

# Invasive Cup Corals: What is the Risk to Florida's Coral Reef Ecosystem?



William C Sharp

Fish & Wildlife Conservation Commission

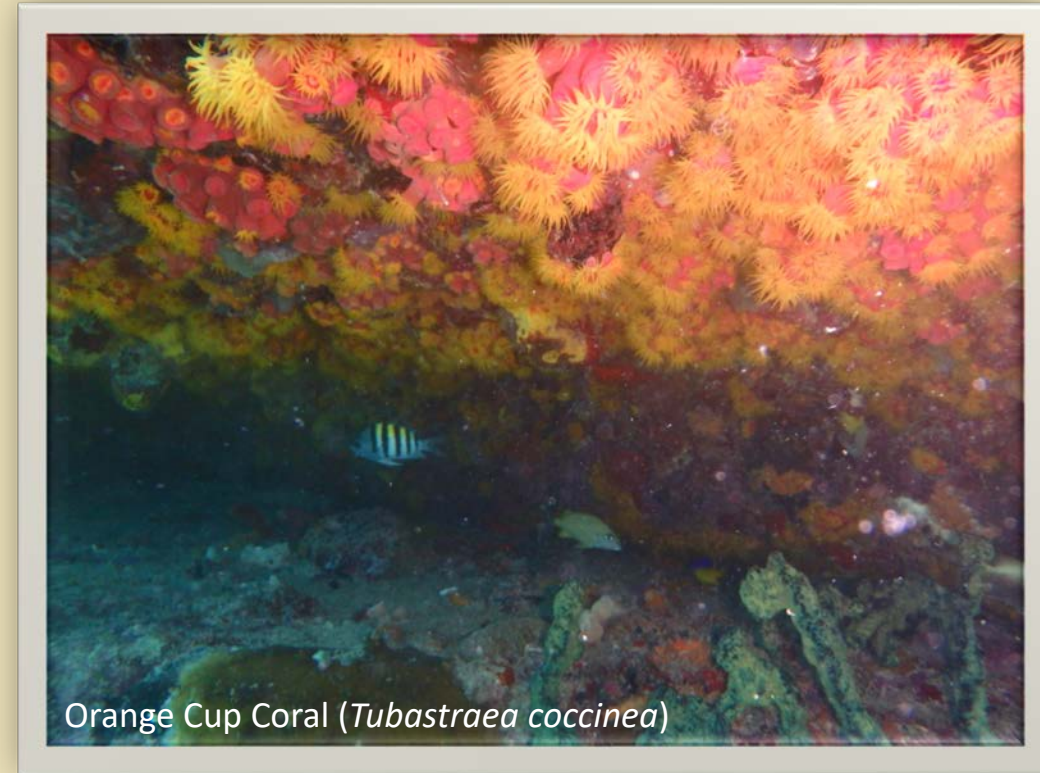
Fish & Wildlife Research Institute

South Florida Regional Laboratory



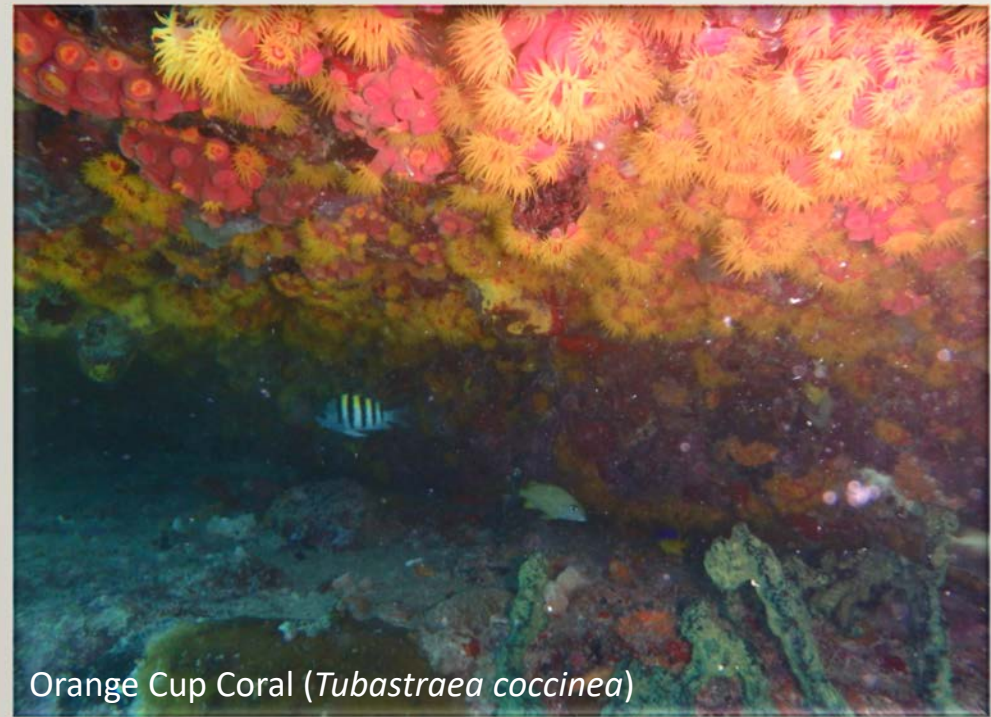
# What Are Cup Corals?

- Native to the tropical Indo-Pacific
- Azoothanthellate
- Primarily Inhabits Darkened Recesses in Reefs
- Highly Fecund
- Aggressive Spatial Competitors
- Resilient to Environmental Stress



# What Are Cup Corals?

- Orange Cup Coral (*Tubastraea coccinea*)
  - Introduced into the Caribbean in the 1940's
  - Now almost circumtropical
    - Gulf of Mexico
    - Caribbean Sea
    - Brazilian coast

