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Coastal Restoration



Bureau of Ocean Energy Management's Role

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Mid-Atlantic Regional Planning Body

September 9, 2014

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Webinar Topics

- How Marine Minerals Program (MMP) aligns with RPB Framework
- Roles and Responsibilities of MMP
- History of program and current projects
- Types of leases and agreements for offshore sand

- Hurricane Sandy support
- Cooperative Agreements and Data Acquisition to identify new sand resources

- Environmental Review Process
- Project Monitoring
- Environmental Studies

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Mid-Atlantic Regional Planning Body
"Regional Ocean Planning Framework"

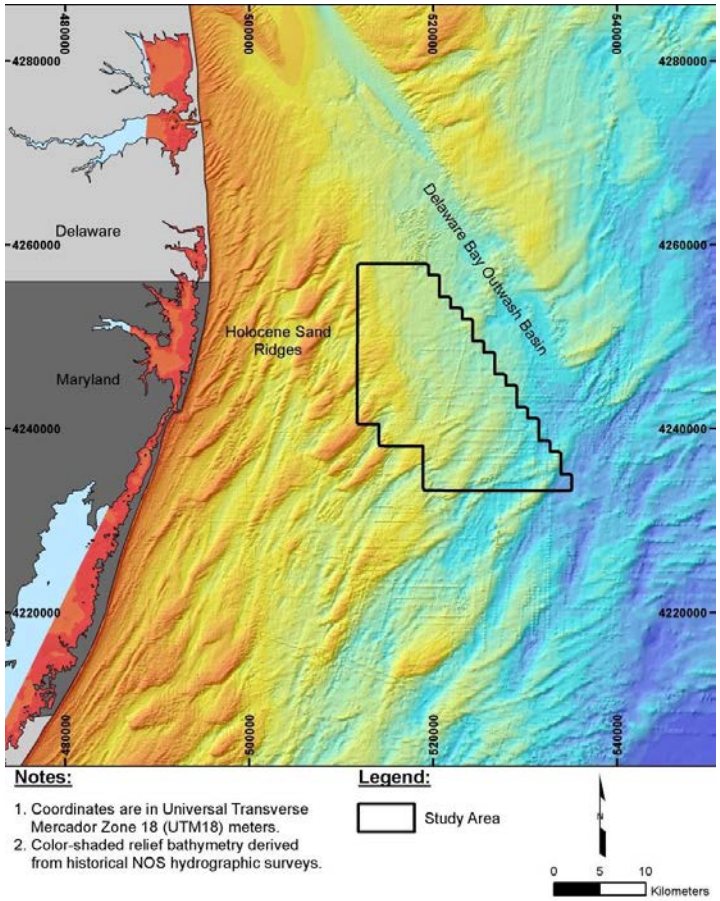
GOAL: Sustainable Ocean Uses

Plan and provide for existing and emerging ocean uses in a sustainable manner that minimizes conflicts, improves effectiveness and regulatory predictability, and supports economic growth

OBJECTIVE 6) (Offshore sand management)

- Facilitate enhanced coordination among coastal jurisdictions, Federal and State regulatory agencies, and Tribal entities on the use of sand and gravel resources in the Mid-Atlantic in the context of coastal adaptation and resilience planning and implementation.

- *Example action*: Coordinate regional identification and prioritization of sand borrow sites in Federal, State, and Tribal waters.

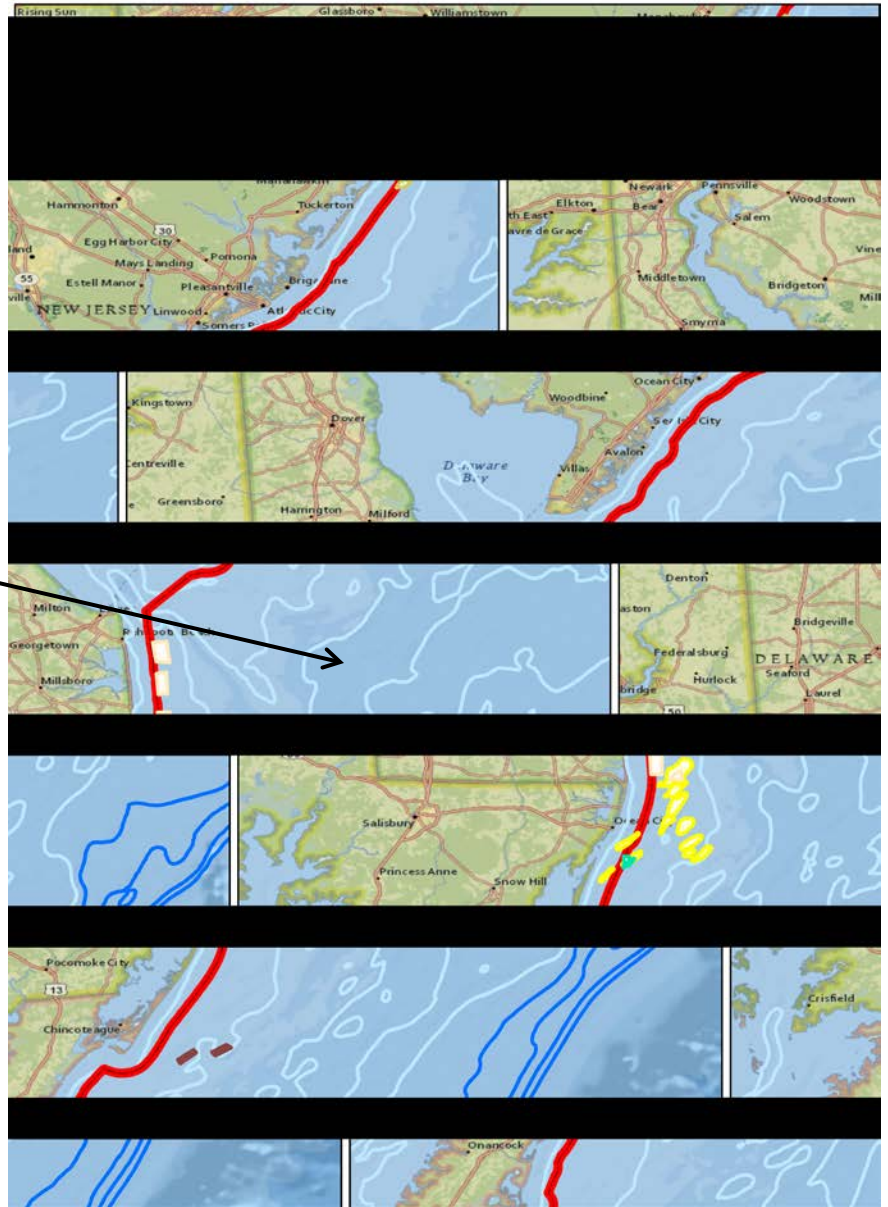


Coastal Planning & Engineering, Inc., A CB&I Company, 2014

Outer Continental Shelf

Outer Continental Shelf Lands Act (OCSLA) (43 U.S.C. 1331, et. seq.)

