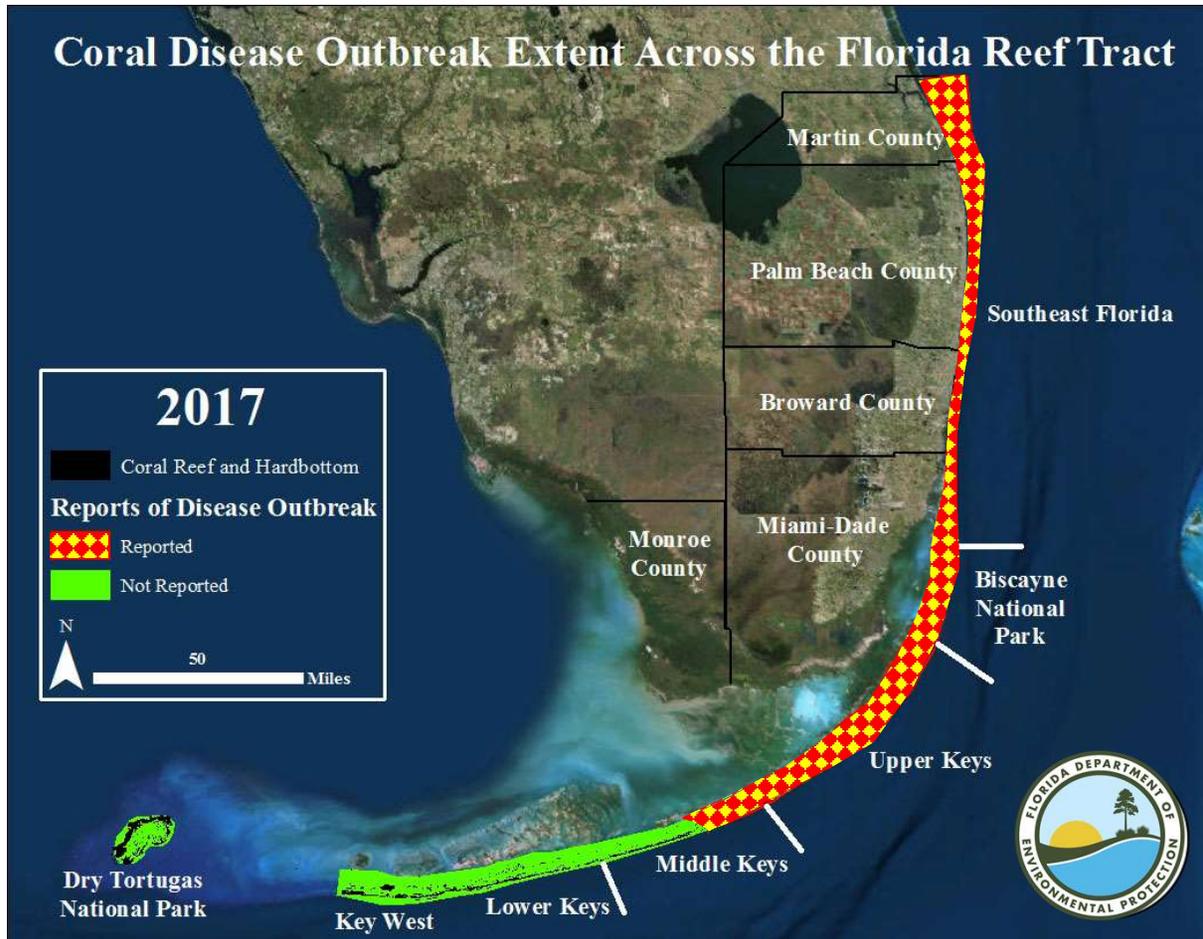


Florida's Coral Disease Outbreak



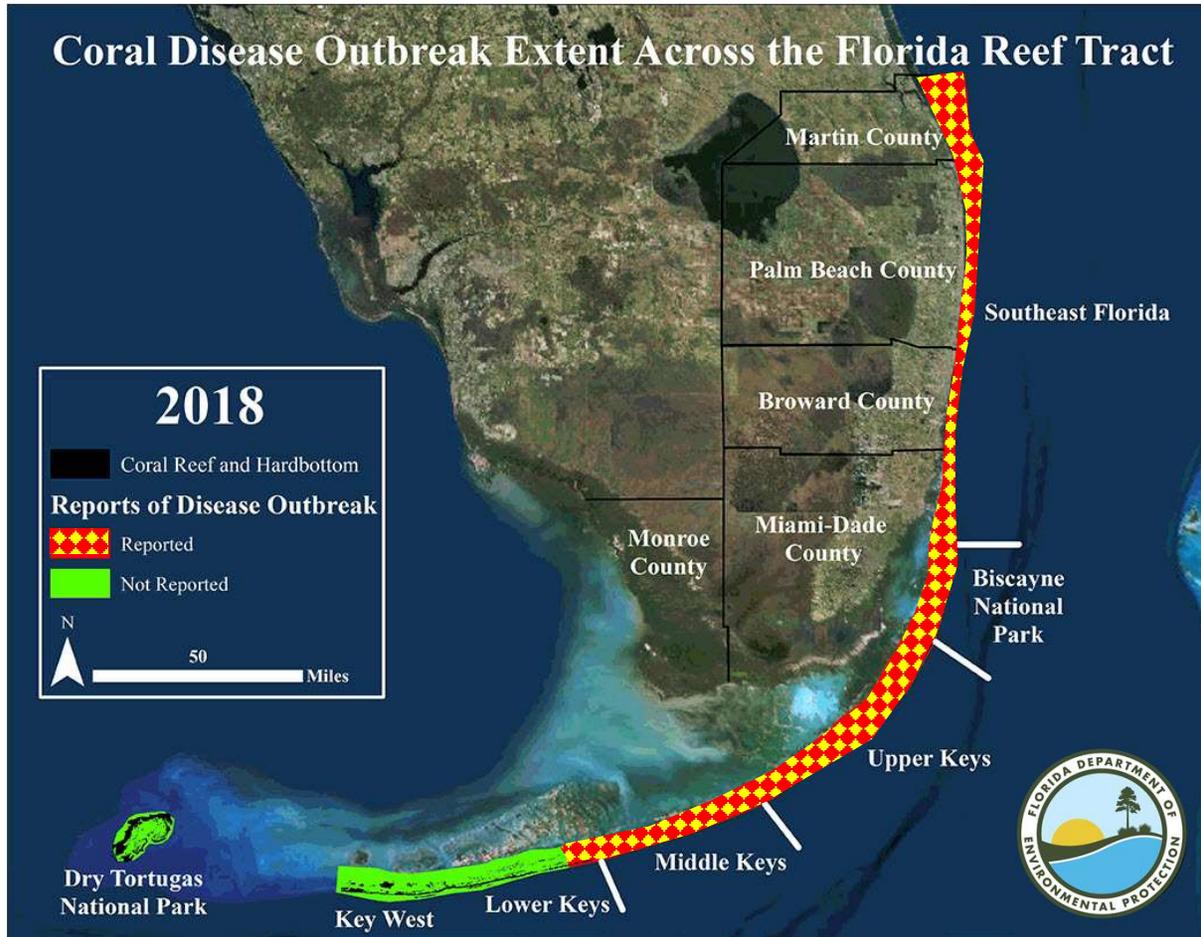


Florida's Coral Disease Outbreak



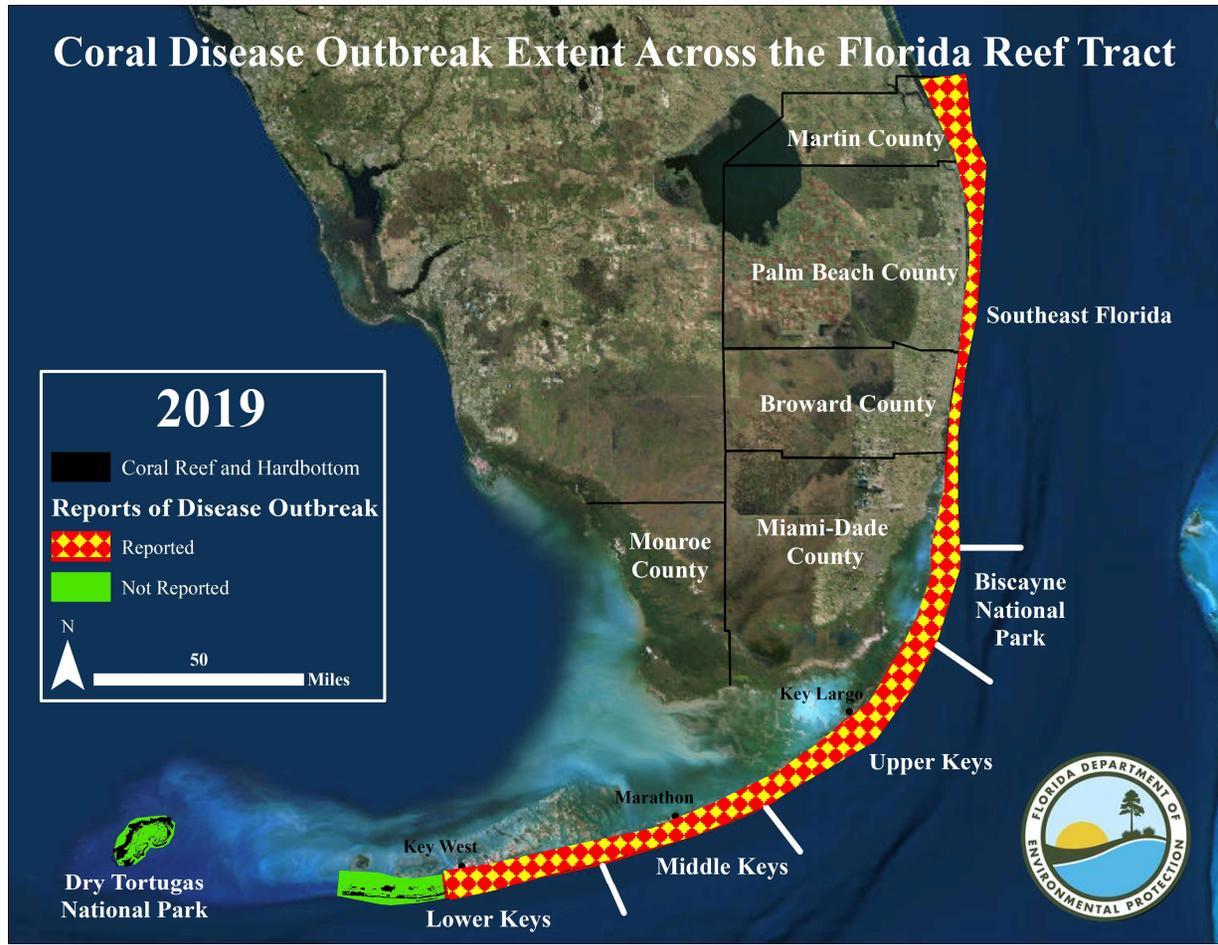