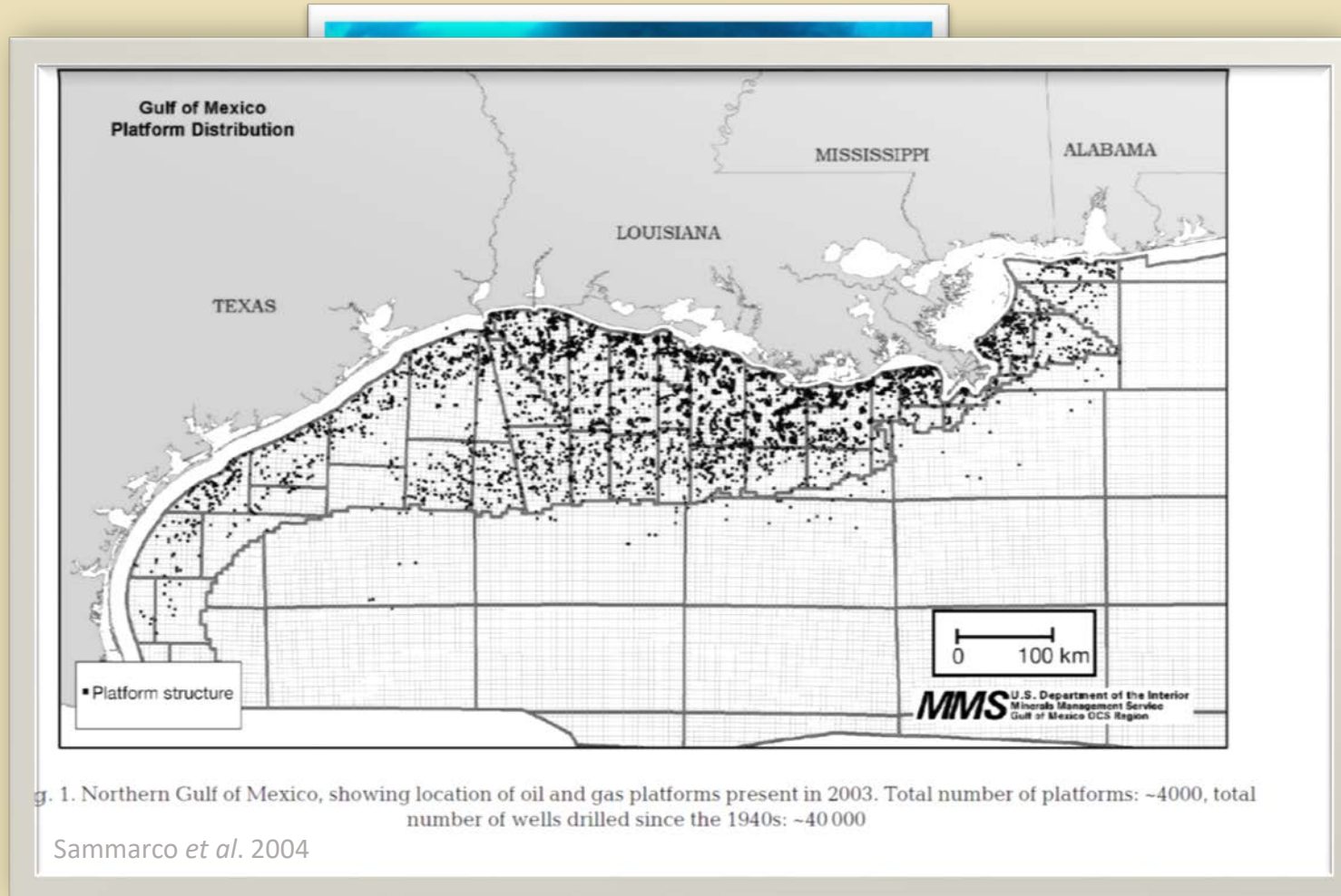


Orange Cup Coral (*Tubastraea coccinea*)

