

BOEM

Bureau of Ocean Energy
Management

THE MARINE MINERALS PROGRAM: INFORMING LONG-TERM RESTORATION PLANNING THROUGH RESOURCE MANAGEMENT AND INNOVATIVE SCIENCE

February 6, 2020

Jessica Mallindine | jessica.mallindine@boem.gov | 504-736-7516



Noncompetitive OCS Sand

- “The Secretary may negotiate with any person an agreement for the use of Outer Continental Shelf sand, gravel and shell resources—
- (i) for use in a program of, or project for, shore protection, beach restoration, or coastal wetlands restoration undertaken by a Federal, State, or local government agency; or
- (ii) for use in a construction project, that is funded in whole or in part by or authorized by the Federal Government.” (Outer Continental Shelf Lands Act)



Functions and Priorities

- **Stewards of OCS non-energy marine minerals**
- **Facilitate access** to OCS sand for Federal, State, and local government agencies
- **Identify and evaluate** OCS sand resources (National Sand Inventory)
- **Manage multiple-use conflicts** (e.g., pipelines, telecom cables, navigation, and commercial fisheries)
- **Conduct research** to inform decisionmaking and manage risk
- **Provide for competitive and noncompetitive** leasing of OCS “non-energy” marine minerals



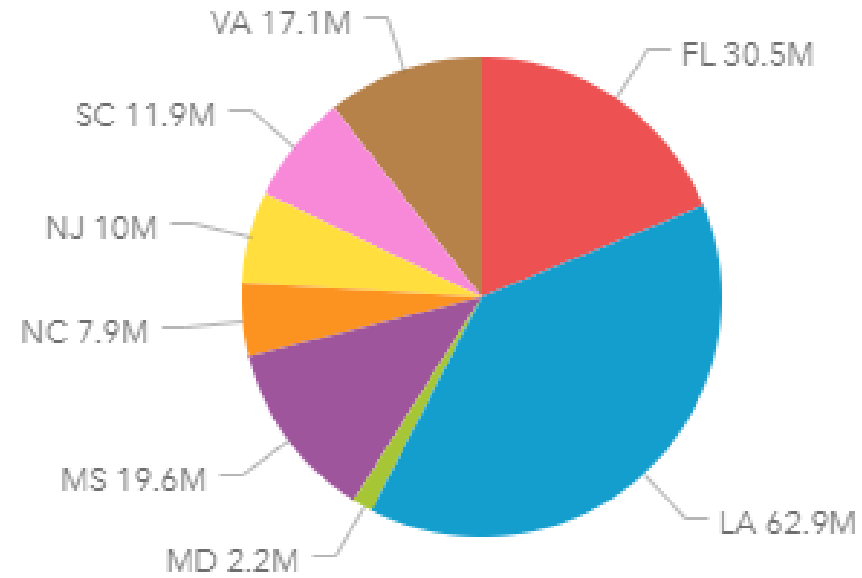
BOEM Staff Geologist inspecting newly placed OCS sand.

