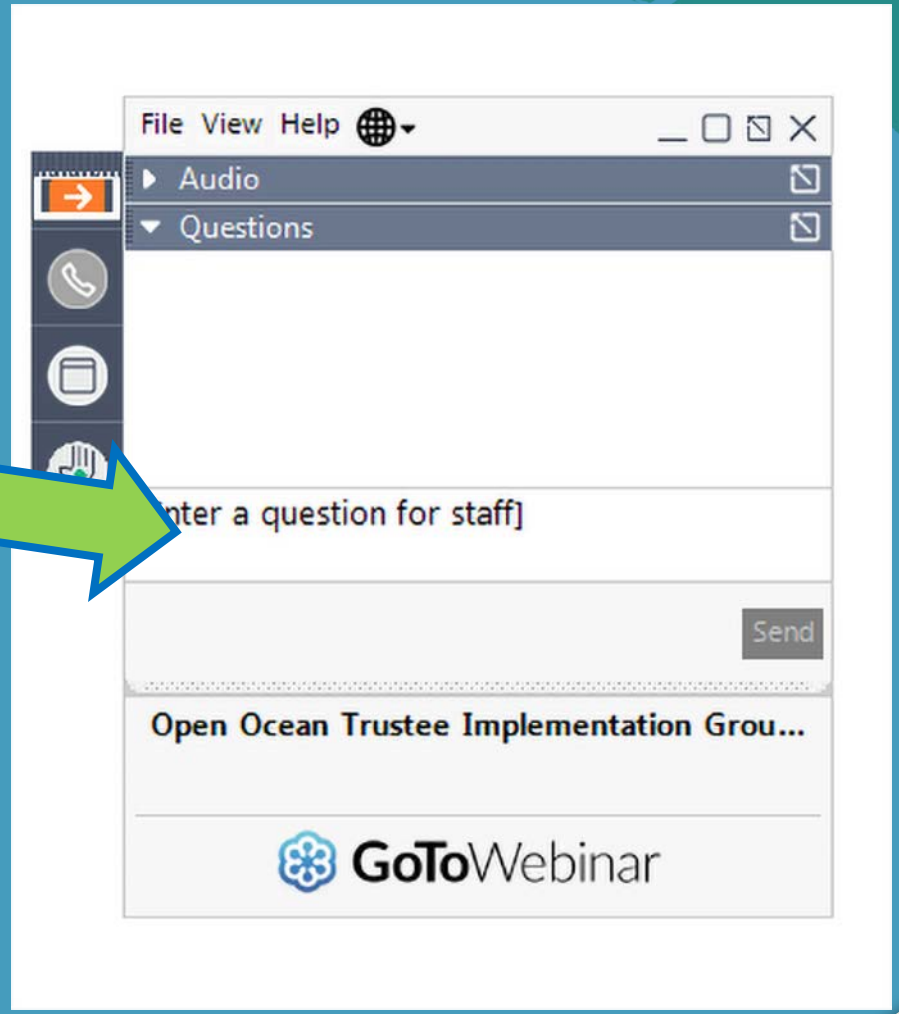
Open Ocean Restoration: Mesophotic and Deep Benthic Communities