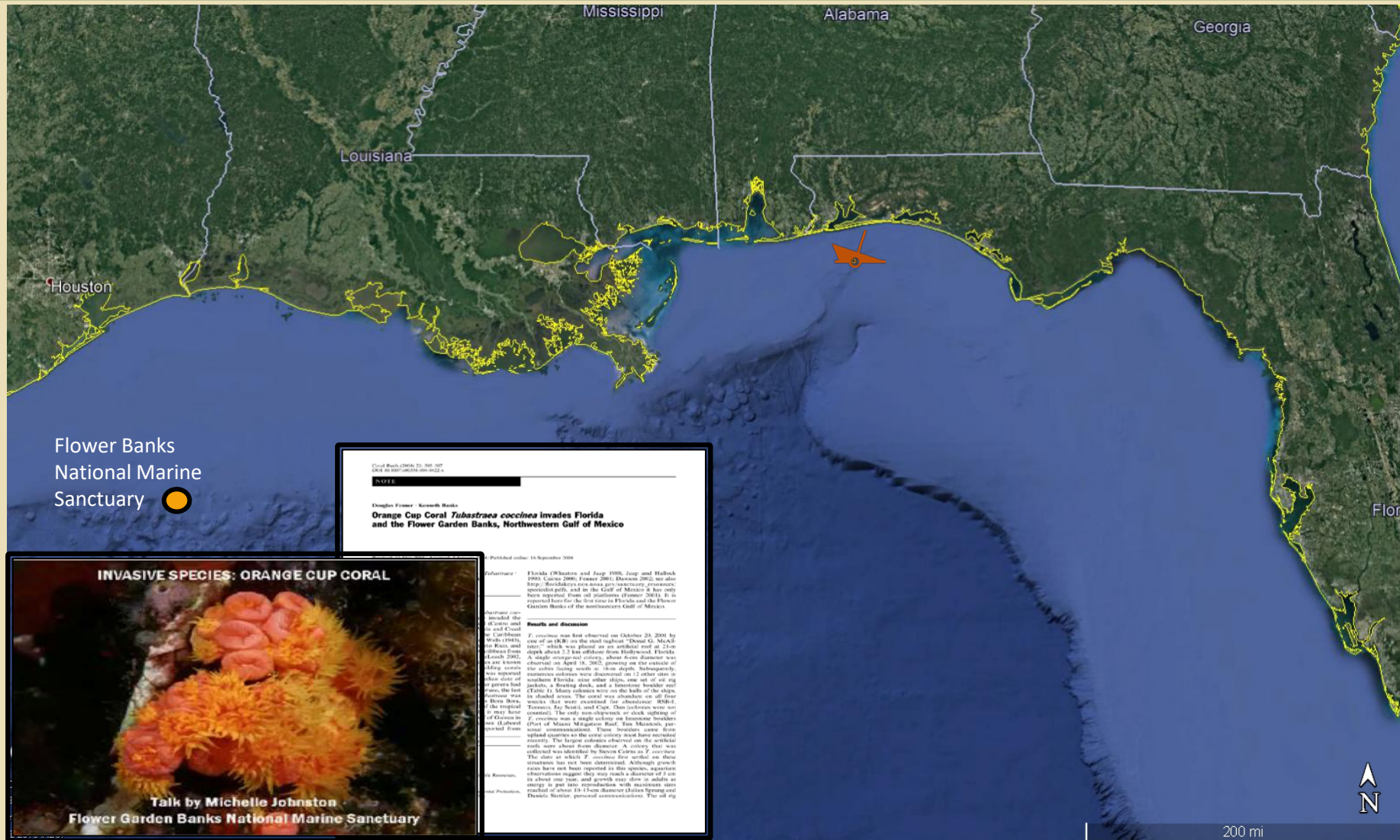




# Orange Cup Coral in the Gulf of Mexico & Florida



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Force E Scuba Center



# Orange Cup Coral --The Issue

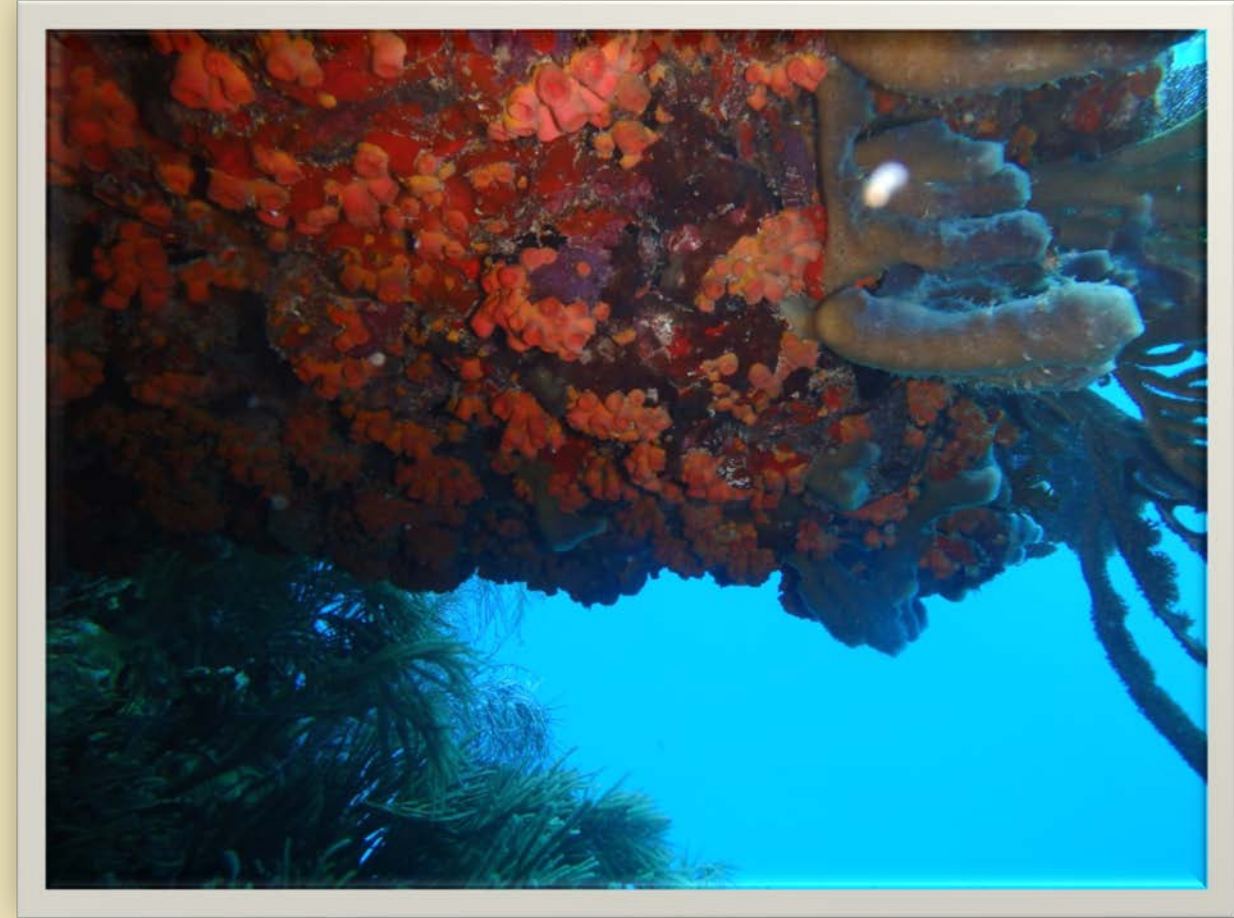
- Prized by Marine Aquarists
- Florida marine life collectors have asked FWC's fisheries managers to consider allowing collection





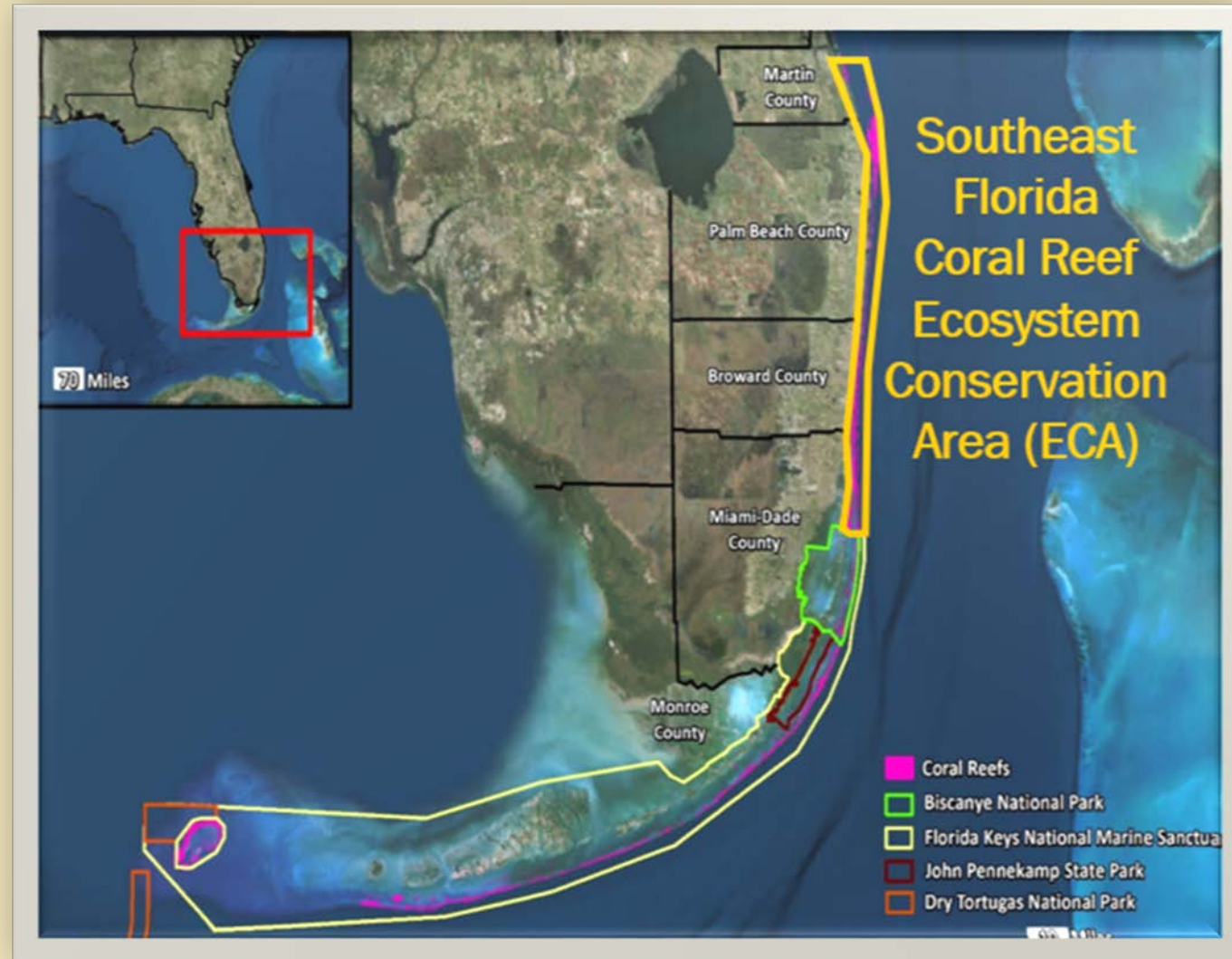
# So...What Is The Risk of Collecting?

- Our managers asked if collecting would cause the spread of orange cup coral at existing locations and to new locations?