MMP Activity by State

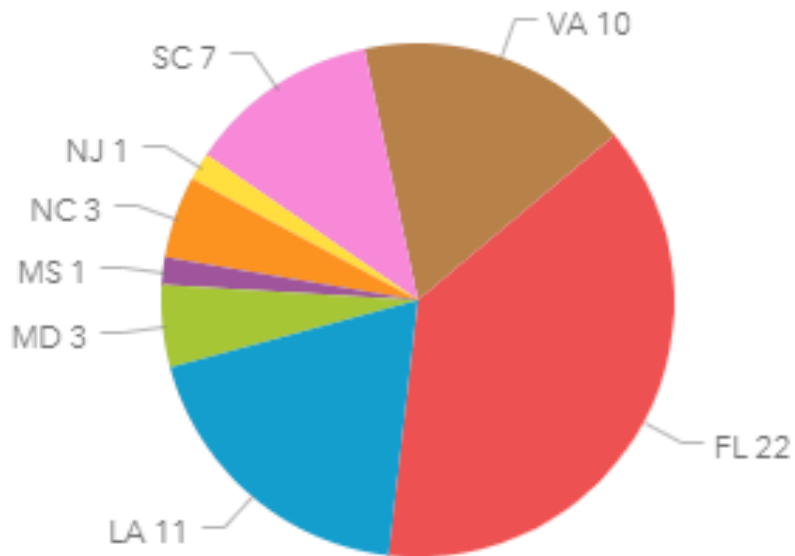


NASA Wallops Island, VA

Sand in Cubic Yards Allocated Per State



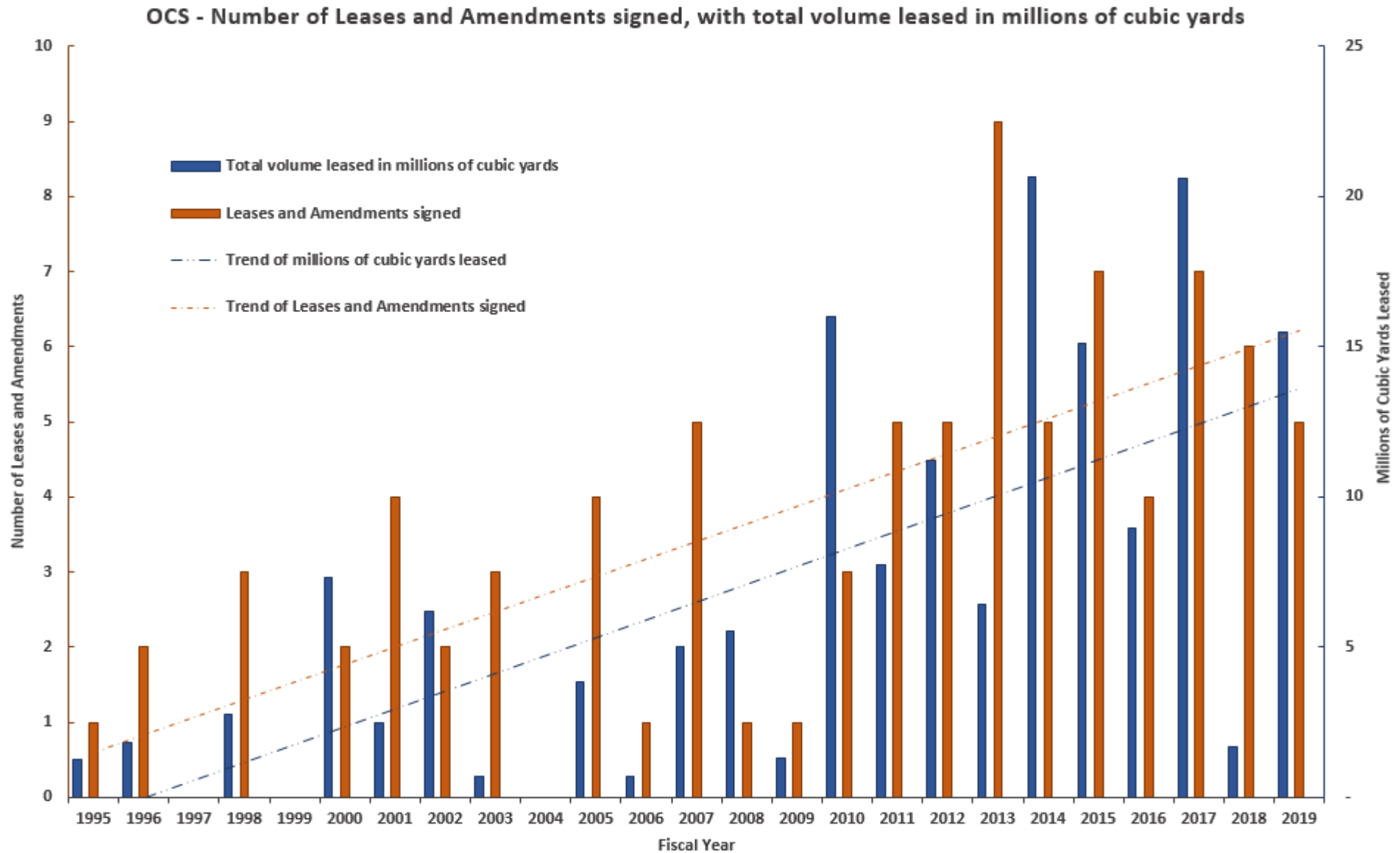
Number of Projects by State



Caminada Headlands, LA



Increasing Demand for OCS Sand



Why OCS Sand?

Advantages over nearshore sand

- Higher quality (coarser grain size and less mud)
- Offshore excavation does not affect wave climate at shoreline
- Excavation occurs outside of the active coastal system, introducing new sand to supplement a deficit in the coastal sand budget