Outer Continental Shelf (OCS) or Federal jurisdiction begins 3 nautical miles (nm) from shore (but 3 leagues or 9 nm offshore Texas and west coast of Florida) and extends 200 nm



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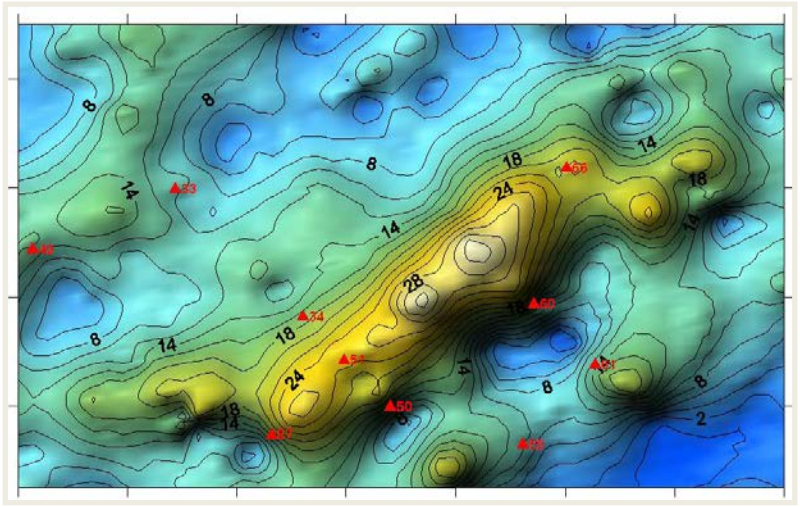
Marine Minerals Program

- Identify and evaluate potential OCS sand resources
- Respond to requests for OCS sand for coastal restoration through issuances of leases/agreements
- Conduct thorough environmental reviews of the use of sand borrow areas through NEPA and other environmental consultations
- Use stakeholder outreach and coordination in decision-making process
- We do not design or construct projects but convey the rights to OCS sand/minerals



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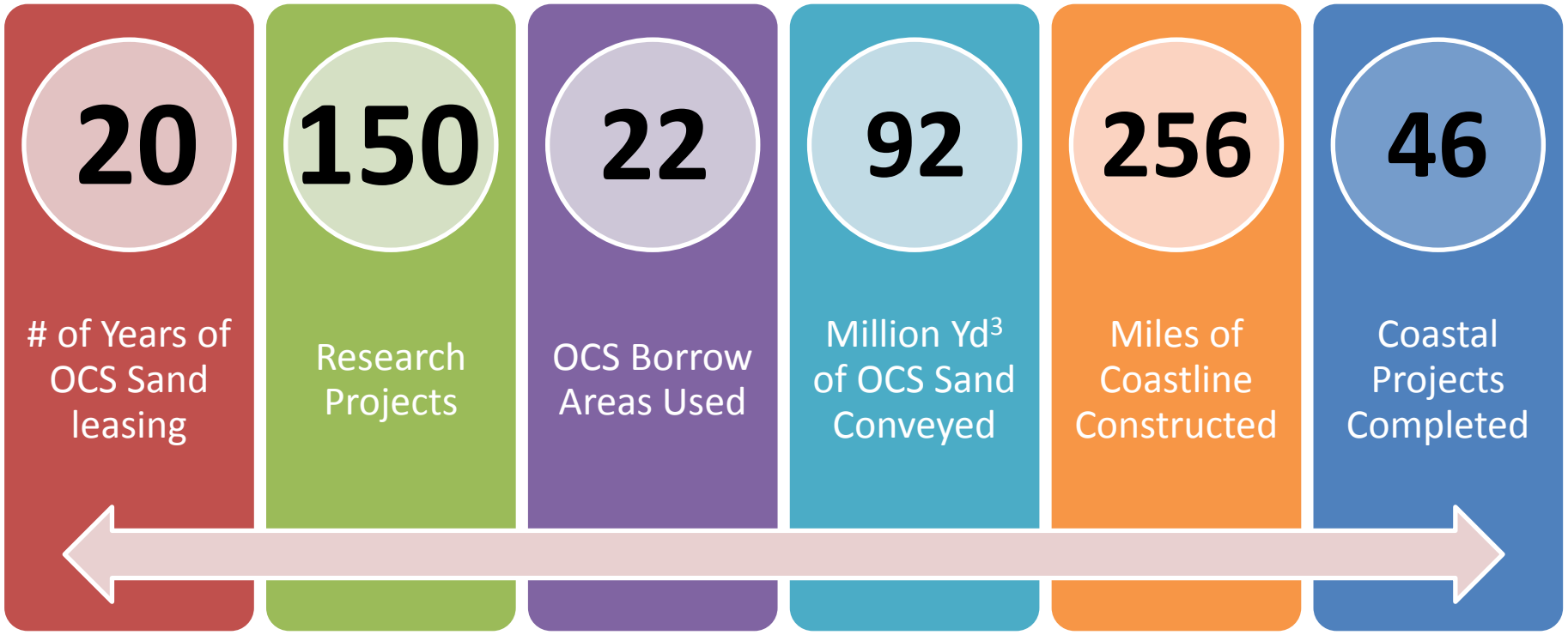
Marine Minerals Program