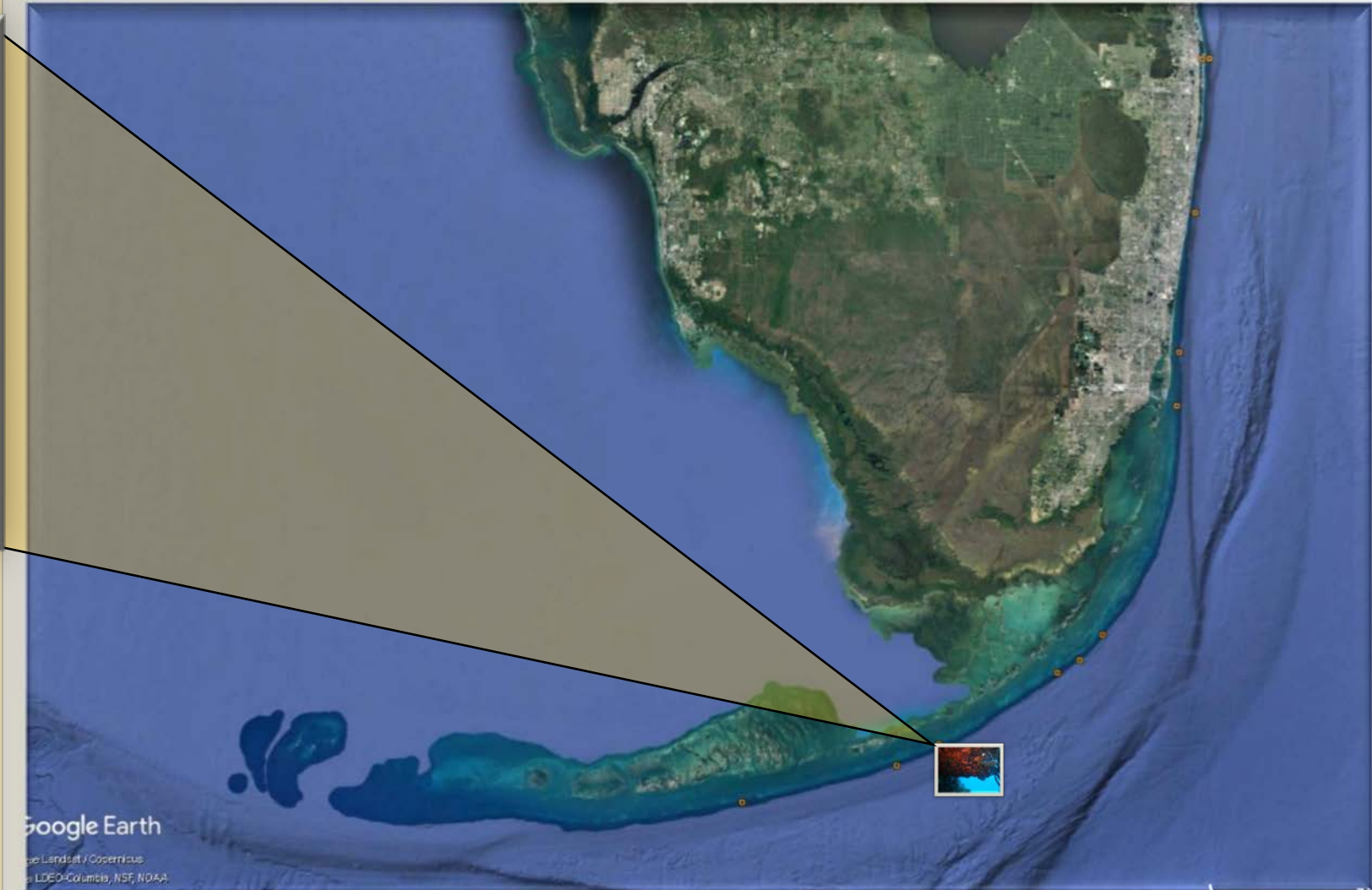




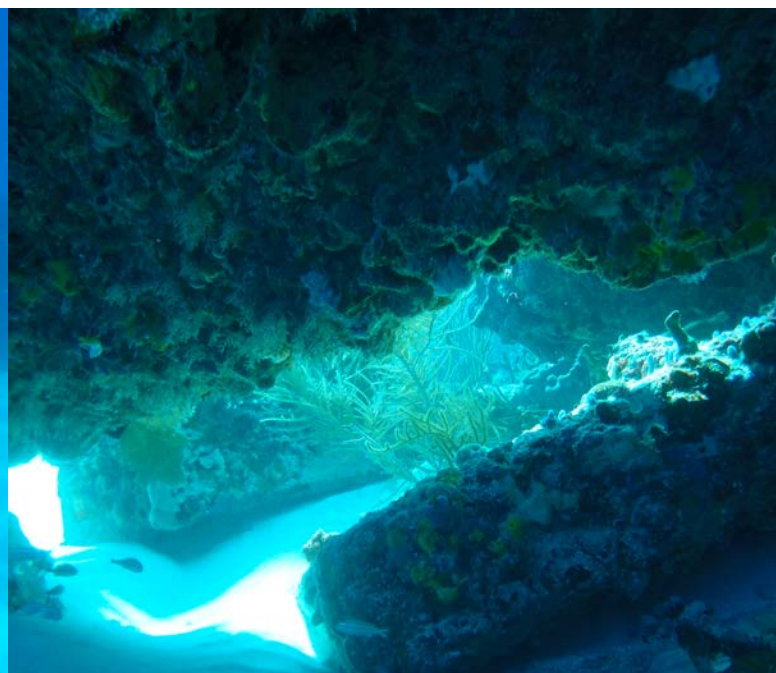
# Orange Cup Coral in the Gulf of Mexico & Florida