Special Session: 1 to 2 p.m. Central Time

Webinar Participation

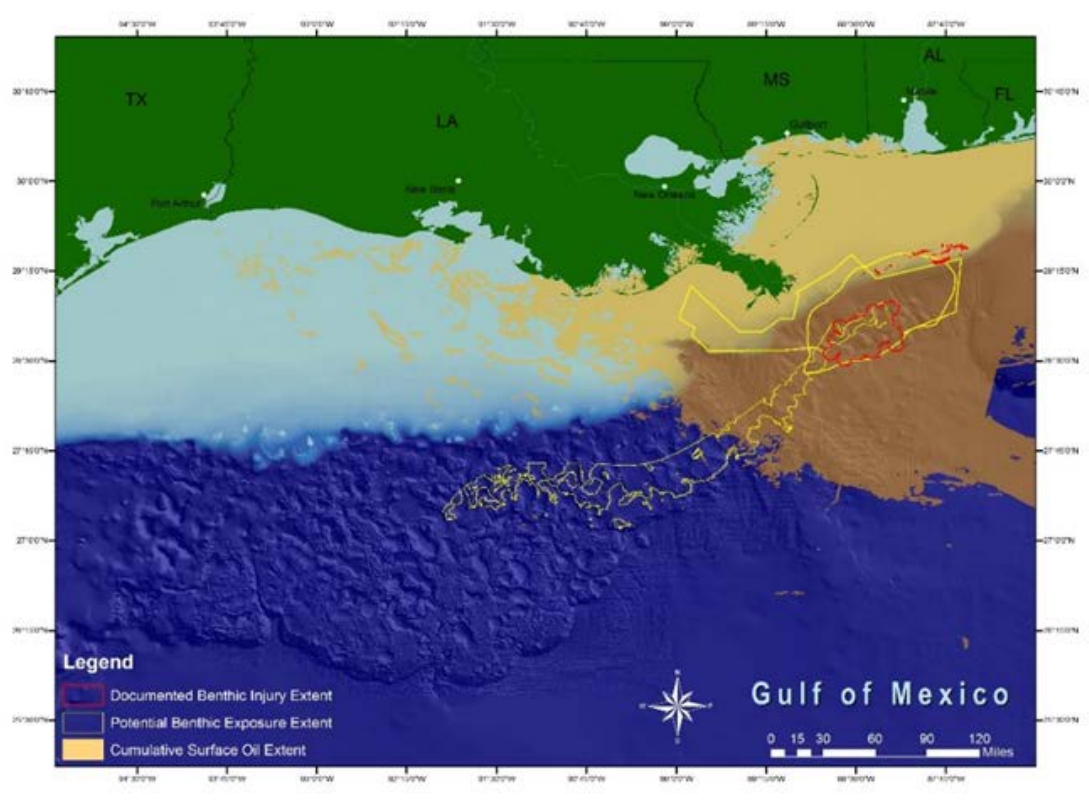
- If you're using a phone, turn off your computer's microphone and speakers
- Please use the "Questions" box to type questions for the Q&A session
- Presentation will be posted on www.gulfspillrestoration.noaa.gov
- See the chat box for a link to a Mesophotic and Deep Benthic Communities fact sheet



Special Session Agenda

- Mesophotic and Deep Benthic Communities Restoration overview
- Implementation planning phase project updates
- Stakeholder engagement updates
- Questions and answers

Mesophotic and Deep Benthic Communities Restoration Projects

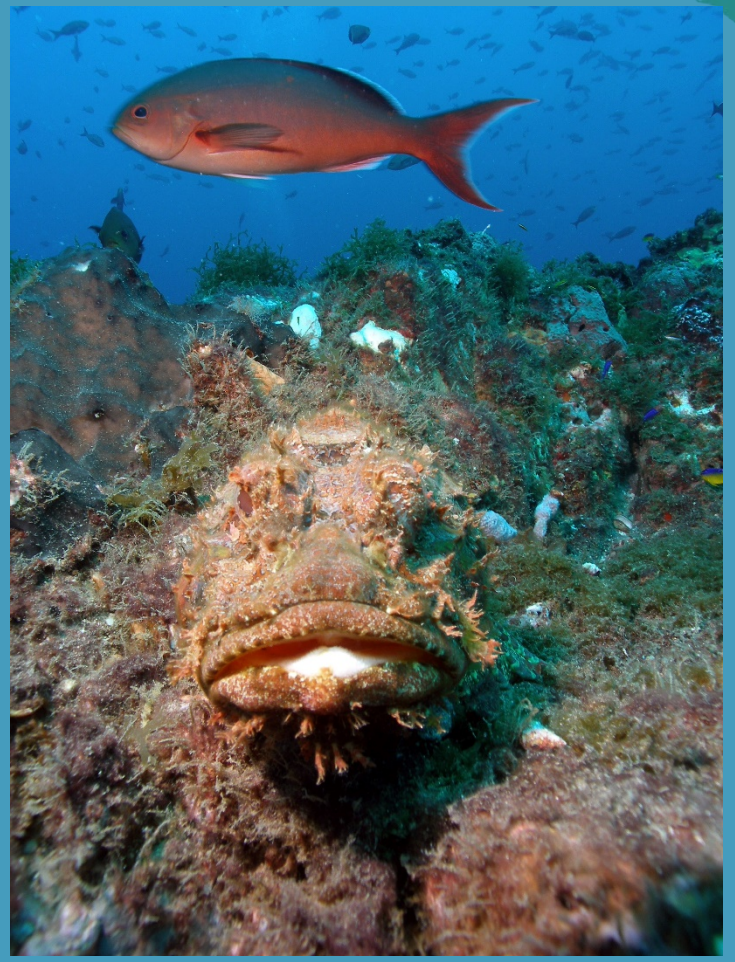


Quantified injury to over 2,000 km^2 of injured benthic habitat and substantial losses to resident corals and fish.