Two Decades of OCS Sand Stewardship



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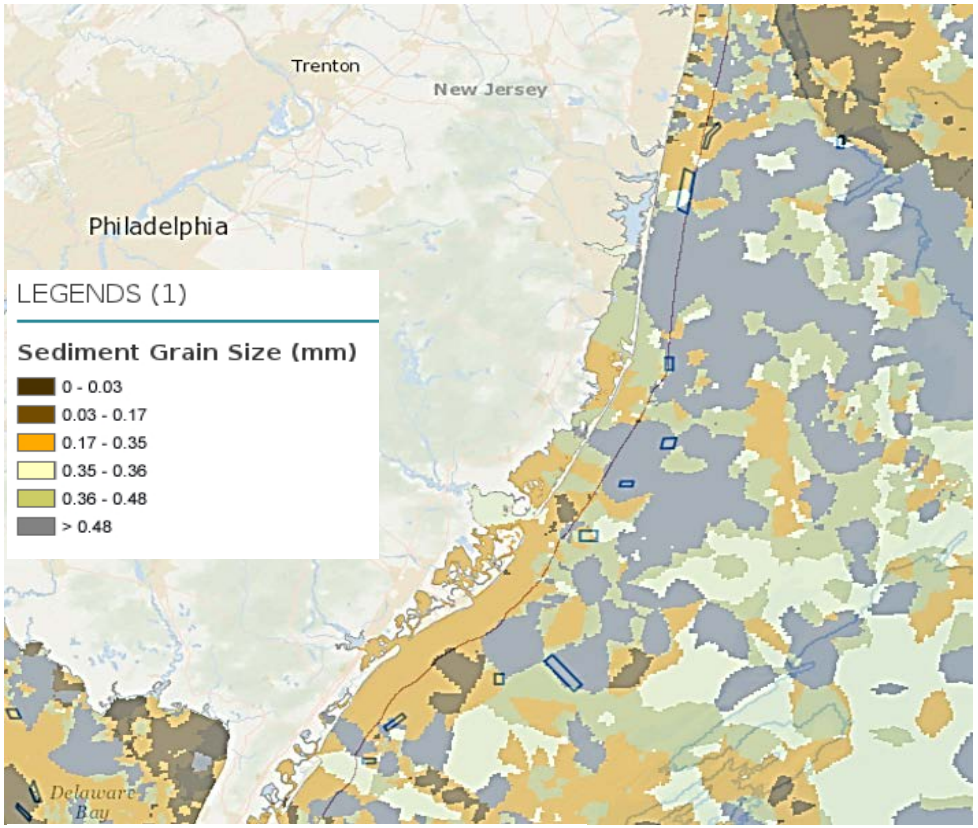
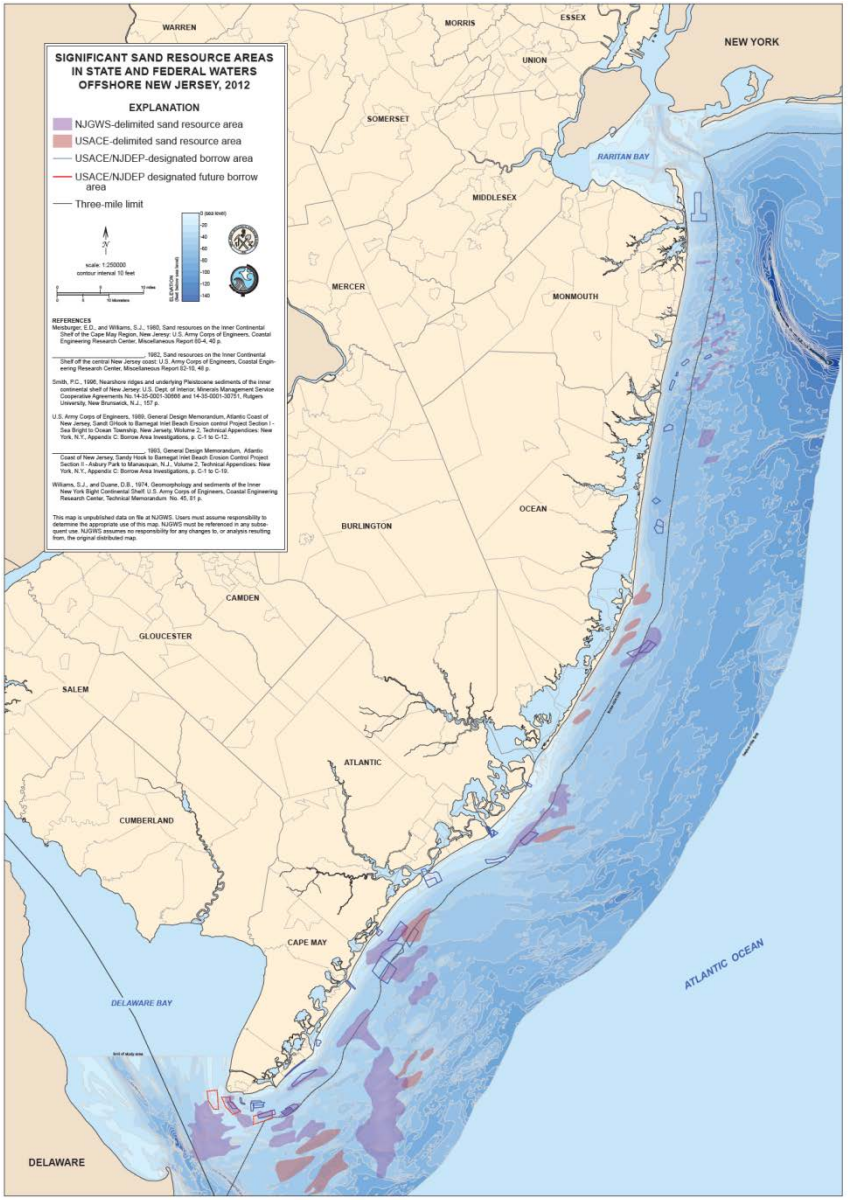
OCS Sand Features

- **Suitable OCS sand is a finite resource**
- **Grain size compatible w/ native beach**
- **Shoal/sand ridges**