→ Improves project long-term sustainability and geomorphic/ecologic function

+ Only viable option for some Gulf of Mexico projects

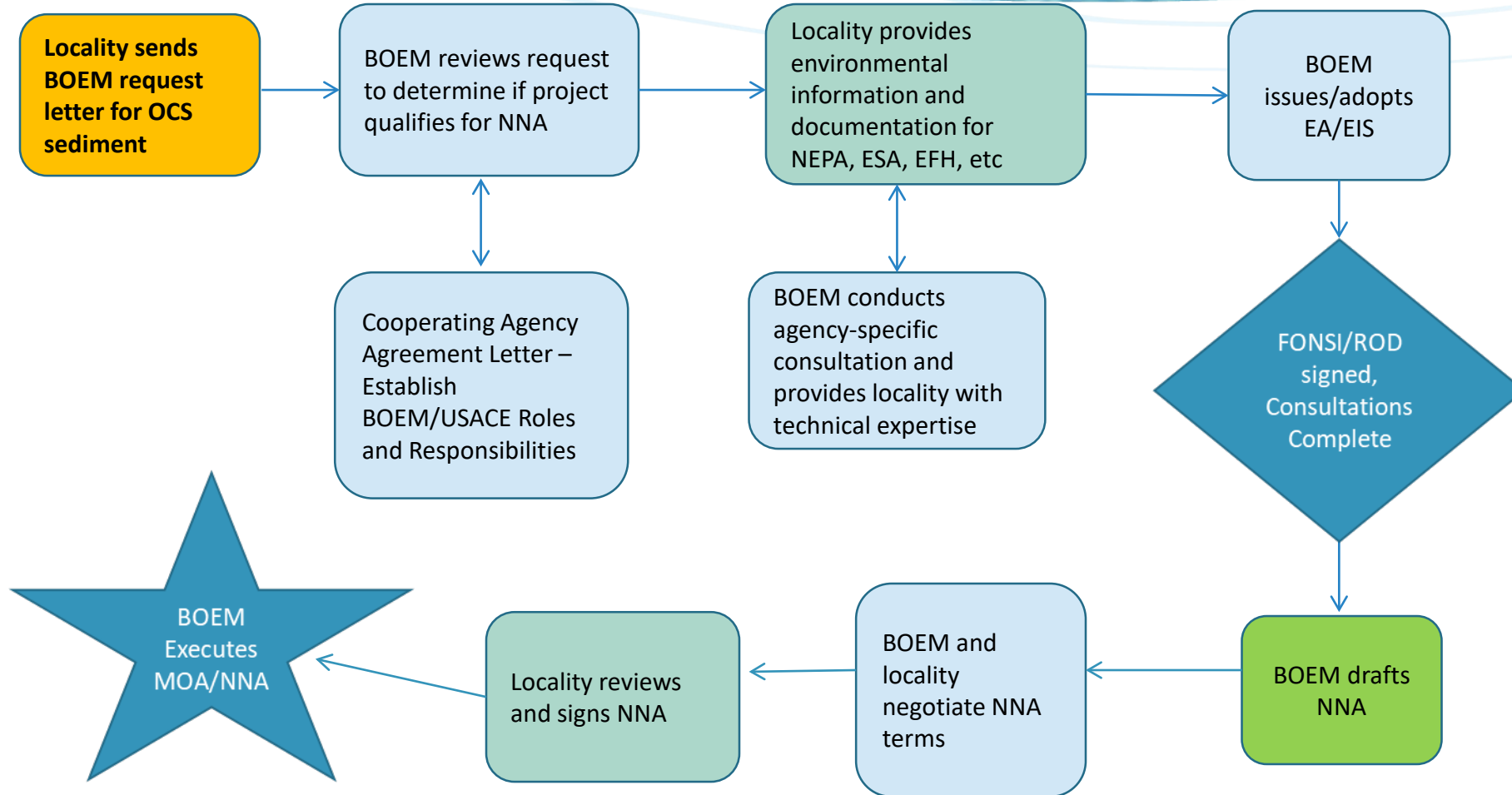
Types of Negotiated Agreements

3 Types of Agreements Are Used to Convey Sand and Gravel Noncompetitively

- **2-Party Memorandum of Agreement (MOA)**
 - An Agreement negotiated between Another Federal Agency and BOEM
- **3-Party Memorandum of Agreement (MOA)**
 - An Agreement negotiated between a Locality (State, county, city, parish etc.), Another Federal Agency and BOEM