# Studies At The Long Key Artificial Reef







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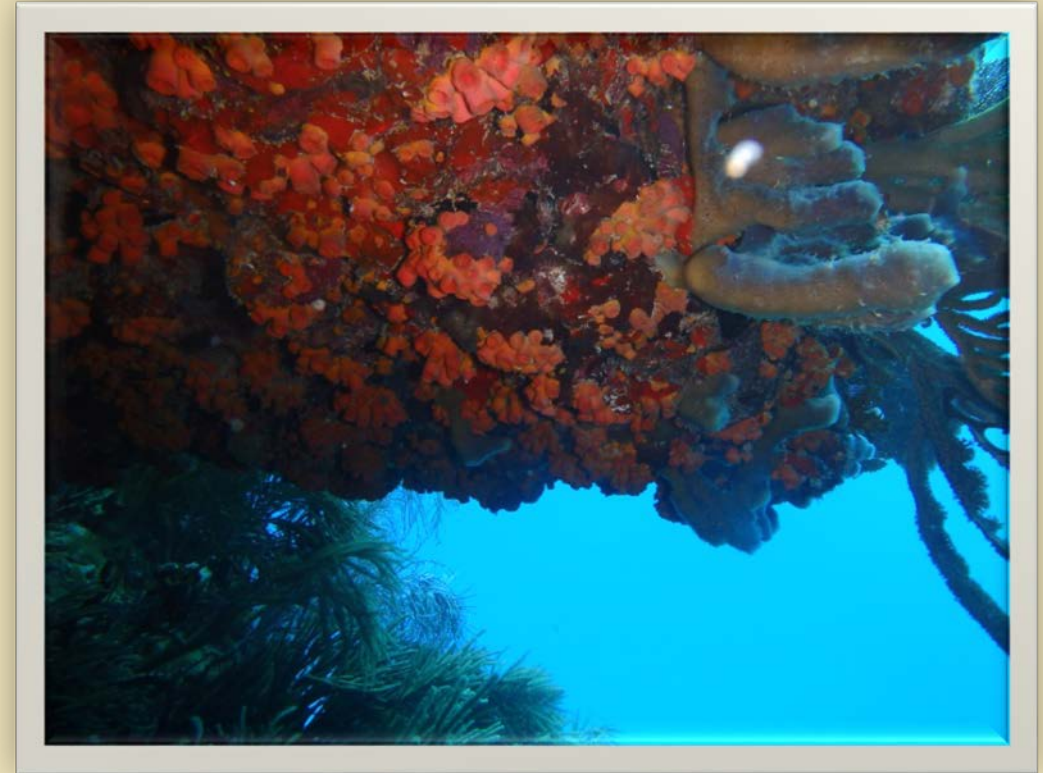
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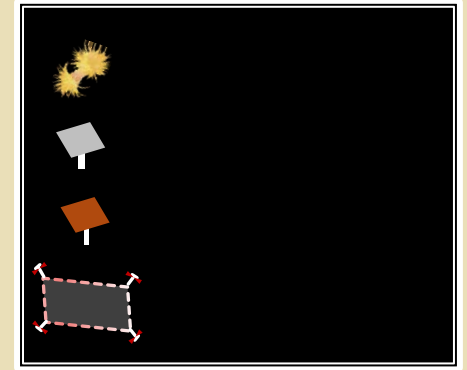
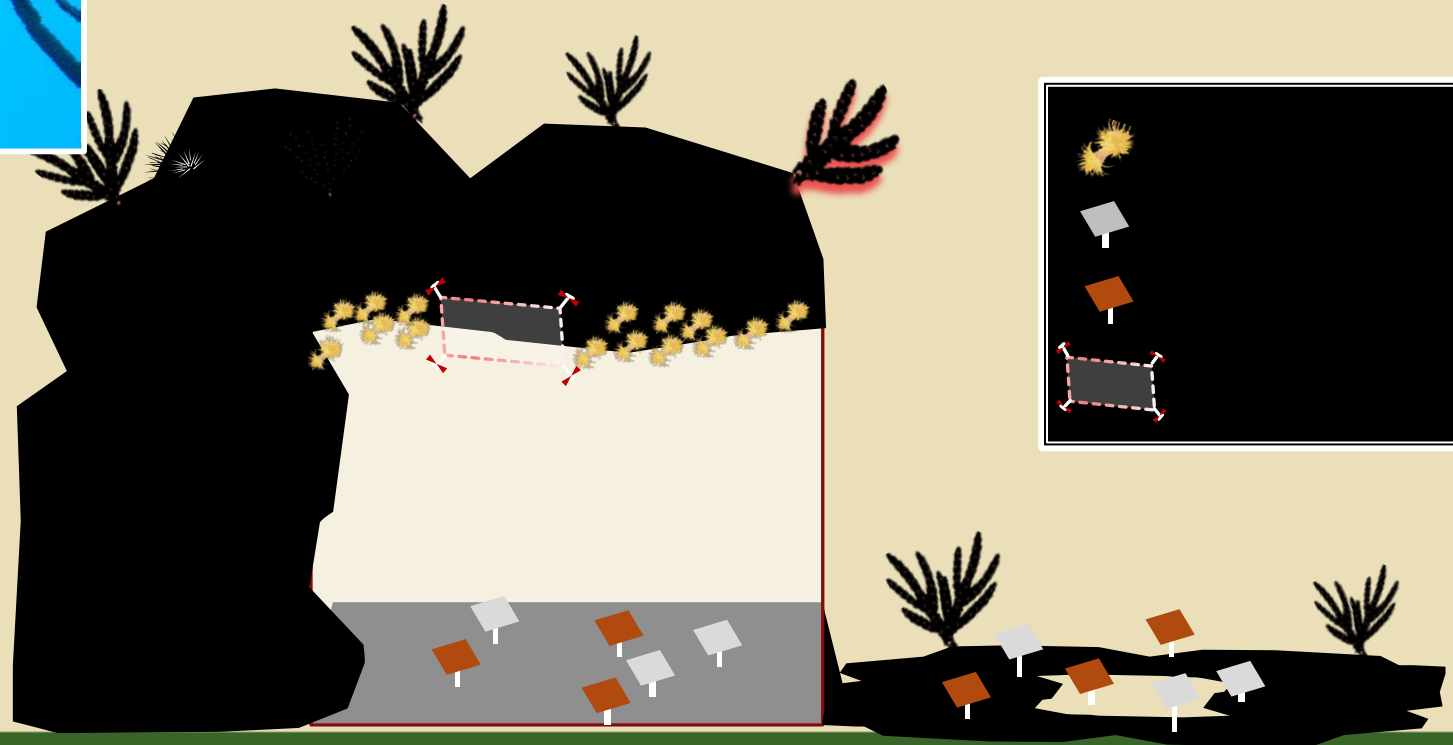
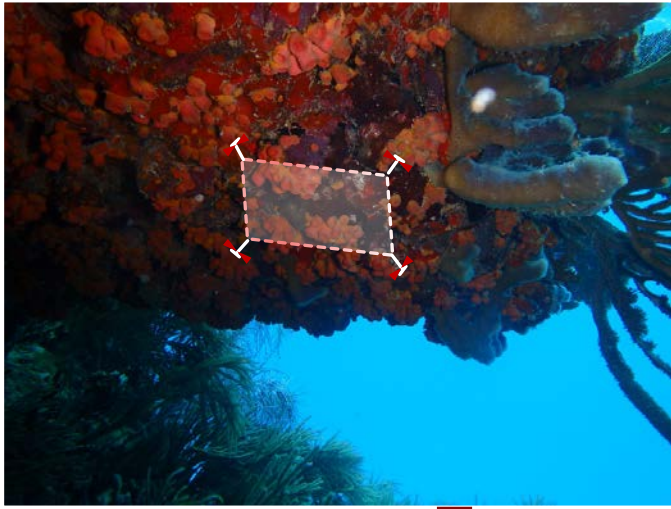


# Studies At The Long Key Artificial Reef

- Assess the effects of the removal of orange cup coral (*Tubastrea coccinea*) from the artificial reefs within the FKNMS – Can we detect enhanced recruitment?