Sediment Grain Size - MARCO Data Portal



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Marine Minerals Program

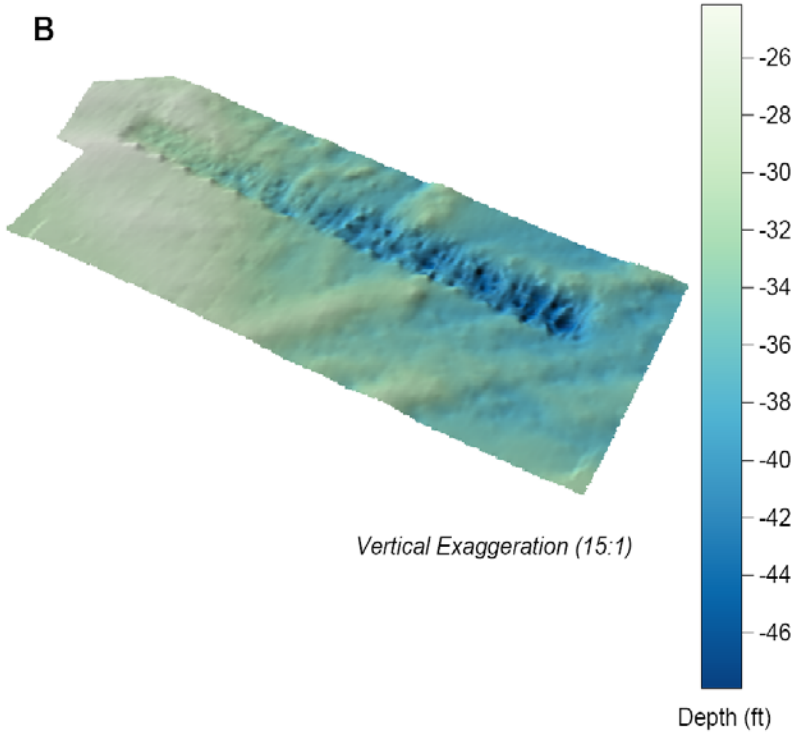
Public Law 103-426 (1994): Amended OCSLA to allow BOEM to grant noncompetitive negotiated agreements for Federal sand, gravel, or shell resources for use in shore protection or other public works projects

A 1999 Amendment: Prohibits BOEM from charging Federal, state, and local governments a fee for OCS sand

Agreement / Lease Stipulations

- Notifications
- Dredge Positioning
- Dredge Operating Requirements
- Production and Volume Information
- Marine Pollution Control/Contingency Plan
- Discovery of Munitions and Explosives of Concern (MEC) Procedures
- Bathymetric Surveys
- Protection of Archaeological Resources
- Project Completion Reporting
- Environmental Compliance Reporting
- Environmental Monitoring

Sorted Bedform and Low-Relief Sand Ridges - Myrtle Beach (SC)
Surfside Borrow Area
Post-Construction Bathymetry (Hopper Dredge)



Marine Minerals Program

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

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

Each Agreement is for a one-time use and valid for 2 yrs

Marine Minerals Program - Projects

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Long Beach Island, NJ
7 mcy

NASA Wallops Island, VA
3.2 mcy + 1 mcy

Dam Neck, VA
700,000 cu yds

Sandbridge, VA
2.2 mcy

http://www.boem.gov/Non-Energy-Minerals/Marine-Minerals-Program.aspx

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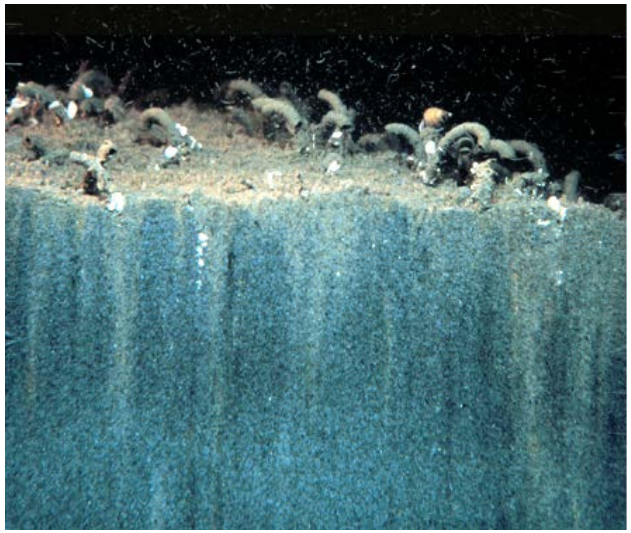
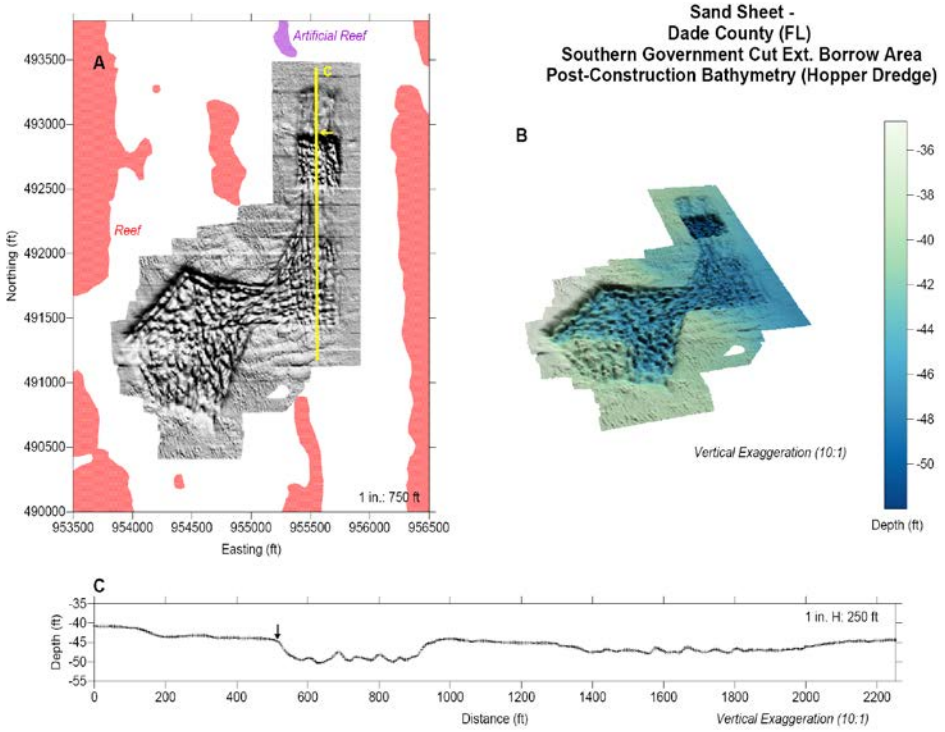
Offshore Dredging