- **2-Party Lease**
 - An Agreement negotiated between a Locality (State, county, city, parish etc.) and BOEM

Each project is unique, having different parties involved, different environmental concerns and different leasing concerns, because of this each Agreement is for a one-time use.

Process for Locality to Obtain a Lease (USACE Regulatory Program)

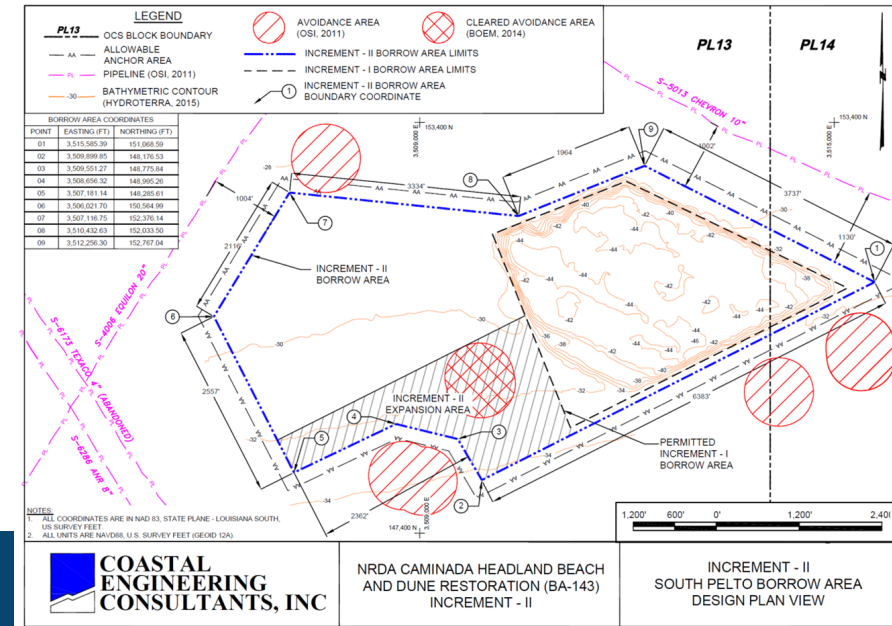
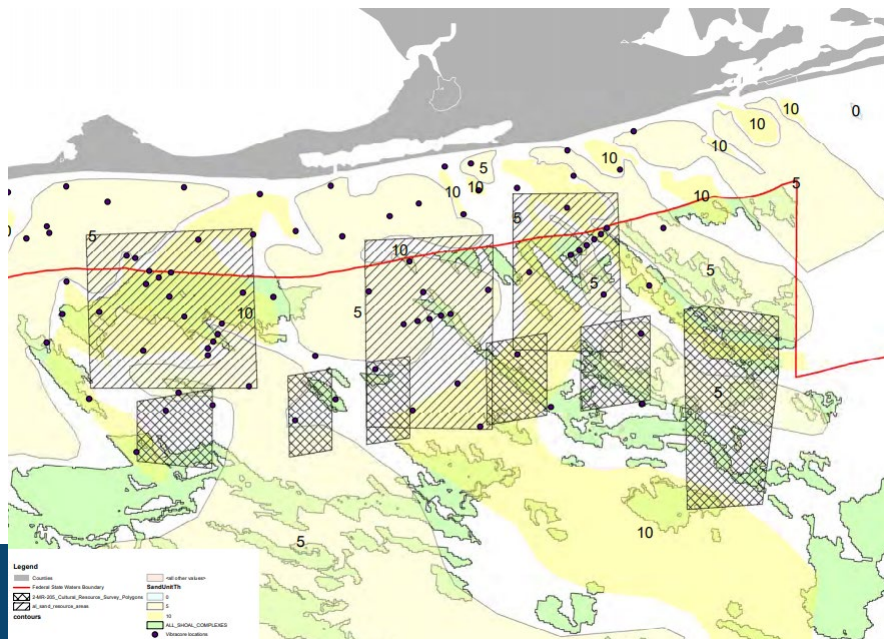