- Mapping, ground-truthing, and predictive habitat modeling project
- Habitat assessment and evaluation project
- Active management and protection project
- Coral propagation technique development project

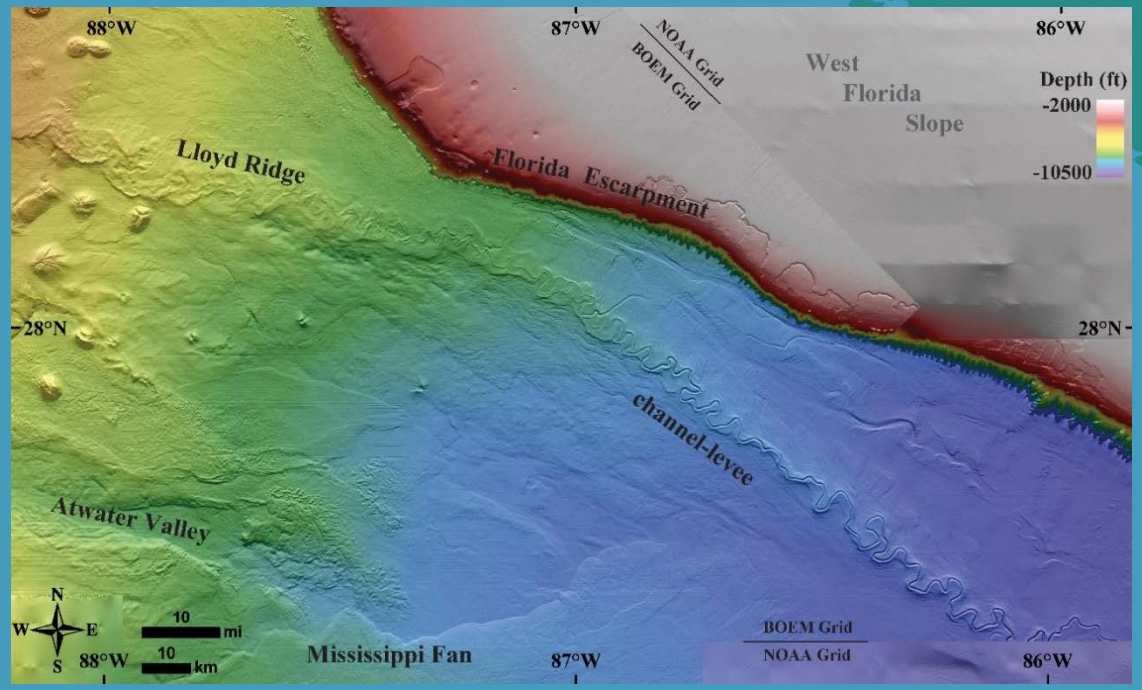
Building a Strong Foundation for Restoration

- Prioritize geographic areas for implementation
- Ensure transparency and public input
- Stakeholder engagement
- Partnership Opportunities
- Data sharing and communication



Mapping, Ground-truthing, Predictive Habitat Modeling Project Objectives

- Document the abundance and distribution of MDBC
- Inform management and enhance resiliency by providing high resolution maps and habitat information
- Improve the effectiveness and cost efficiency of future mapping efforts
- Inform restoration by refining predictive models of habitat suitability