U.S. Department of the Interior
March 3, 1849

Potential Dredging Impacts

- Protected species
- Substrate characteristics and bathymetry
- Near-field currents and sediment transport
- Submerged historic resources
- Benthic habitat and species diversity
- Essential Fish Habitat (EFH)





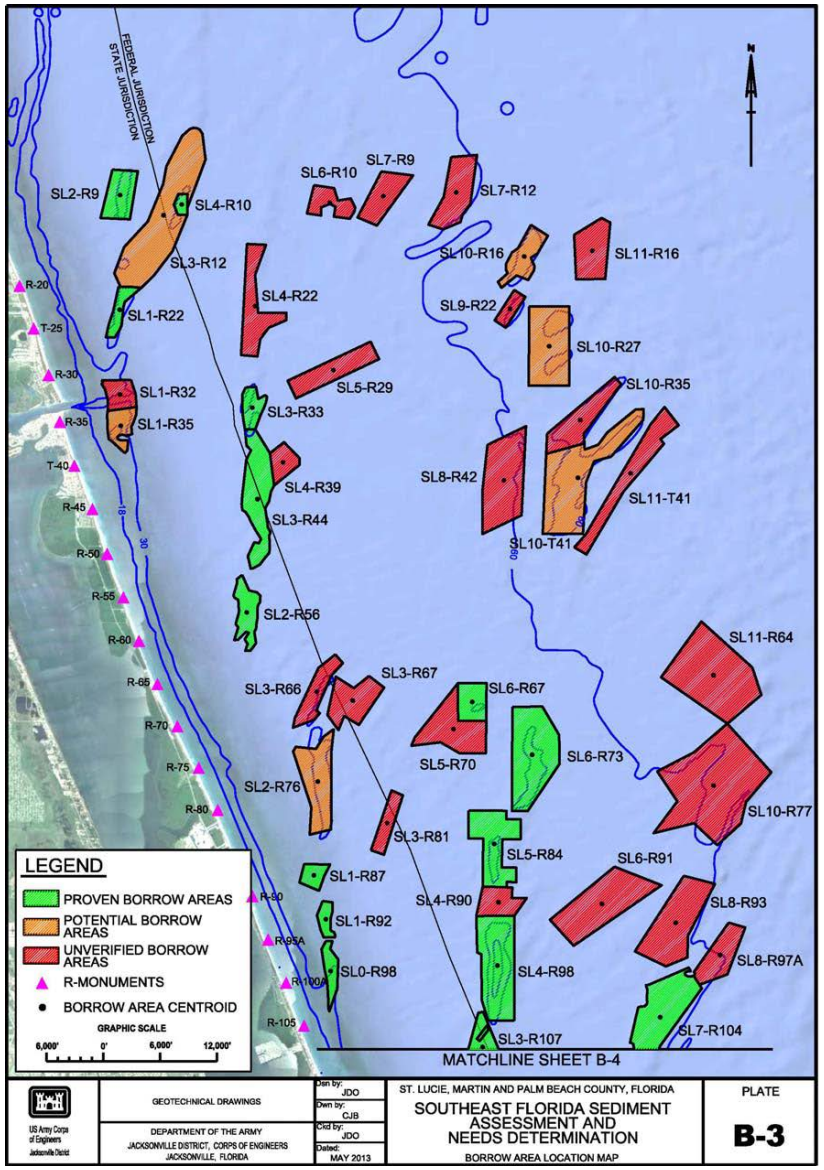
Outreach & Regional Sand Management

Sand Management Working Groups

Conference Participation (ex., ASBPA)

Geospatial Database

Florida Regional Use Agreement



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Hurricane Sandy
Coastal Recovery and Resiliency

- **Negotiated Cooperative Agreements with 13 Atlantic Coastal States**
  - Includes the five MARCO states (New York, New Jersey, Delaware, Maryland, and Virginia)
- **Broad Agency Announcement (BAA)- Atlantic OCS Data Acquisition Project to delineate OCS Sand Resources**

Hurricane Sandy Cooperative Agreements: Objectives

4 Thematic Elements of the State Cooperative Agreements

1. Develop a database of existing geologic and geophysical data
2. Determine states' need for sand
3. Compile and analyze existing sand resources data
4. Identify data gap areas where future information needs to be collected

MARCO Cooperative Agreement State Partners

- **NY -** The New York Department of State Office of Planning and Development, with support from the State University of New York (SUNY) Stony Brook University, School of Marine and Atmospheric Sciences
- **NJ -** The New Jersey Department of Environmental Protection, Geological and Water Survey (NJGWS)
- **DE -** Delaware Geological Survey (DGS), located at the University of Delaware
- **MD -** Maryland Geological Survey of the Department of Natural Resources
- **VA -** Virginia Department of Mines, Minerals and Energy (DMME), Division of Geology and Mineral Resources, with support from the College of William and Mary's Virginia Institute of Marine Science

BAA - Atlantic OCS Data Acquisition Program

1. Determine Data Survey Areas (with state input)
2. Develop Data Acquisition Plan
3. Conduct geologic and geophysical sampling
4. Provide data to BOEM, states, and stakeholders

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Marine Minerals Program
Hurricane Sandy : Outcomes

1. Increase availability of existing data
2. Develop a Needs Assessments for states, region, and Atlantic Coast
3. Utilize collaborative web tools for states and Federal government
4. Identify data gaps for future surveys
5. Increase communication between Federal, state agencies and stakeholders

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Marine Minerals Program - DOI Coordination

1. MMP projects and data acquisition contribute to knowledge of OCS geology and benthic habitat
    1. Data to be collaboratively planned and distributed
    2. Archival of geologic cores support geologic climate research
    3. Cooperative agreements provide state capacity building supporting coastal resiliency planning and engagement
2. DOI Intra-agency coordination supporting green infrastructure needs
    1. USGS, FWS, and NPS Hurricane Sandy resiliency projects
    2. DOI Competitive Grant Projects (NFWF)
3. USACE North Atlantic Comprehensive Study
    1. Sand resources for coastal infrastructure planning
    2. Regional Sediment Management
4. NOAA – BOEM Marine Cadastre
5. Regional Ocean Partnerships – Mid-Atlantic Regional Council on the Ocean(MARCO) & Northeast Regional Ocean Council (NROC)
6. National Disaster Recovery Framework (FEMA) Natural and Cultural Resources Recovery Coordination (DOI lead)