Multiple-Use Conflicts

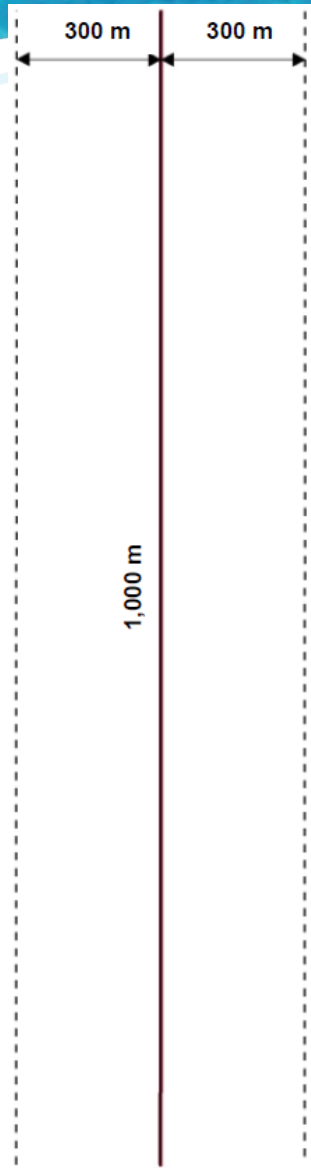


Gulf of Mexico: Managing Multiple Uses

- Sand is extremely scarce where needed most
- Oil and gas infrastructure (and other use conflicts) obstructs access = higher costs to projects
- Significant OCS sediment resources policy developed: BOEM must proactively manage resources to ensure availability
- Reliable geological/geophysical data are key – Gulfwide Sand Inventory initiative