Florida's Coral Disease Outbreak





Florida's Coral Disease Outbreak





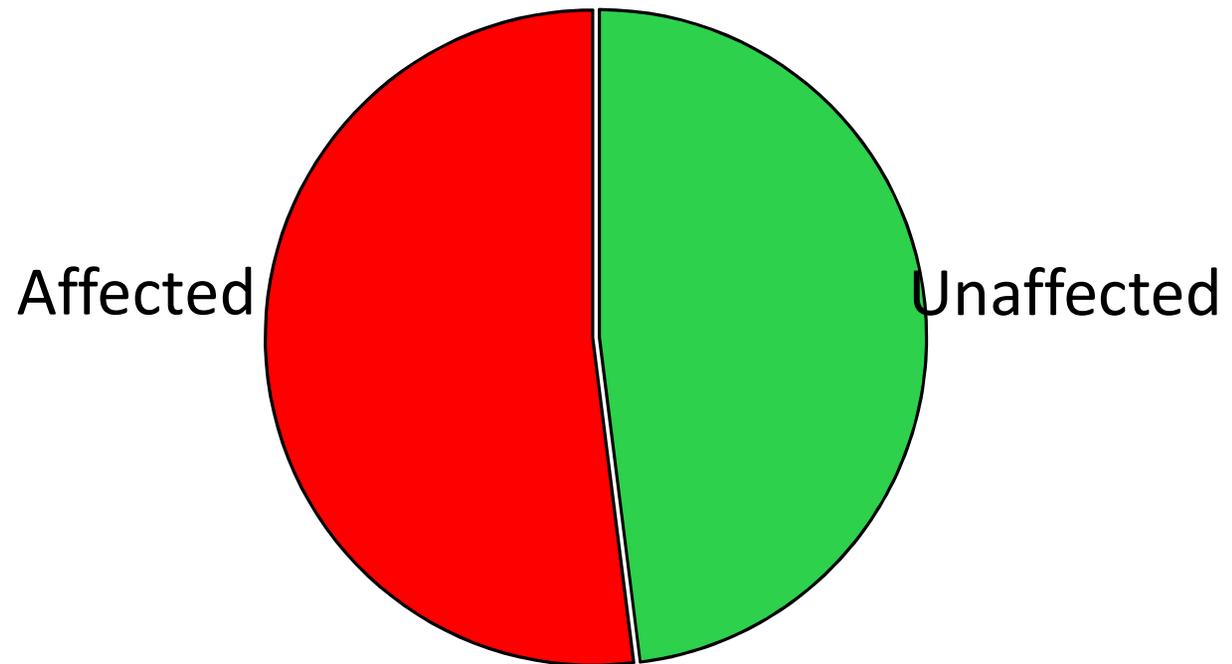
Stony Coral Tissue Loss Disease





Coral Species Affected

More than half of Florida's reef-building coral species are susceptible





Levels of Disease Within Species

Florida's "Normal"
= 2% to 3%





Levels of Disease Within Species

Very High

= 66% to

100%

(in certain species)