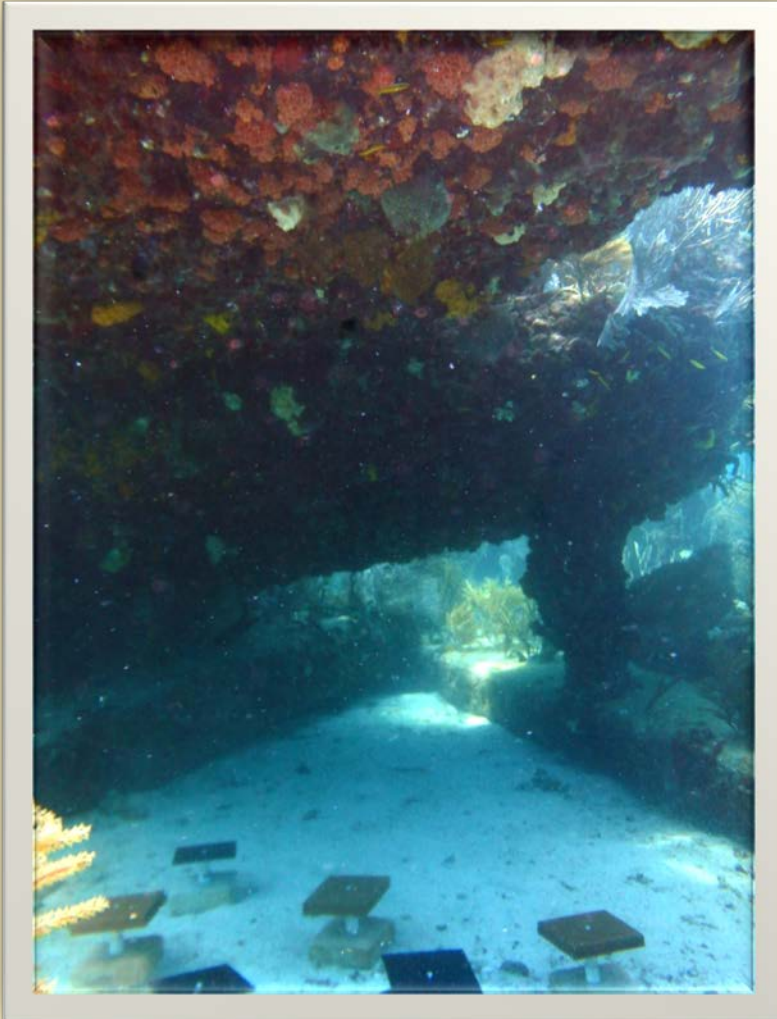


# Manipulative Experiment

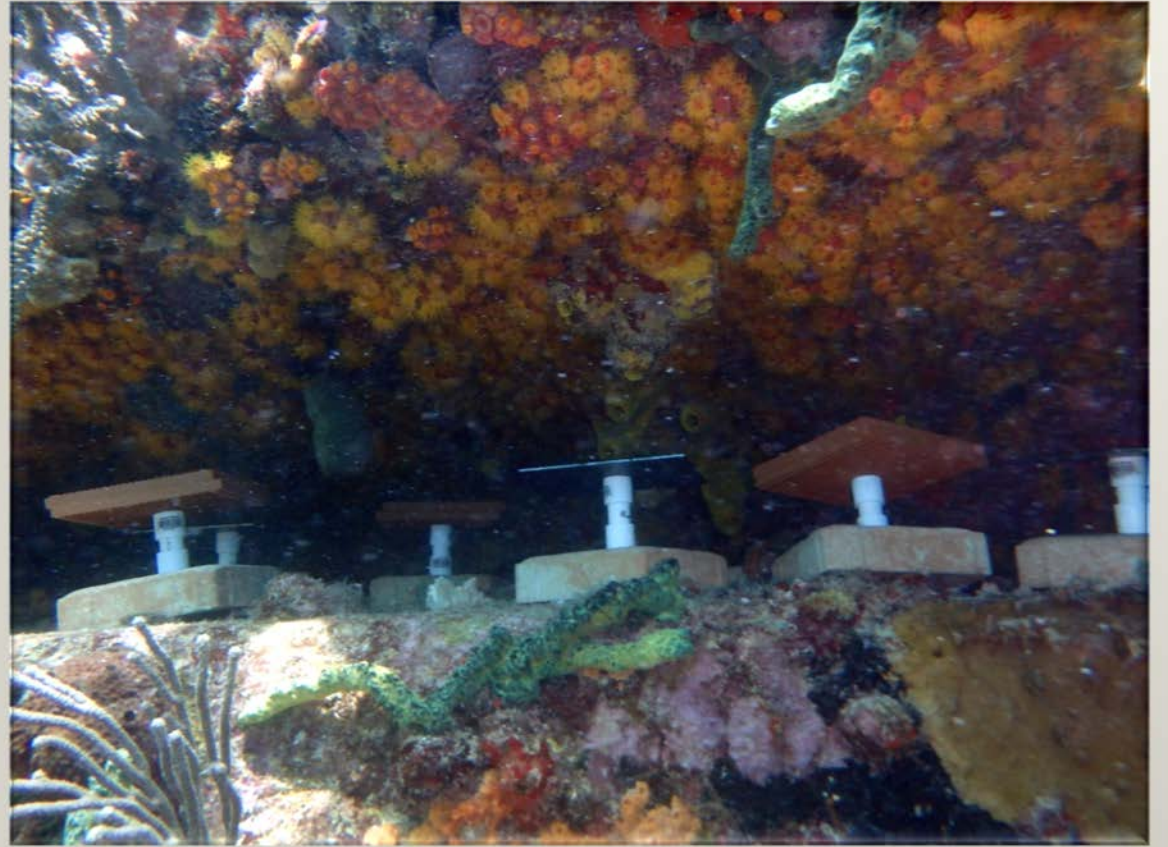
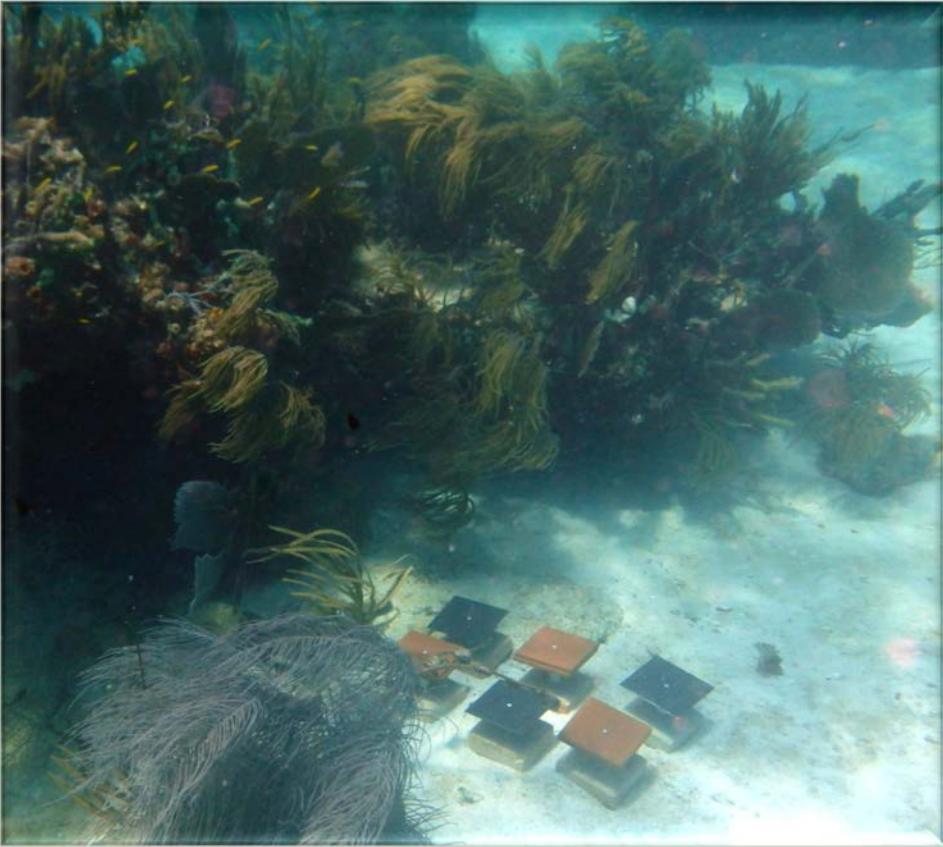