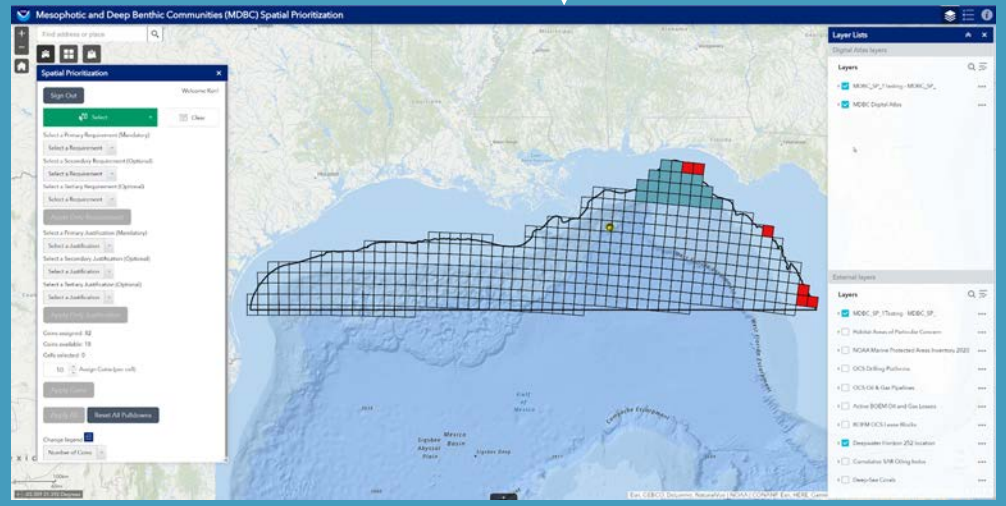
Estimated Duration: 7-8 years
Estimated Budget: $35.9 million

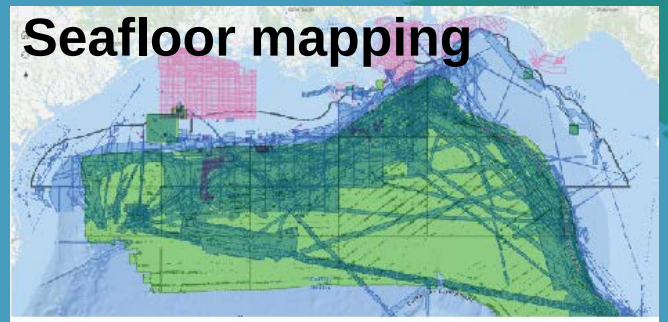
Project Implementation Planning Highlights

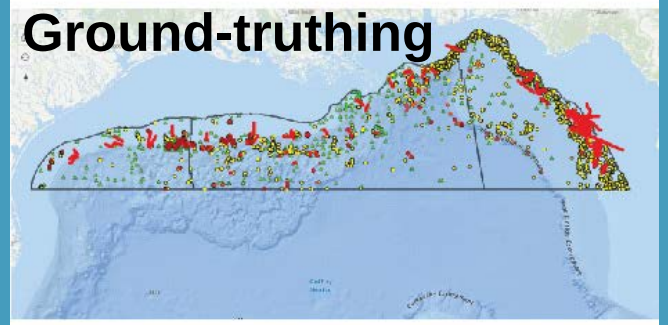
Release of MGM Geospatial Inventory

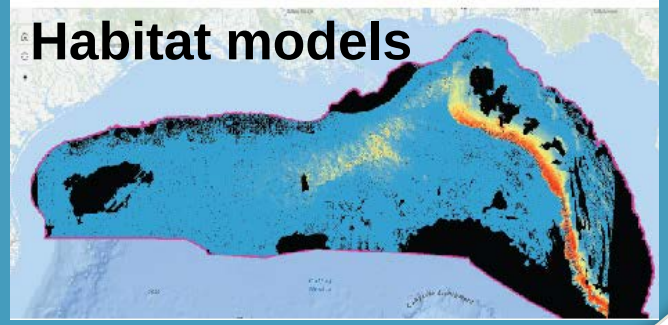
Spatial Prioritization underway!