Overview of the Environmental Review Process

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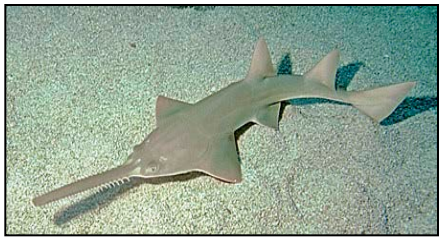
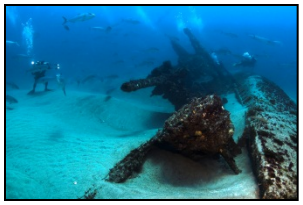
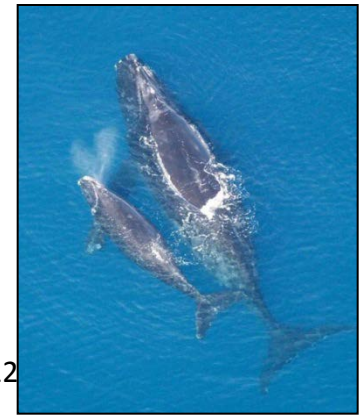
Integrating Environmental Requirements





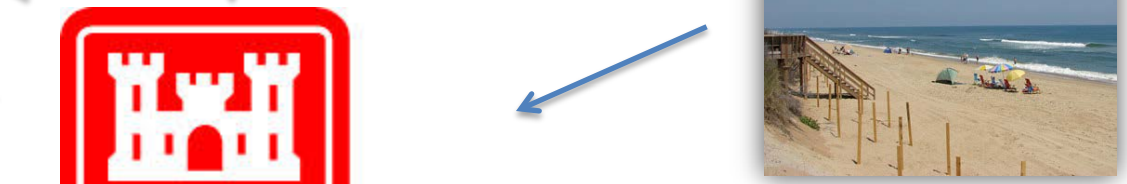


- E.O. 12898: Environmental Justice
- Magnuson Stevens Fishery Conservation and Management Act
- Federal Water Pollution Control Act
- Clean Air Act
- Coastal Zone Management Act
- Marine Mammal Protection Act
- National Historic Preservation Act
- Endangered Species Act

NEPA

Federal Agency Coordination

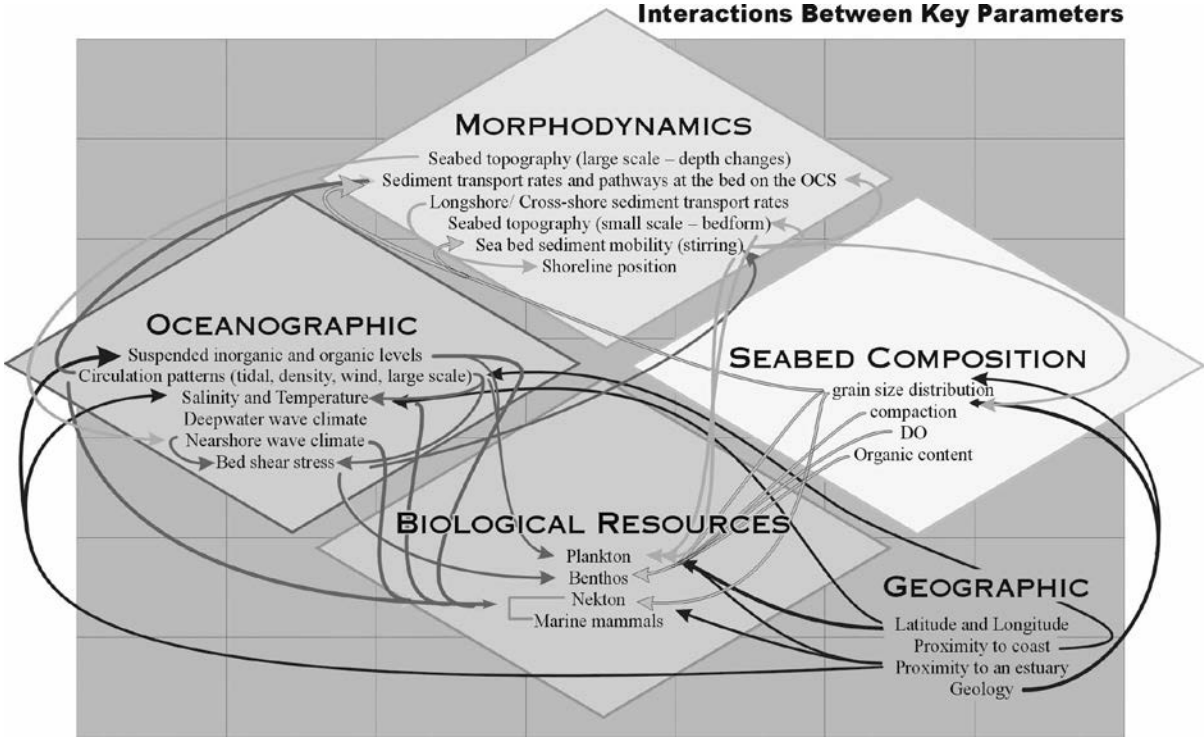
For the Endangered Species Act (ESA)