Economic Impact of Pipelines

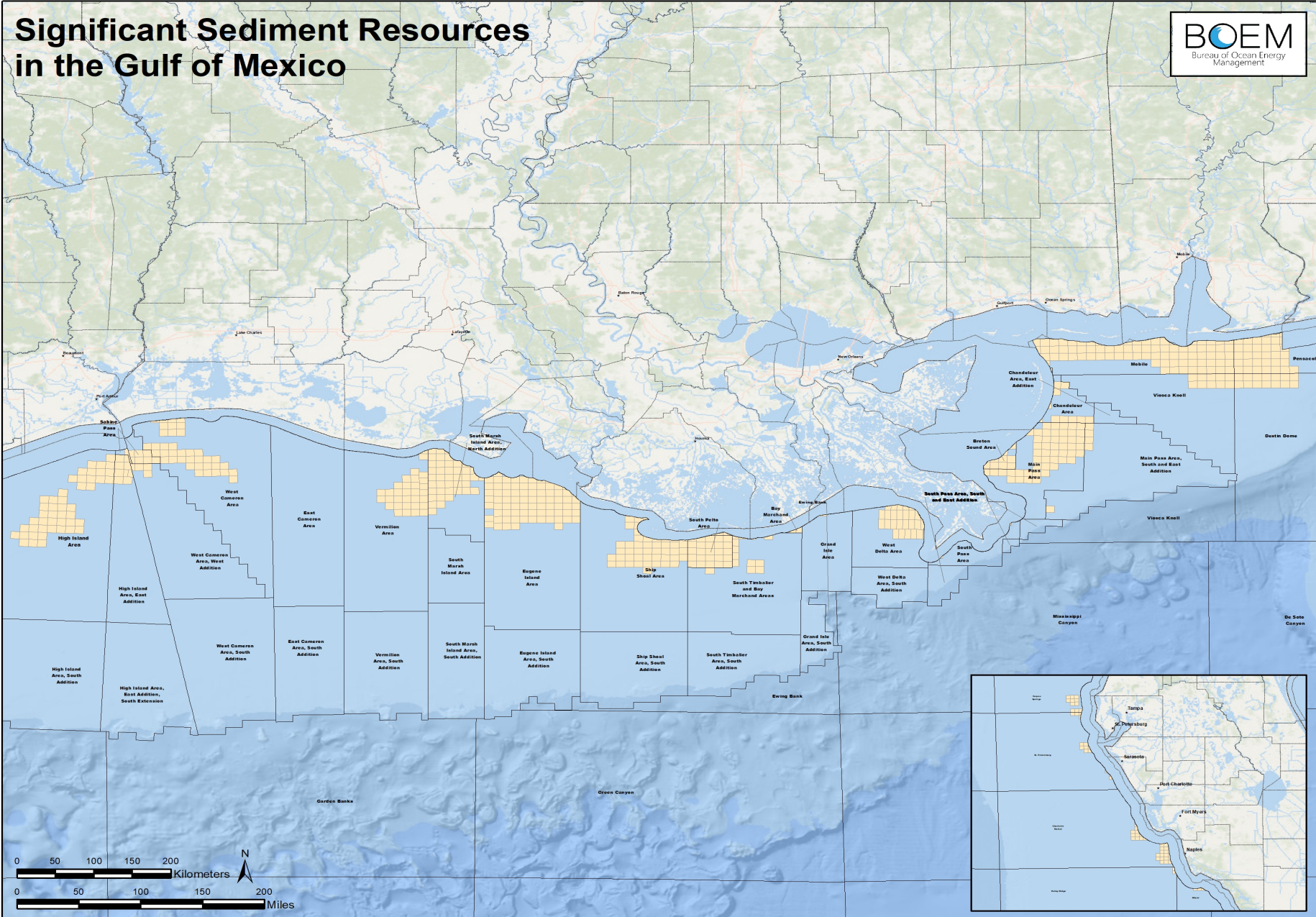


- Volume and value of sediment unavailable based on 1,000-meter pipeline
 - It will occupy $1,000 \times 600$ sq. meter = 600,000 sq. meter of significant sediment resources area
 - It will prevent access to about $600,000 \times 3$ meter (thick) = 1,800,000 sq. meter **or** 1.8 MCM/2.4 MCY of sediment
 - Average economic value of sediment – \$21 per meter cubed
 - Economic value of 1.8 MCM – ~\$37.8 million

Courtesy of Syed Khalil, Louisiana CPRA (2019)

SSRA Blocks (2019 Update)

Significant Sediment Resources in the Gulf of Mexico



Gulfwide Offshore Sand Inventory

- **Coordination with the Gulf Coast States and other Federal agencies (i.e., USGS, USACE, etc.) concerning offshore sediment management efforts and priority needs**
- **Understanding shelf geologic evolution important to locating discrete sand bodies (not just “low-hanging fruit” bathymetric highs)**
- **Beyond the project scale, long-term management as stewards of OCS mineral resources (i.e., managing use conflicts, decreasing restoration planning uncertainty, etc.)**

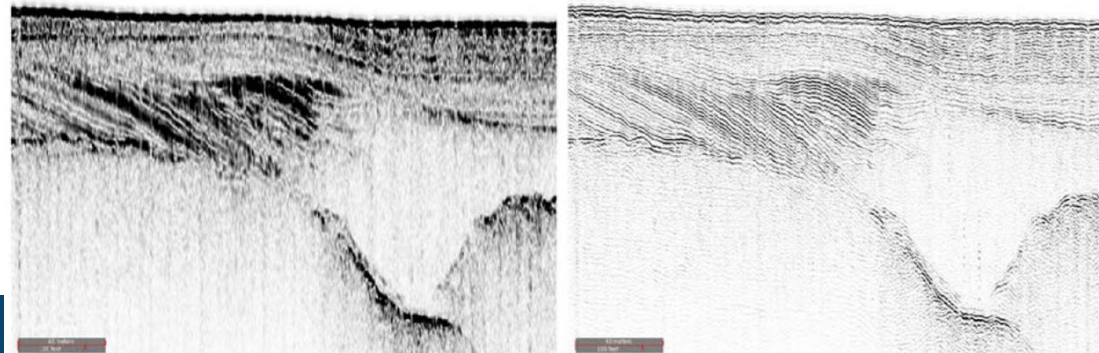
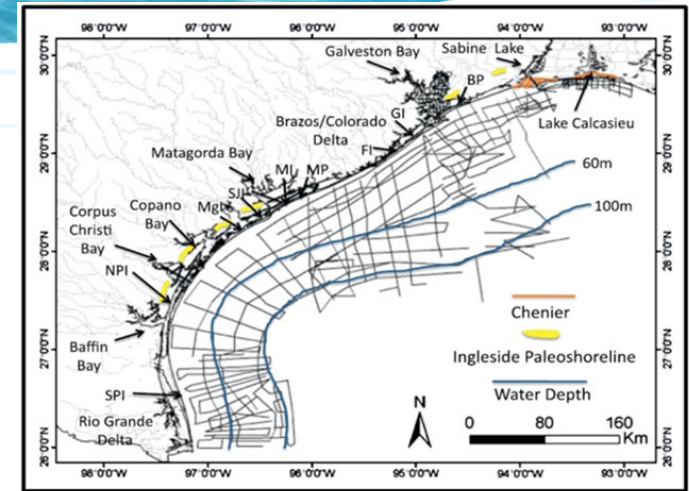
Gulfwide Sand Inventory Strategy

Near Term

- Implemented through cooperative and interagency agreements with Texas, Mississippi, USGS, Louisiana, Alabama, and Florida.
- Existing data incorporated into MMIS, data gaps identified, and prioritization (upcoming projects) to direct new data collection.