# Manipulative Experiment

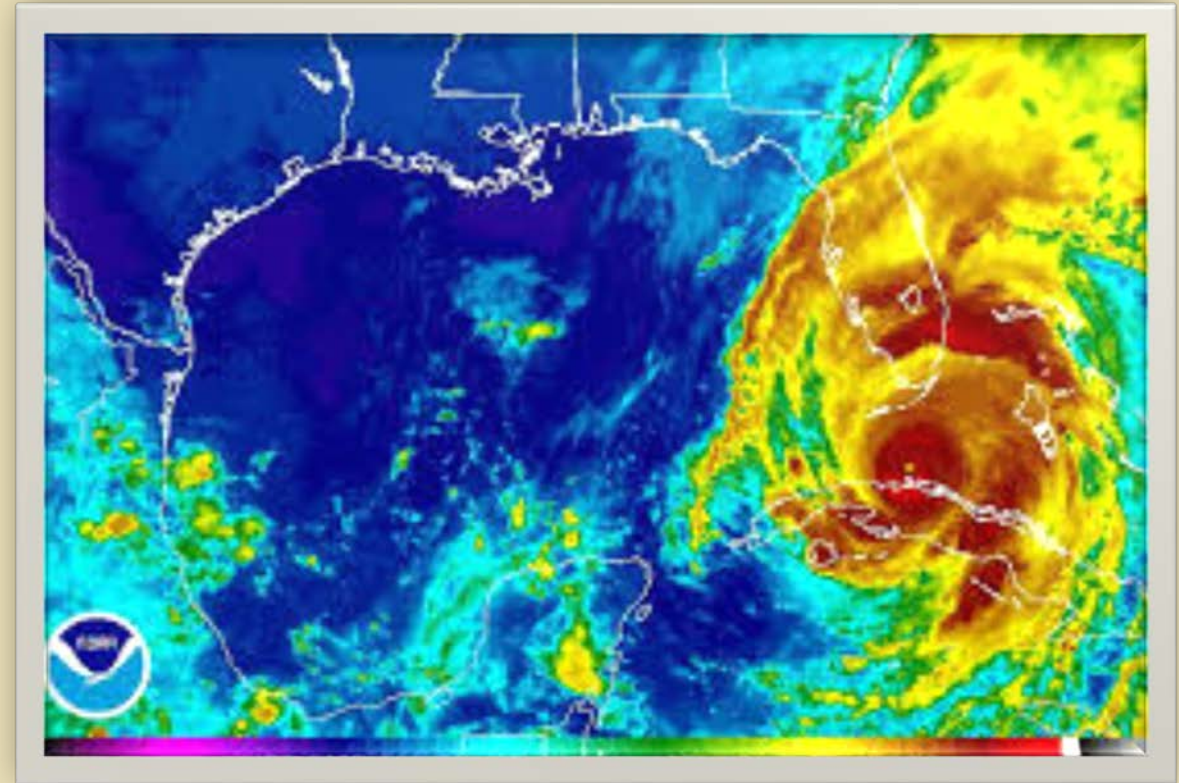


# Manipulative Experiment





# Setbacks



# So What Have We Found?...

- Morphologically distinct polyps at the Long Key Artificial Reef





# Other Cup Coral Species in the Atlantic



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## Aquatic Invasions Records

### Expansion of the invasive corals *Tubastraea coccinea* and *Tubastraea tagusensis* into the Tamoios Ecological Station Marine Protected Area, Brazil

Amanda G. Silva<sup>1</sup>, Régis P. Lima<sup>2</sup>, Adriana N. Gomes<sup>2</sup>, Beatriz G. Fleury<sup>1</sup> and Joel C. Creed<sup>1\*</sup>

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## ■ Brazil – *Tubastraea tagusensis*



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## Research article

### A new coral species introduced into the Atlantic Ocean - *Tubastraea micranthus* (Ehrenberg 1834) (Cnidaria, Anthozoa, Scleractinia): An invasive threat?

Paul W. Sammarco<sup>1\*</sup>, Scott A. Porter<sup>2</sup> and Stephen D. Cairns<sup>3</sup>

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<sup>2</sup>EcoLogic Environmental Consulting, 1542 Barrow St. Houma, LA 70361 USA

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## ■ GOM – *Tubastraea micranthus*





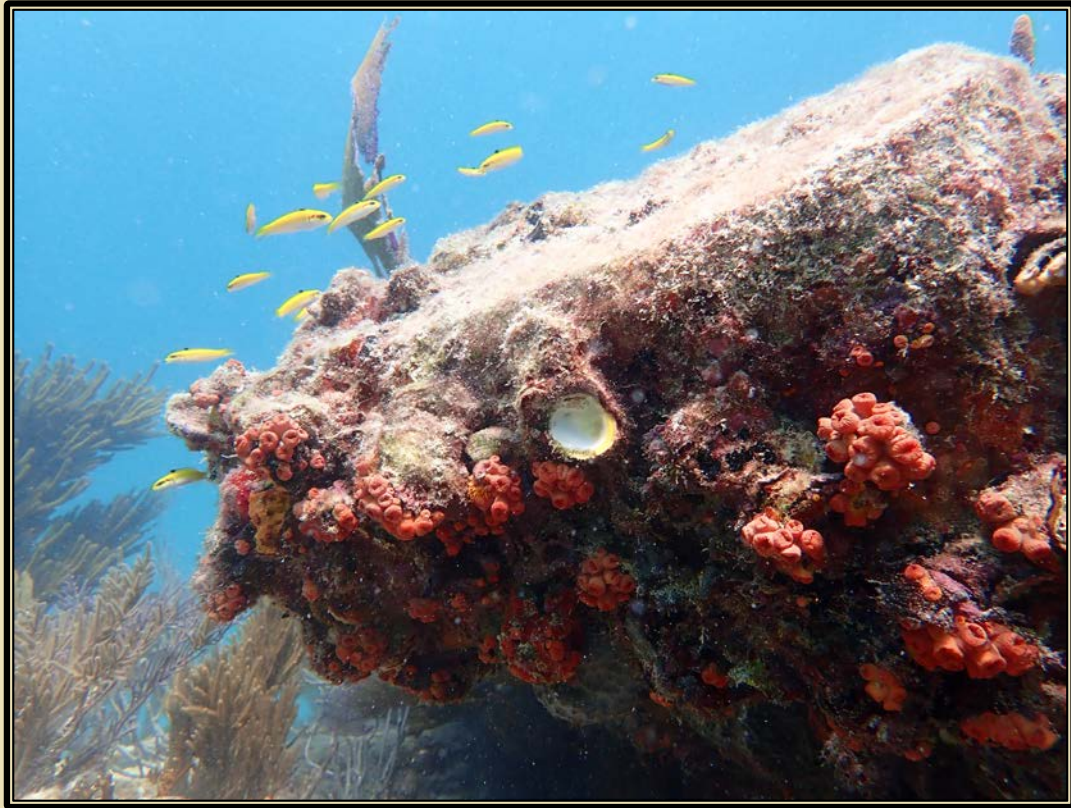
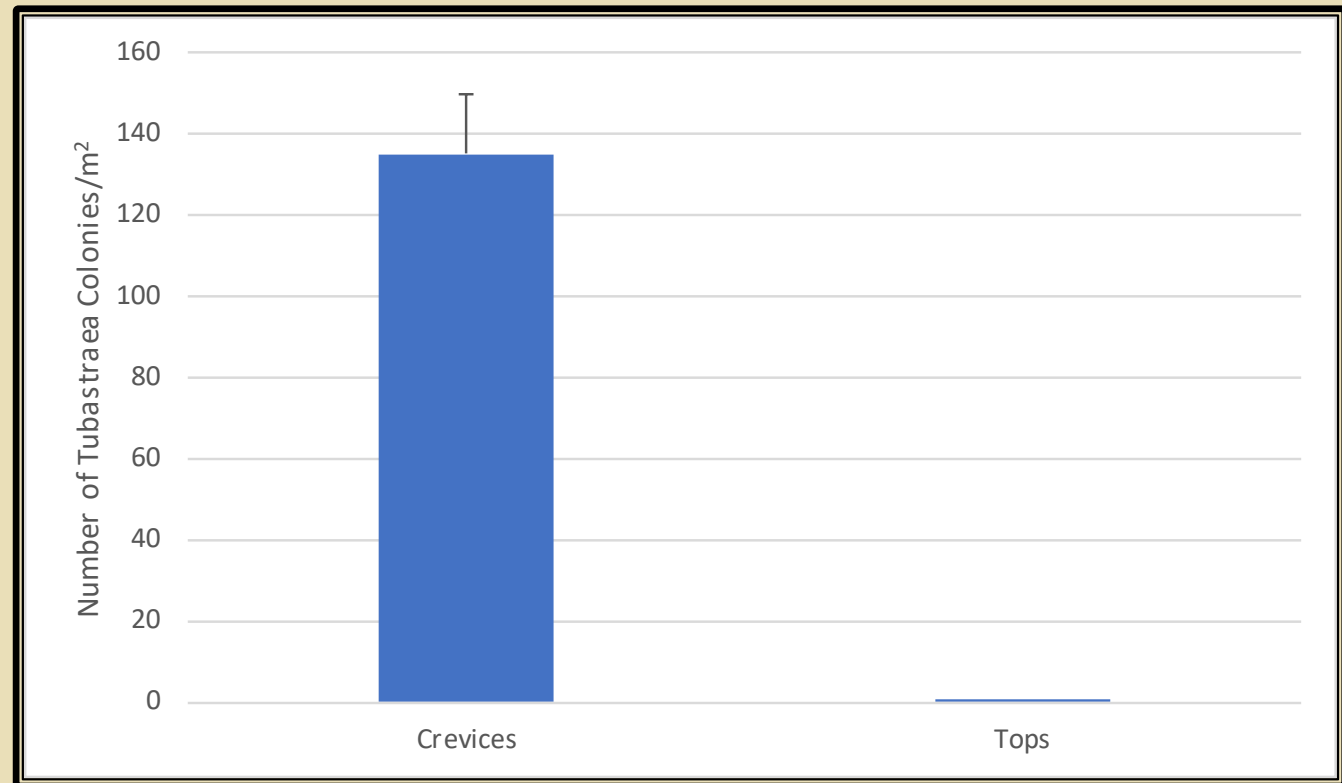
# So What Have We Found...