FY22 Operational Planning
- Mission plans
- Partner Agreements









Stakeholder Engagement

Spatial Prioritizations

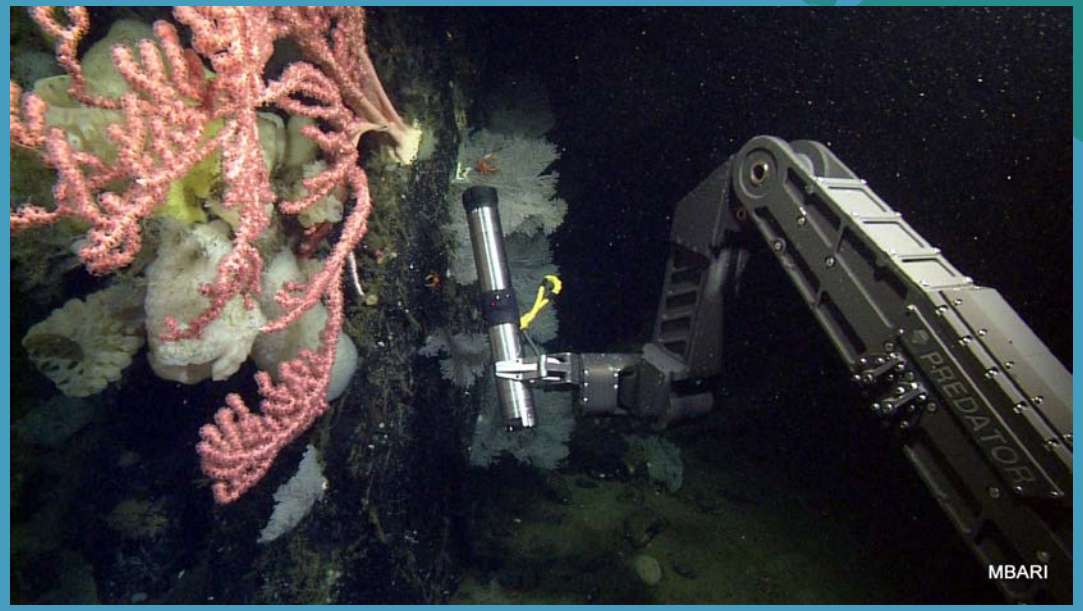
Mapping, Ground-truthing and Modeling Subject Matter Expert Summits

Technical Memoranda
- MGM Inventory
- Spatial Prioritization
- Gap Analysis
- MGM Best practices

Ocean Sciences Talks and Town hall

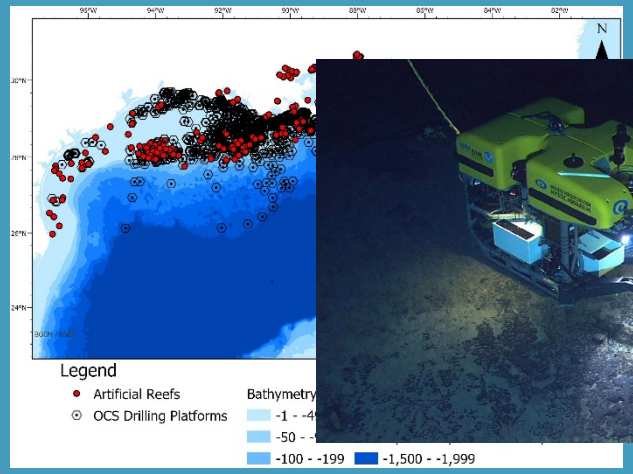
Habitat Assessment and Evaluation Project Objectives

- Document changes to structure and function of MDBC impacted by the DWH oil spill and other threats
- Establish environmental baseline conditions and changes over time around impacted and healthy MDBC
- Develop dispersal models for coral larvae
- Provide critical information to prioritize and support MDBC protection and management



Estimated Duration: 7-8 years
Estimated Budget: $52.6 million

Project Implementation Planning Highlights



Stakeholder Engagement

Engagement in FY 21:

- Smithsonian National Museum of Natural History
- University of Southern Mississippi
- Deep Sea Biological Society

Upcoming engagements in FY22:

- Habitat assessment Workshop – Benthic Invertebrates
- Habitat assessment & Habitat for Fish (H4F) Workshop – Fish and mobile invertebrates
- Ocean Sciences Conference
- Gulf of Mexico Conference
- Academics

Active Management & Protection Project Objectives

- Extend the education and outreach components of existing protected area management frameworks
- Coordinate with the agencies and stakeholders involved in establishing protections
- Assess opportunities to manage and protect sensitive MDBC
- Reduce threats to MDBC and increase ecosystem resilience

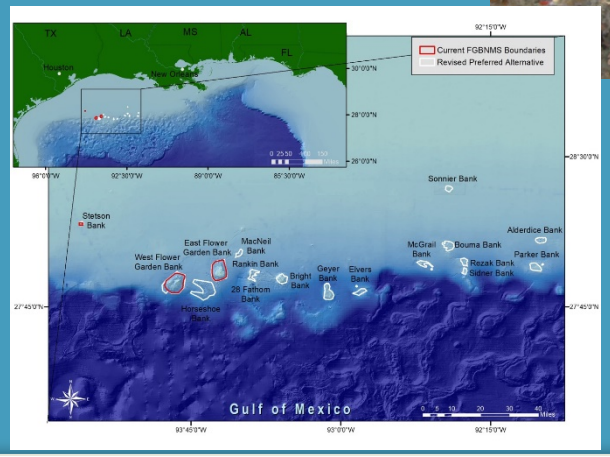
Estimated Duration: 7-8 years
Estimated Budget: $20.6 million