2020-2030

- 8- to 10-year program that funds the Gulfwide Sand Inventory for new data collection, sand resource delineation, ore-quality assessments, and quantified reserves estimates.
- Coordinate with other on-going and future data acquisition to streamline efforts and reduce overall costs for data collection.



Marine Minerals Information System (MMIS)

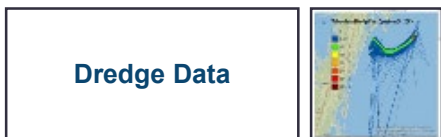
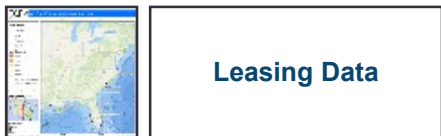
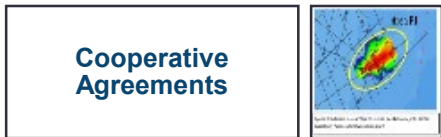
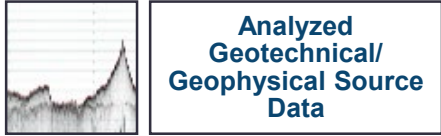


What is the MMIS?

Bathymetry & Backscatter

Data Development

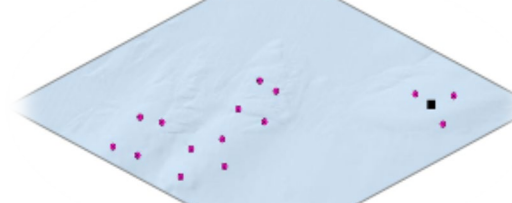
Collaboration with Our Partners



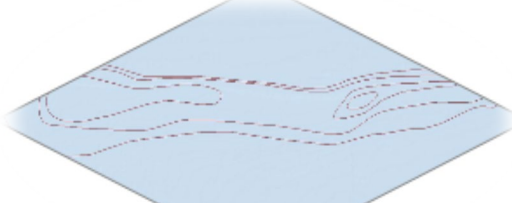
Enterprise
Relational
Database

MMIS

Environmental Data



Bottom Characteristics



Leasing/
Planning/Construction



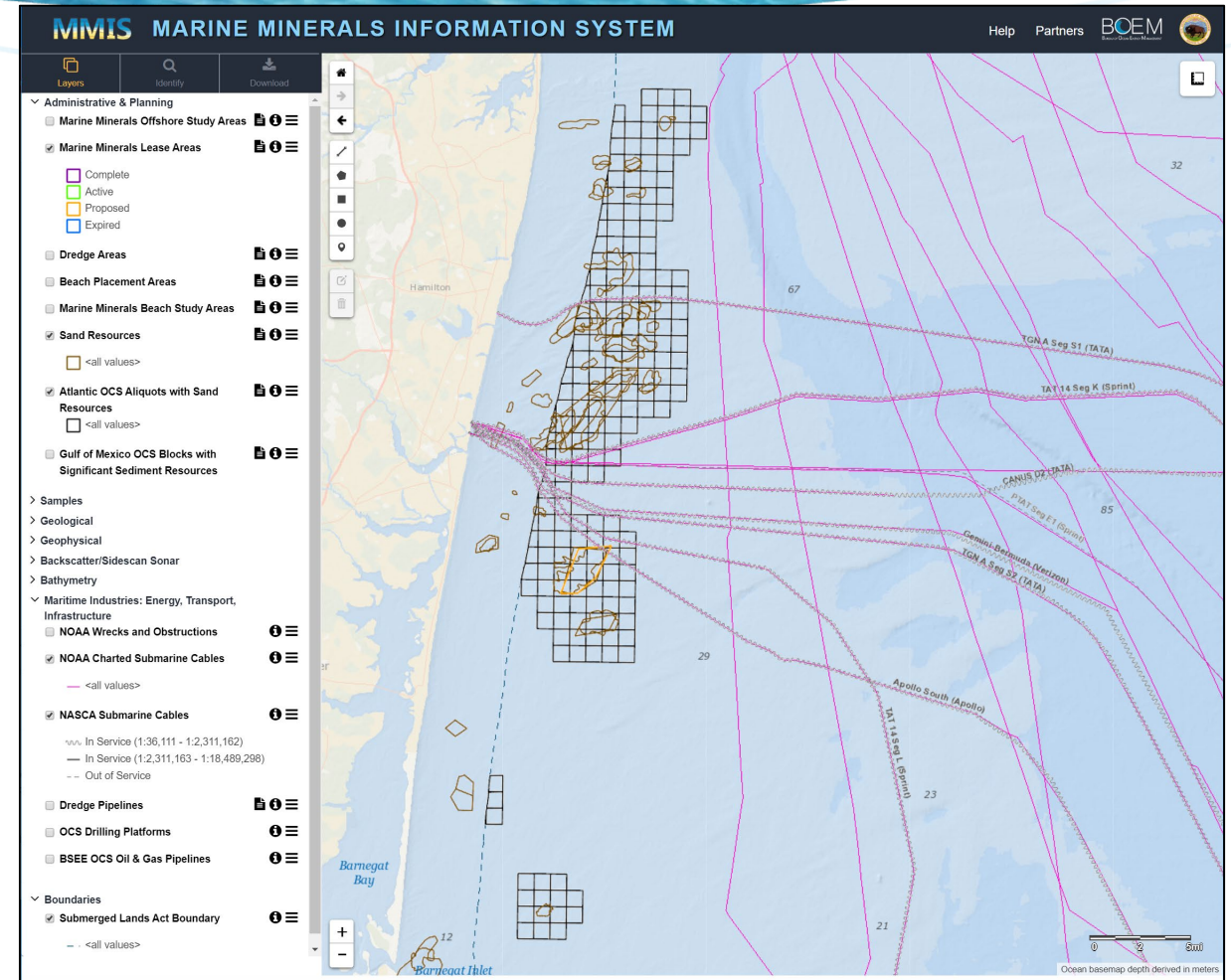
Discover

Analysis

ID Gaps

What is the MMIS?

- **Geospatial viewer for managing multiple uses of the OCS**
 - Sand resource assessment
 - Environmental assessments
 - Submerged infrastructure
 - OCS sand leasing, project infrastructure and placement



Steward of OCS Sediment Resources

<https://mmis.doi.gov/boemmmis/>

MMIS Function

- Facilitate proactive planning (e.g., financial, design, and comprehensive due diligence)
- Improve efficiency of resource management
 - Provide access to OCS resource data
 - Leverage additional data collection and sharing
 - Transparency promotes accountability and facilitates communication
 - Develop long-term sand management strategies
- Provide tools to analyze and/or reevaluate resources