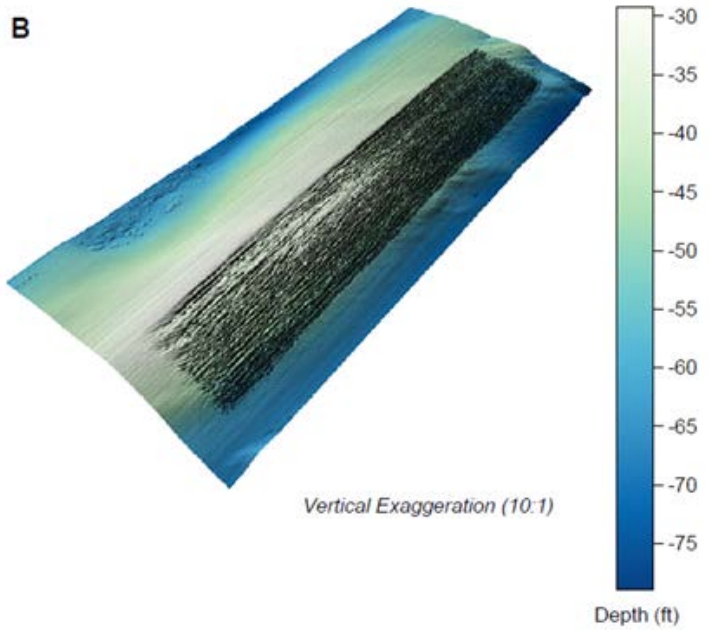
US Army Corps of Engineers®

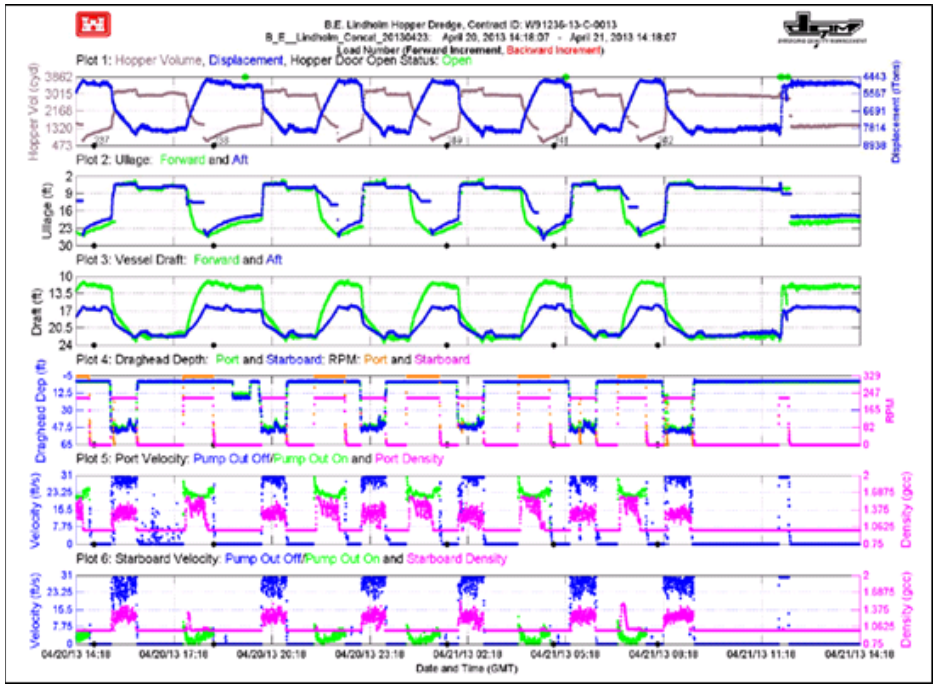
Key Environmental Resources

- Physical Environment
  - Hydrodynamics, sediment transport
  - Geomorphology
  - Water/air quality
  - Noise
- Biological Environment
  - Benthic and fish species and habitat
  - T&E Species
- Socioeconomic Environment
  - Archeological/cultural resources
  - Recreation and tourism
  - Fishing, navigation, and energy



Project Monitoring





Examples:

- Tracking dredge parameters (position, pump status, etc.)
- Measuring “dredging intensity”
- Endangered species observer reporting
- Monitoring borrow area morphologic evolution

Studies Program:
Ongoing and Proposed Studies

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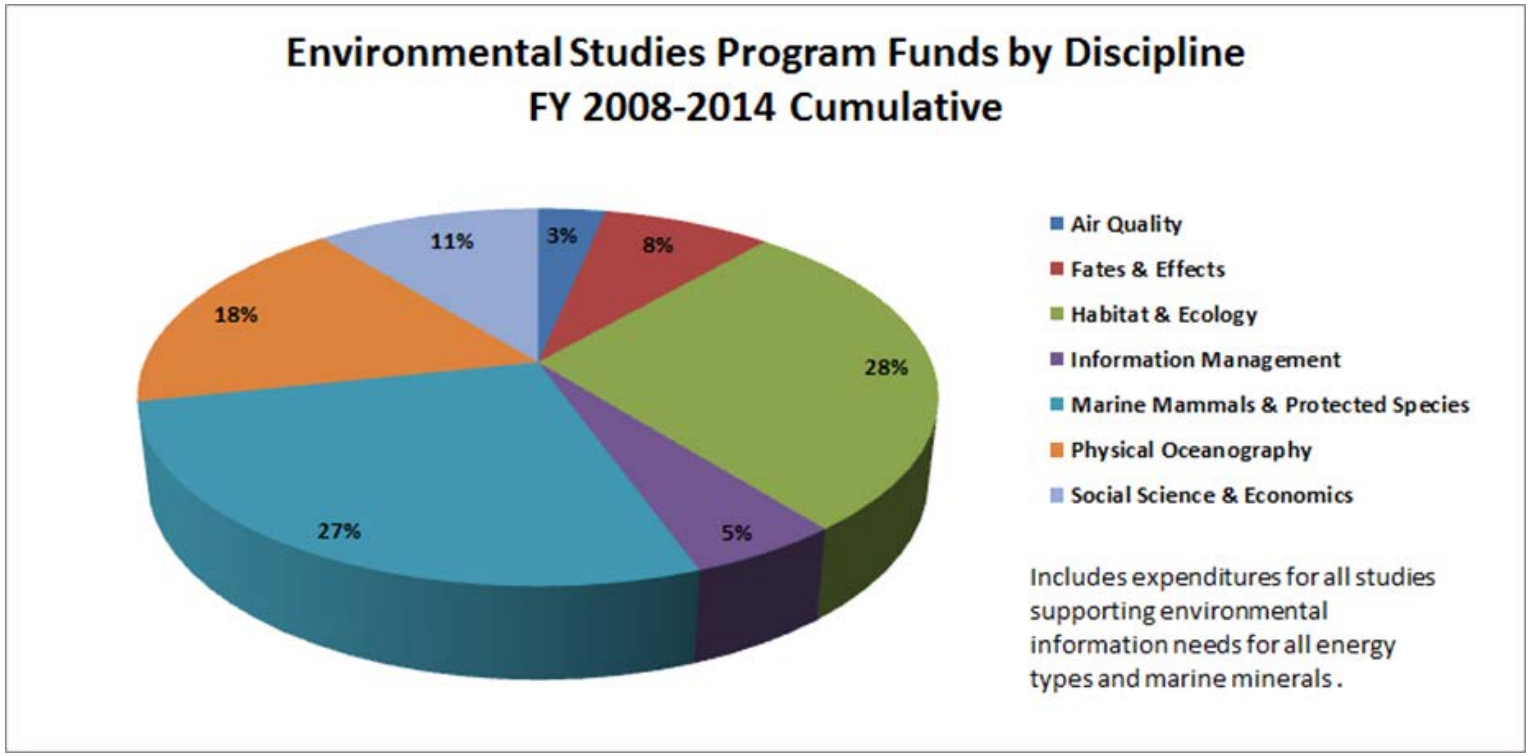
Environmental Research