Project Implementation Planning Highlights

- Education & Outreach –
  - Website / Social media
  - Partnerships (Universities, AZA, NGO'S)
  - Displays & Exhibits (Museums, Zoos & Aquariums, Nature Centers)
  - "Telepresence" – project expeditions
- Threat Reduction –
  - Marine Debris – assessment & removal
  - Invasive Species – management
  - Mooring buoy - installation
  - Risk Assessment
- Protected Area Management –
  - Ongoing efforts to identify & protect MDBC areas (NOAA/ONMS, GMFMC/HAPC, BOEM)
  - Conduct socioeconomic analysis support

Education & Outreach

Threat Reduction

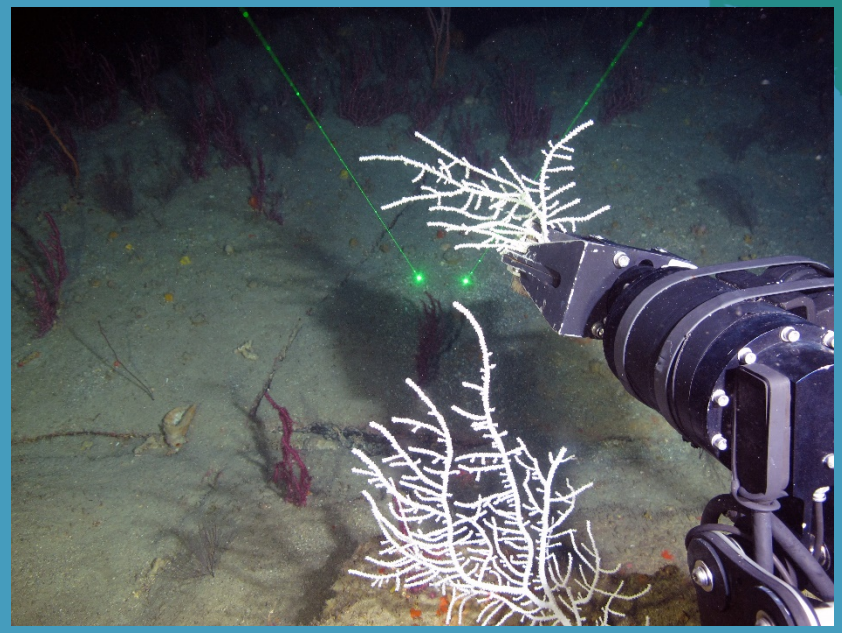


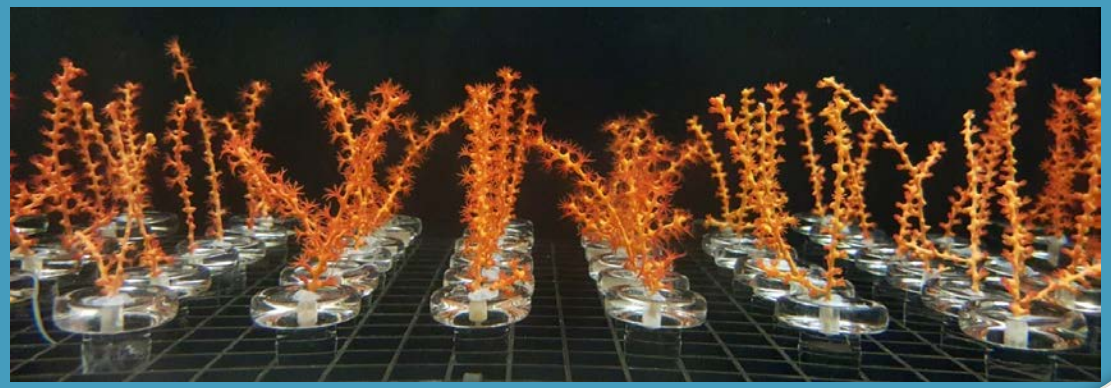
Protected Area Management

Coral Propagation Techniques Development Project Objectives

- Develop methods and techniques for effective enhancement of coral recruitment and growth.
- Assess the potential for applying successful methods at large scale for restoration.
- Fill critical knowledge gaps and inform future restoration efforts.