- Genetic evidence suggest that there are multiple species invading Florida waters
- Two of the species invading Florida waters are also invading Brazilian waters
  - Genetically they are either the same or very similar



# So What Have We Found...

- *Tubastraea* confined to darkened crevices?






# Risk to The Coral Reef Ecosystem

- Largely confined artificial structures; darkened crevices in shallow water
- Has it successfully colonized the darkened recesses of natural reefs?
  - Much of the hard surface area of reefs lies within crevices, caves, and other cavities

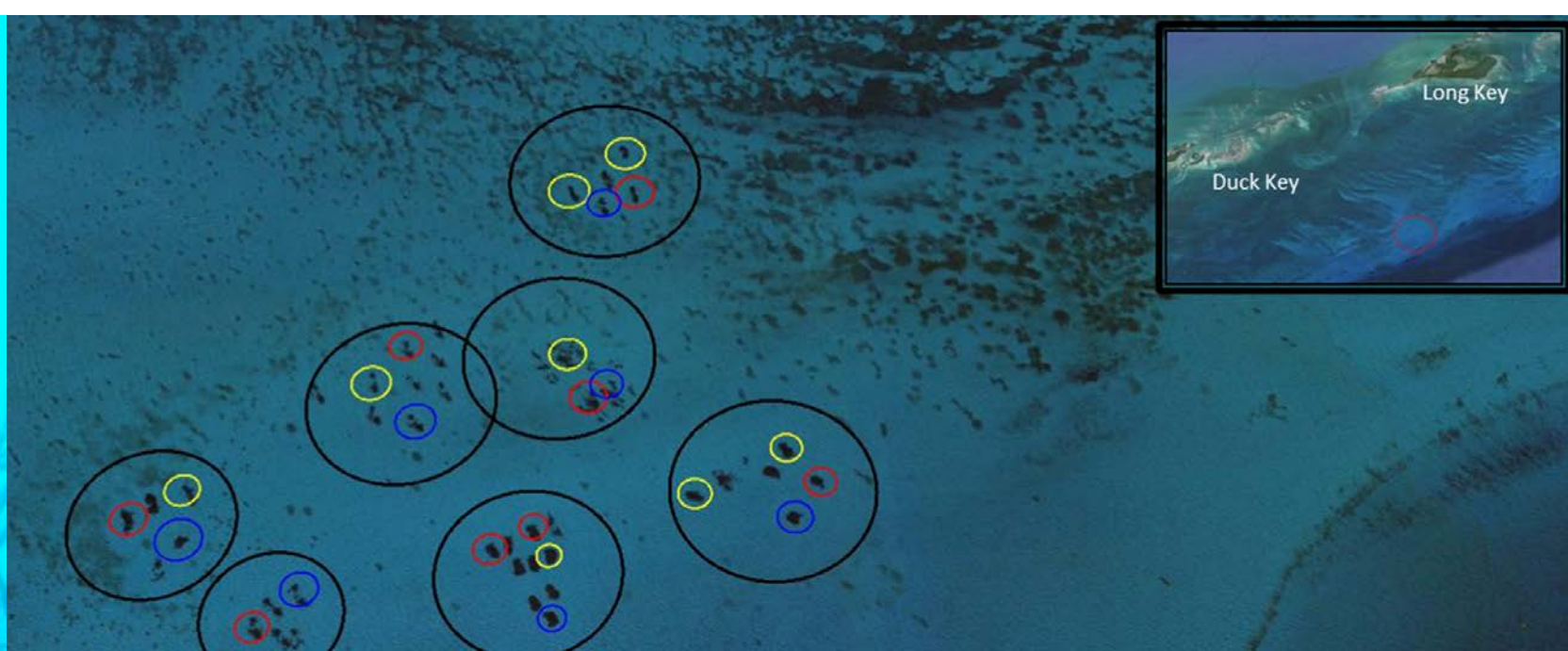




An underwater photograph of a coral reef. The scene is filled with various types of coral, including branching corals and large, flat, plate-like corals. The colors are vibrant, with shades of orange, yellow, and red. A dark, circular overlay is positioned in the upper left corner, containing the text "Risk to The Coral Reef Ecosystem?".

# Risk to The Coral Reef Ecosystem?





# So...What Is The Risk of Collecting?

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New Manipulative Study in the Works



# Questions