Florida's Coral Disease Outbreak

Progresses Rapidly





Florida's Coral Disease Outbreak





Florida's Coral Disease Outbreak

Reported effectively dead (<5% alive) in Dec





Disease Response Partners

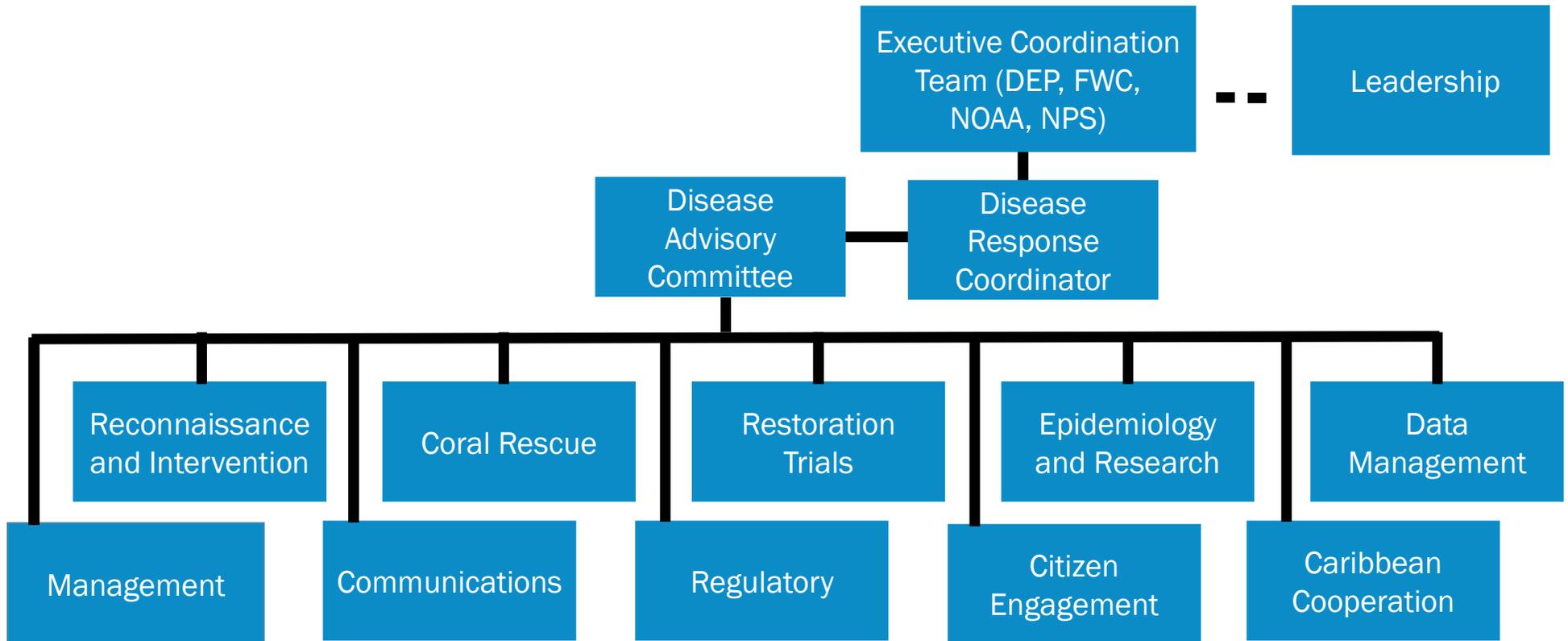
Coordinated Multi-Faceted Response Effort