Informing through Science



MMP Research

\$40 million+ spent on MMP studies, focusing on



**OCS Sand Identification
and Characterization**



Biological Measures



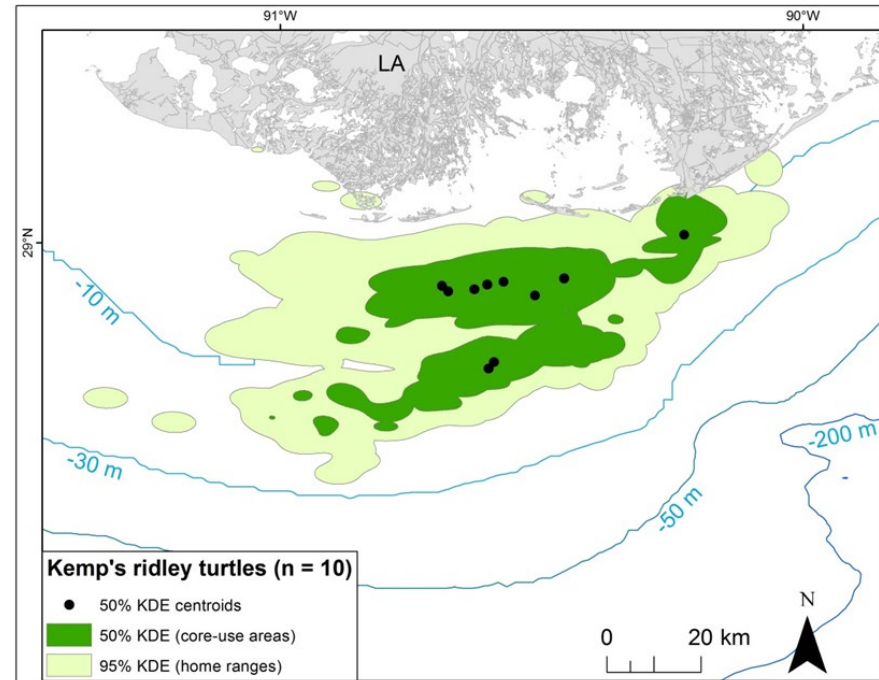
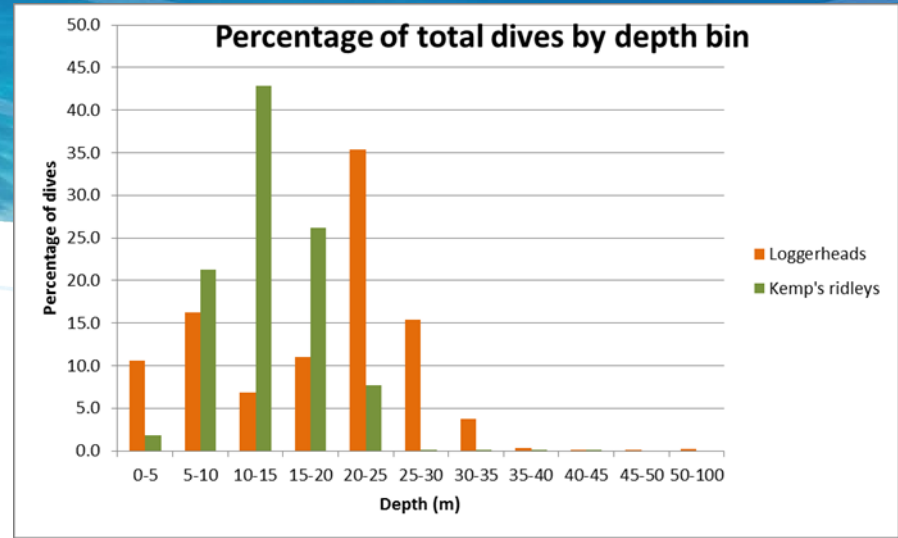
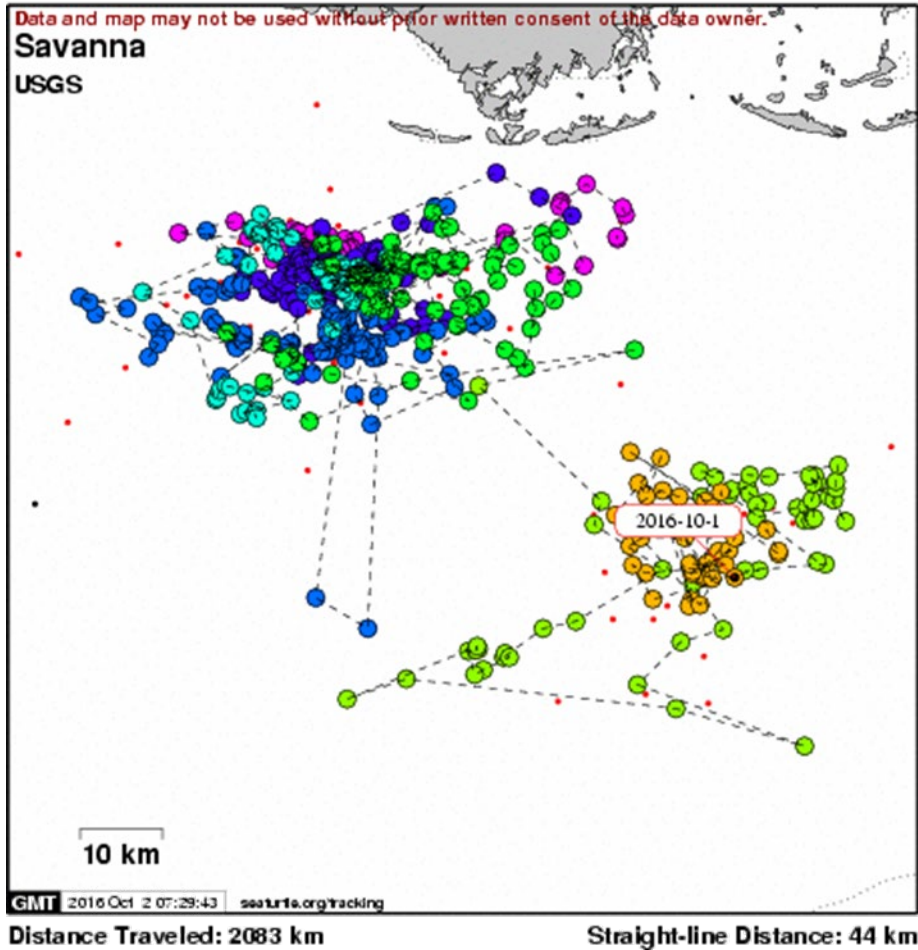
Operation Optimization

Sea Turtle Movement and Habitat Use in the Northern Gulf of Mexico

- **Study Objective:** Capture and tag sub-adult, juvenile, and adult sea turtles in the northern Gulf of Mexico using trawling operations
- **Specific Goals:**
 - Determine the extent of movements and seasonal site fidelity
 - Fine-scale characterization of dive profiles
 - Identify and assess physical and biological features to characterize habitats
 - Assess the population structure and isotopic signatures
 - Status of abundance and distribution
 - Exposure to non-nesting individuals



Sea Turtle Movement



Other Studies Underway in the Gulf of Mexico

- Fine-Scale Dive Patterns of Sea Turtles in the Gulf of Mexico
- Evolution of Mud-Capped Dredge Pits in the Gulf of Mexico
- Evolution of Ship Shoal Borrow Areas
- A Critical Real-time Coastal Observing Station
- Non-Linear Sedimentation on Dredge Area Benthic Ecosystem, on LA Shelf
- Ecological Function and Recovery of Biological Communities GOM
- Monitoring Program for Water Quality and Biogeochemical Processes of LA Borrow Areas

The Gulf of Mexico OCS Region's Marine Minerals Program

- focuses on **coordination and collaboration** to build robust partnerships with stakeholder groups, other Federal agencies, States, and communities;
- is **forward looking** in resource management to ensure that Gulf Coast restoration and community protection programs with sediment needs can be successful; and
- is a science-based program that responsibly manages the development of America's **offshore non-energy resources**.

BOEM

Bureau of Ocean Energy
Management

BOEM.gov



Jessica Mallindine | jessica.mallindine@boem.gov | 504-736-7516