Open Ocean Restoration: Mesophotic and Deep Benthic Communities

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

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

Quantified injury to over 2,000 km² of injured benthic habitat and substantial losses to resident corals and fish.
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
Release of MGM Geospatial Inventory

Spatial Prioritization underway!

FY22 Operational Planning
- Mission plans
- Partner Agreements

Seafloor mapping
Ground-truthing
Habitat models
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
• 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
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
• 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
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?
• 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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