Disease Response Structure

Since July 2018

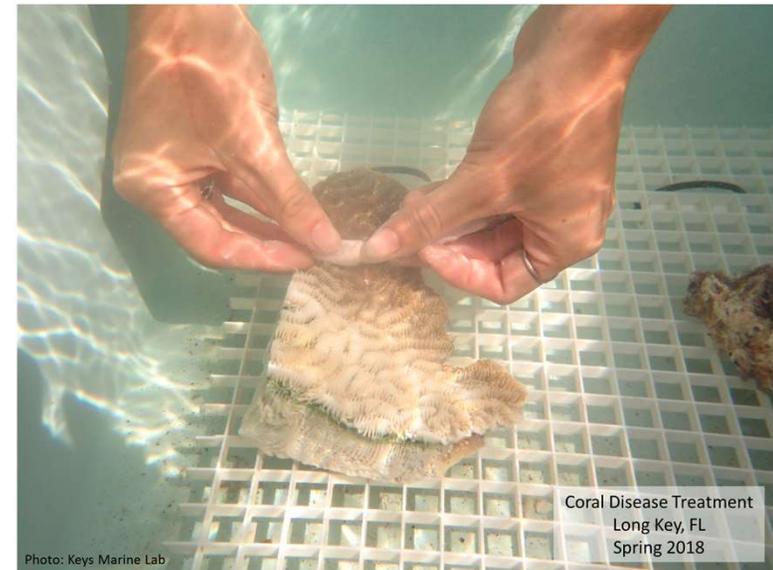




Legislative Funding – FY 17/18

DEP-funded \$1 million+ in coral disease projects:

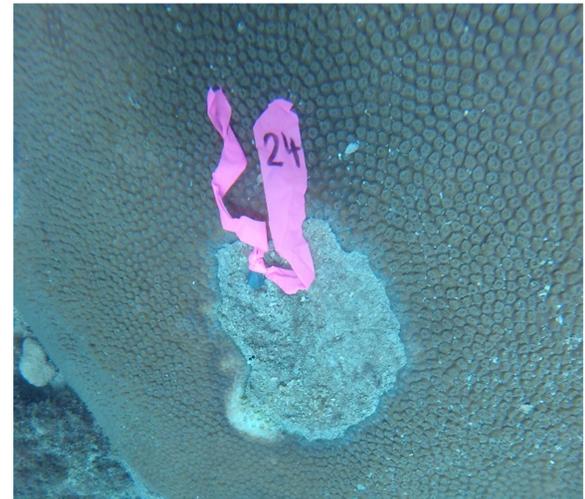
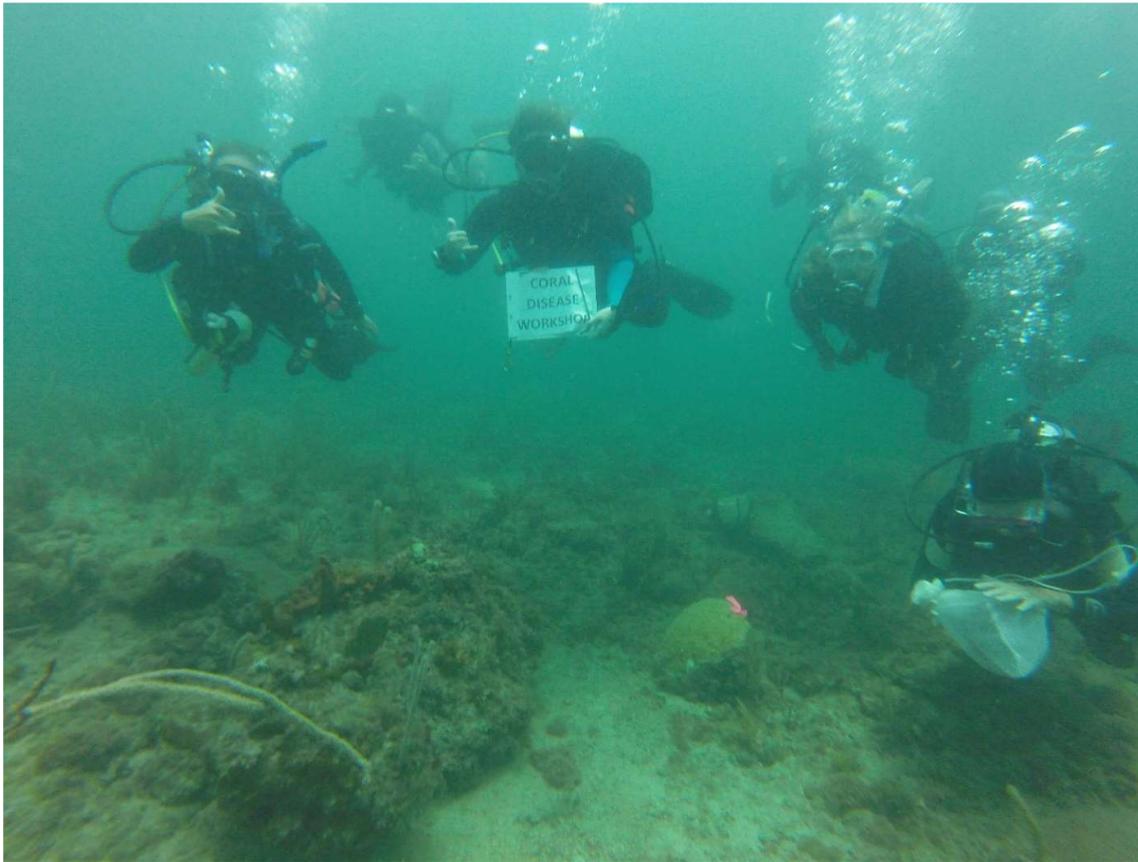
- Surveillance and monitoring
- Spatial modeling
- Lab-based treatment trials
- Sample collection
- Pathogen isolation experiments
- Water quality monitoring for new coral reef Ecosystem Conservation Area (ECA)