Estimated Duration: 7-8 years
Estimated Budget: $16.9 million





Project Implementation Planning Highlights

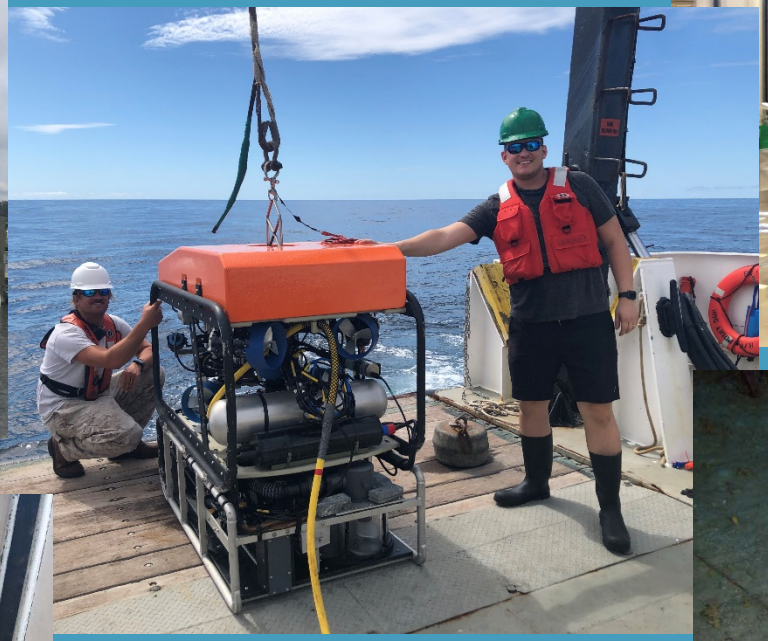
Products from our Planning:

- Topical briefs on coral genetics, reproduction, injury from DWH
- New datasets and maps for the distribution of injured species
- New cold water aquarium designs
- Protocols and procedures for care and feeding of deep-sea corals

Highlights of our effort:

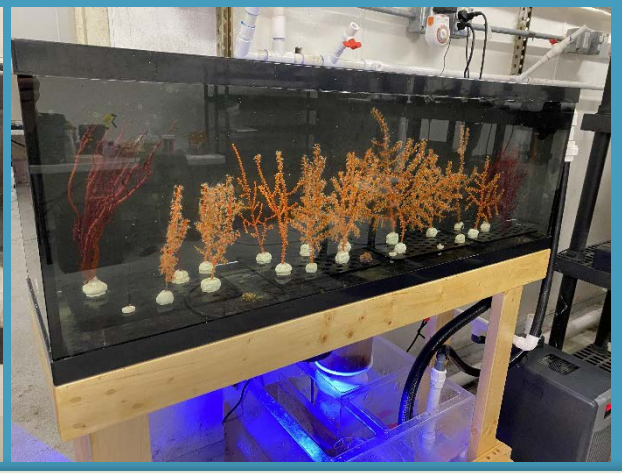
- Oral presentation to Deep Sea Biology Society in Brest , France
- Meeting and tours with public aquaria in MS, FL, LA, SC interested in propagation & outreach
- Network of expertise in coral biology, technical diving, and restoration techniques

Fieldwork Highlights



Laboratory Highlights

- Tanks in 2 federal labs, one coming online soon*
- Corals are doing very well, polyps open and feeding
- Visible growth at both labs, regeneration in 2 weeks
- Spawned in captivity at the full moon!
- Husbandry SOPs and tank designs will be available



Stakeholder Engagement

Year 1 engagements:

- Association of Zoos and Aquaria
- Coral Restoration Consortium
- DSBS (international)

- Audubon Aquarium of Americas
- State Aquaria in MS, SC, FL
- Mote Marine Lab
- FL Institute of Oceanography

- US Navy Tech Diving Team
- Wood's Hole Oceanographic Institute
- Force Blue Technical Diving Team

Upcoming engagements:

- Reef Futures Conference
- Int. Symposium of Deep Sea Corals

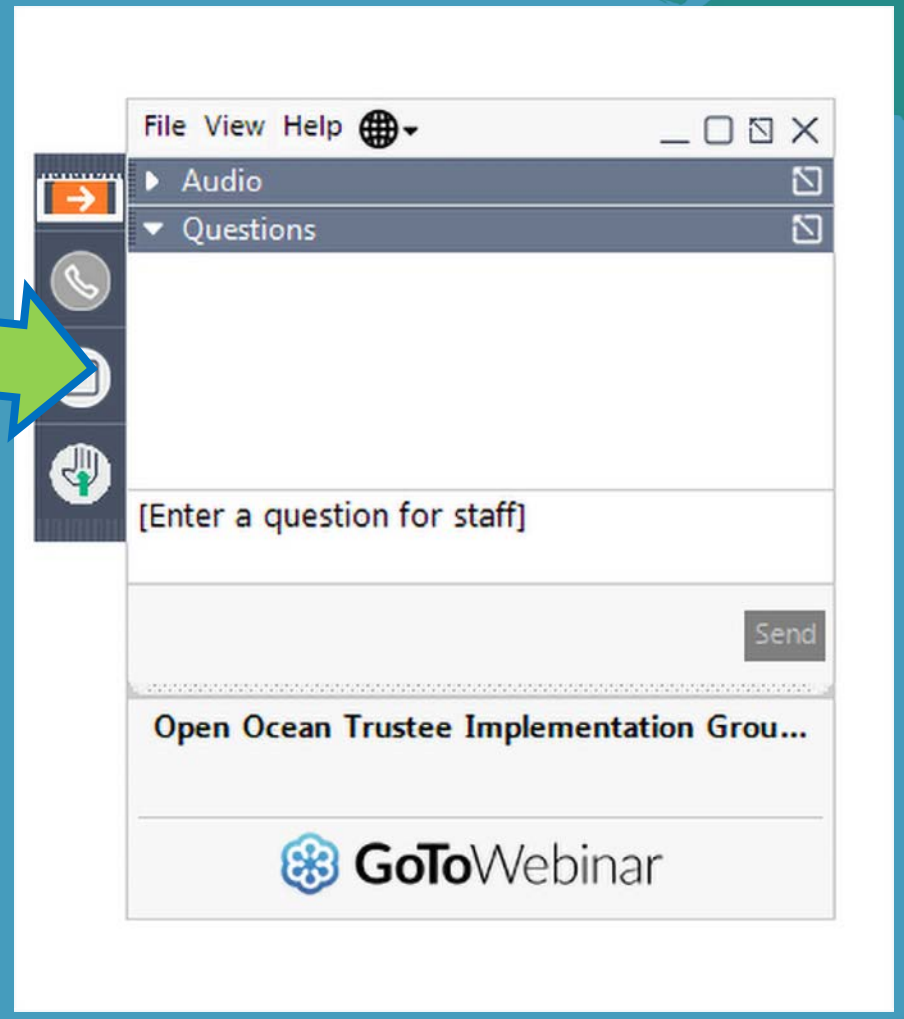
- State Aquaria in TX, GA, NC
- Moody Gardens Aquarium
- Monterey Bay Aquarium

- U Miami
- FAU/Harbor Branch
- SECORE
- MBARI

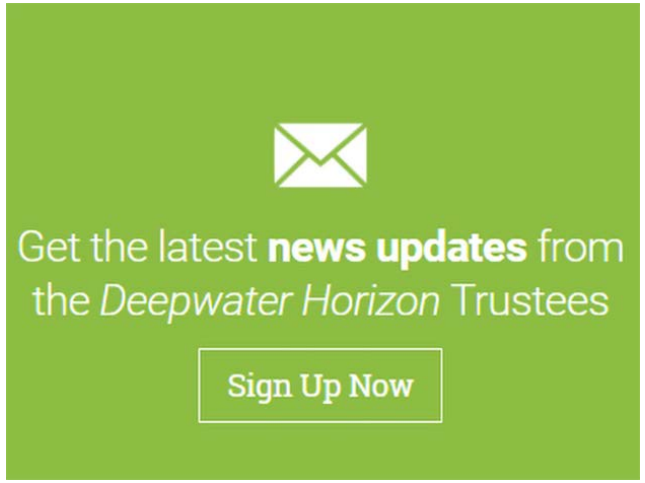
Questions?

Questions

- Please type your questions in the “Questions” box
- Remember to take a look at the fact sheet linked in the chat
- We’ll do our best to get to as many as possible



Thank you



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