FloridaDEP.gov/rcp/coraldisease



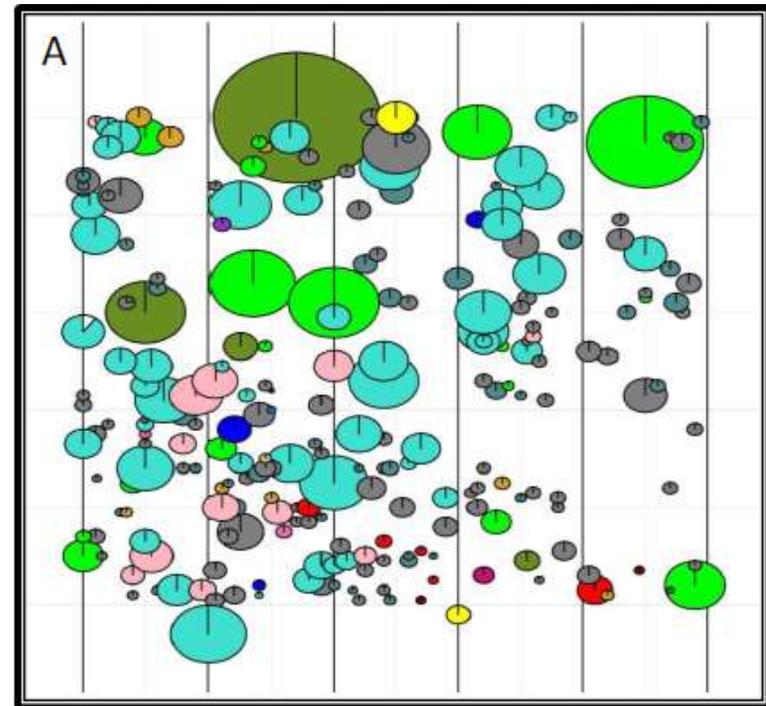
Disease Identification Training





Disease Surveys & Monitoring

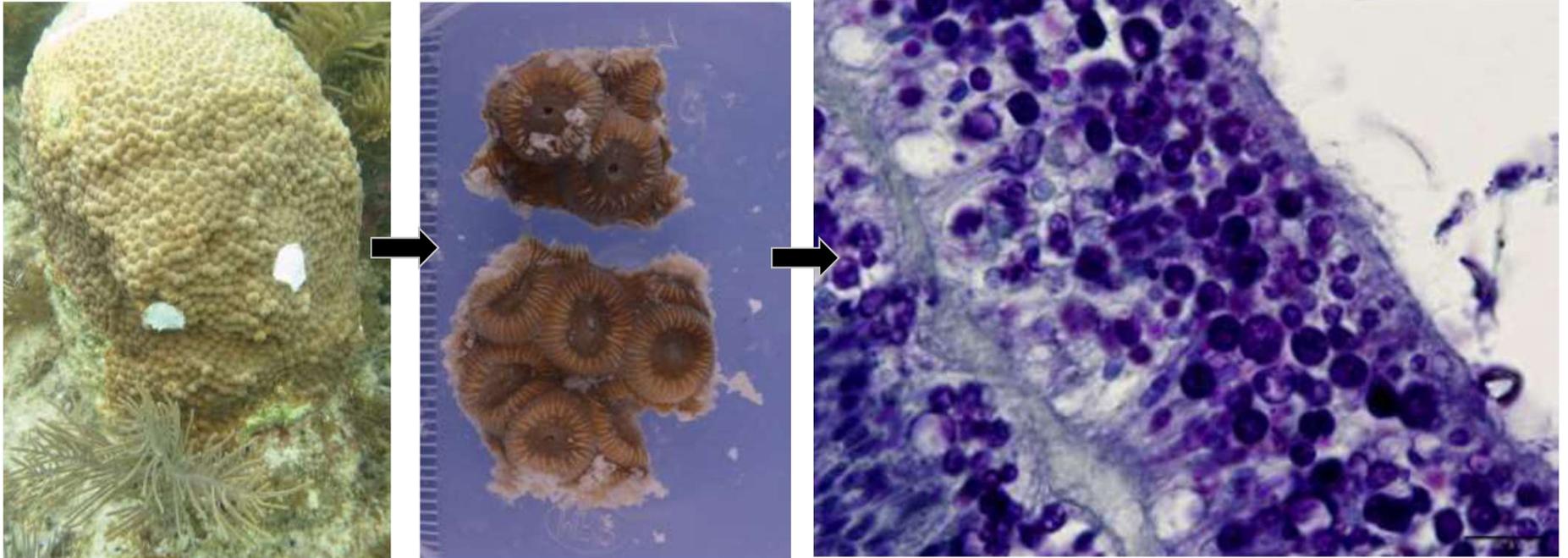
Distribution, Prevalence, Severity, and Associated Impacts





Search for the Pathogen

Identify Potential Pathogen(s) and Characterize the Disease(s)





Technical Expert Workshops

November 2017 and July 2018

3-Day Coral Disease Technical Workshops

- Intervention action framework
- Coral rescue
- Restoration trials
- Community engagement
- Recommendations for response capacity and restoring ecosystem resilience



July Workshop Participants.
Photo: FDEP



Coral Rescue

Rescue Healthy Corals to Preserve Genetic Stock





Innovative Disease Intervention

Treating Lesions on Priority Corals

**Laboratory trials
(Research &
Development)**

**Small-scale
field trials**



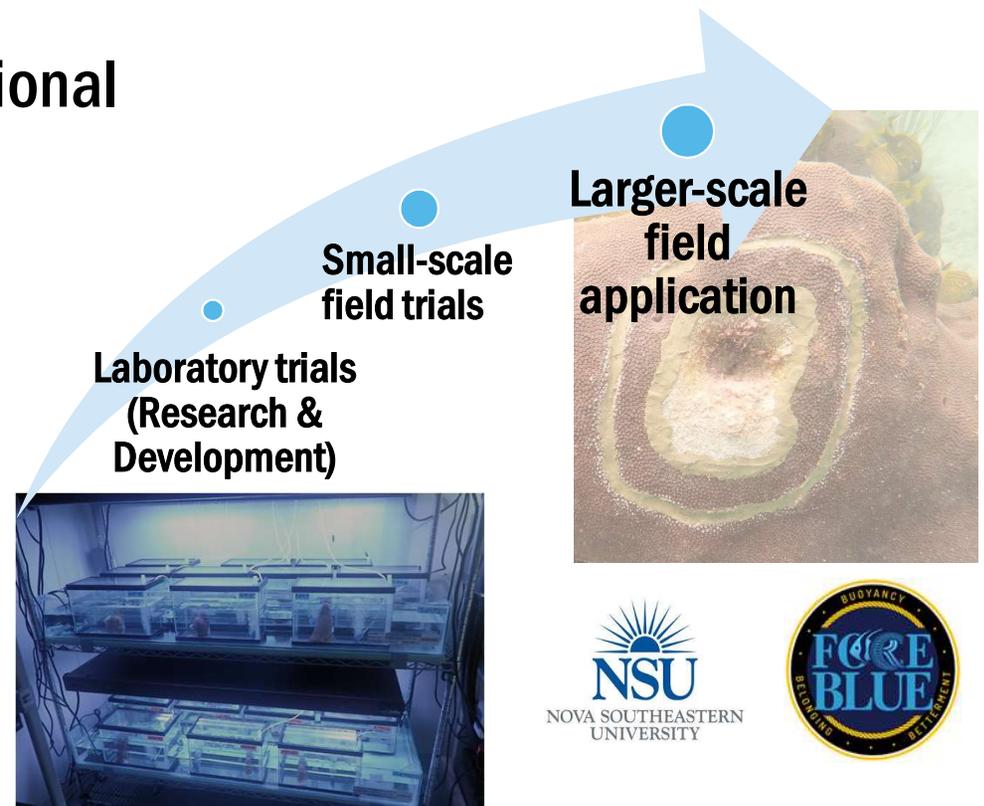


Legislative Funding – FY 18/19

DEP is funding \$2+ million in additional coral disease response projects:

Coming Soon:

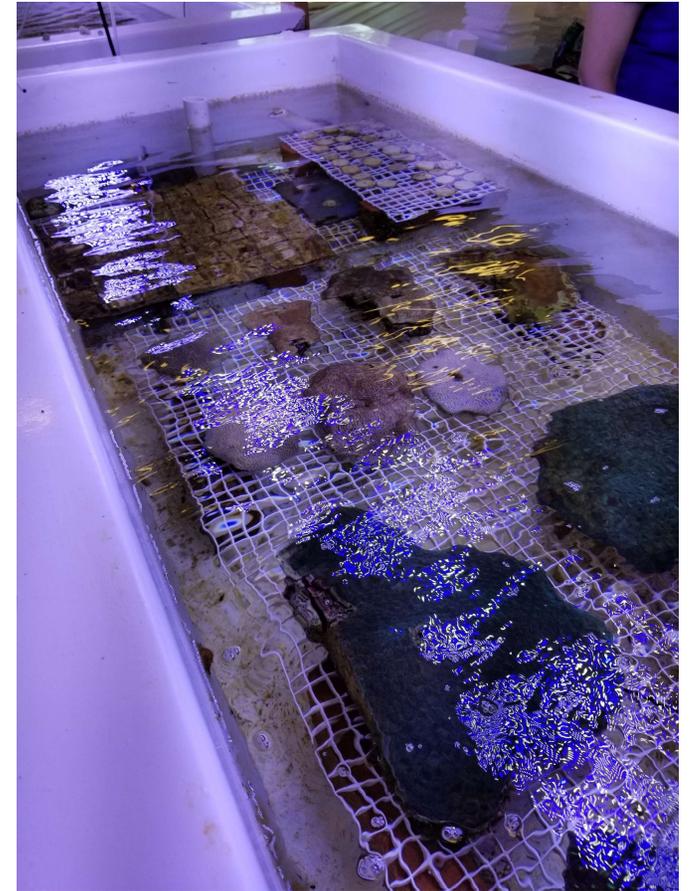
- Land-based infrastructure support for rescued wild corals
- Locating and propagating survivors
- Restoration Trials
- Intervention and coral rescue “Strike Teams”





Restoring Resilience

Restoration Trials





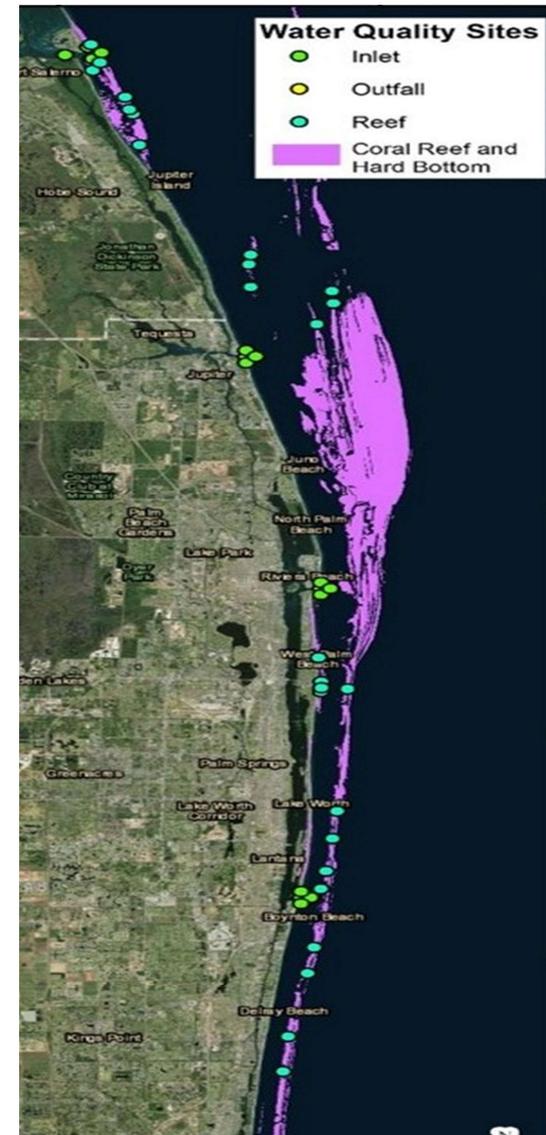
Restoring Resilience

Coral Reef Water Quality Monitoring

Sampling began September 2017 at inlets, wastewater outfalls, and reef sites

- 115 sites monitored monthly from Miami to Stuart
- 9 inlets in four counties and 105 miles of coastline
- 132,000+ data points will be generated annually

Match technical and funding support from NOAA





Restoring Resilience

Coral Reef Water Quality Monitoring

Pilot Project is looking for:

- **Potentially harmful levels of nutrients**
- **Indicators of freshwater sources**
- **Sedimentation/turbidity**

Samples will be analyzed for:

- **Total phosphorus, nitrogen, and ammonium**
- **Turbidity and total solids**





Restoring Resilience

Short Term:

Enhance
Disease
Response
Capacity

=

Triage



Long-term:

**Reduce Local
Stressors &**

**Restore
Environmental
Conditions**

=

**Resilient
Reefs**



Thank you!



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