Distribution of MMP Studies by Discipline:

- **Biological Studies – 16%**
- **Physical Modeling – 15%**
- Environmental Impact Investigations – 41%
- Combined – 28%

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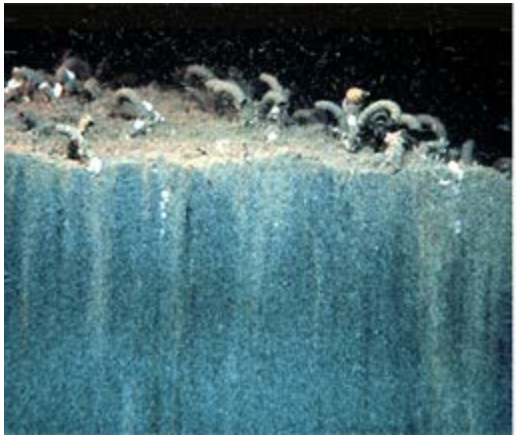
Environmental Research

Applied science for informed decisions on ocean energy

- Provide the information needed to predict, assess, and manage impacts from offshore energy and marine mineral exploration, development, and production activities on human, marine, and coastal environments
- $15.2 million spent on MMP Environmental Studies
- Mitigation and minimization measures derived from research findings such as rotational dredging methods and better emissions estimates
- Identify critical data gaps for guiding future research needs
- http://www.boem.gov/Marine-Minerals-Research-and-Studies/

Ongoing Research

Purpose: Characterize biological differences and ecosystem changes in dredged and non-dredged areas



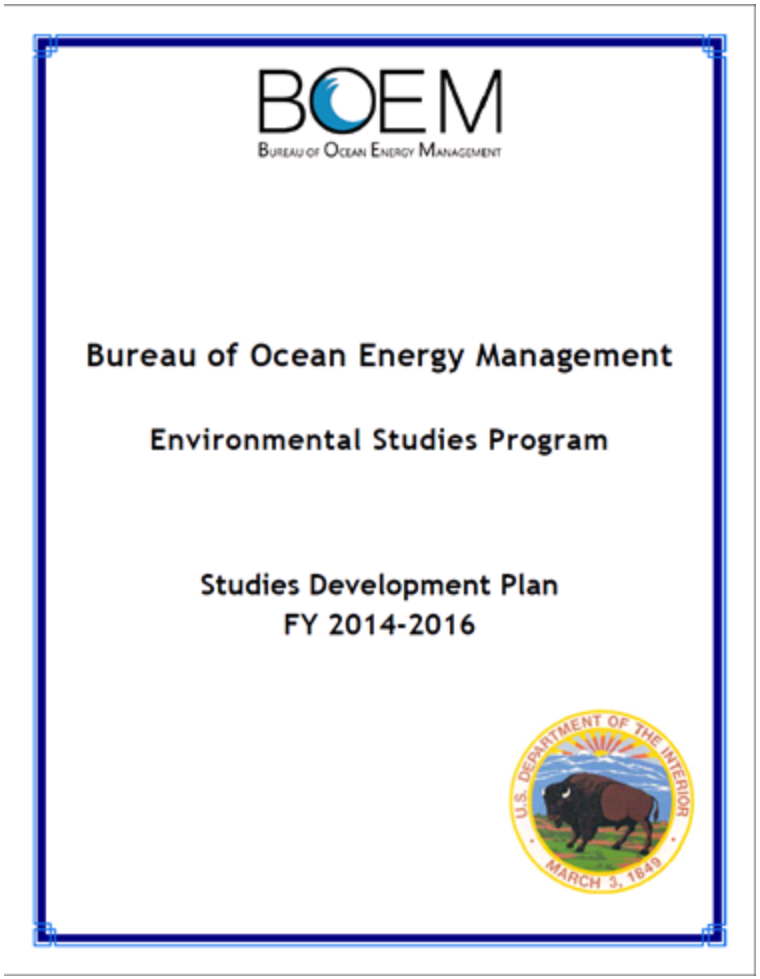
- Study bottom habitat, benthic communities, and fishes
- Compare environmental and resource state in nearby control sites with similar physical and oceanographic characteristics

Monitoring Partnerships

- *Natural Habitat Associations and the Effects of Dredging on Fish at the Canaveral Shoals, East-central Florida*

- *Ecological Function and Recovery of Biological Communities within Dredged Ridge-Swale Habitats and in the South-Atlantic Bight study* University of Florida

Proposed FY 15 Studies



- Managing Dredge Impacts by Optimizing the Use of Sand Resources
- Sediment Sorting During Coastal Restoration Projects: Implications for Resource Management, Environmental Impacts, and Multiple Use Conflicts
- Development of a Decision Support Tool to Reduce Sea Turtle Dredging Entrainment Risk

Proposed FY 15 Studies

Development of a Decision Support Tool to Reduce Sea Turtle Dredging Entrainment Risk

Concern: Current required hopper dredging windows are based on water temperature, are conservative, and may increase costs unnecessarily.

Proposed Study: Develop a standardized decision support tool to assess project specific dredging entrainment risk and improve the effectiveness of mitigation planning decisions within federal marine mineral resource areas

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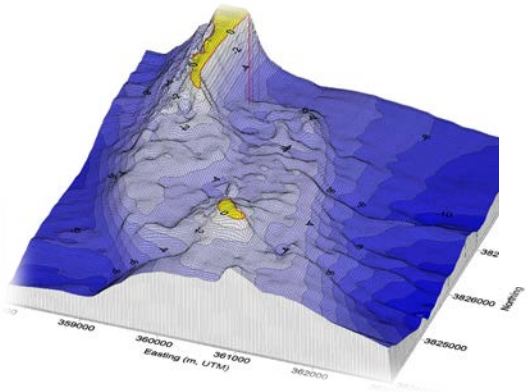
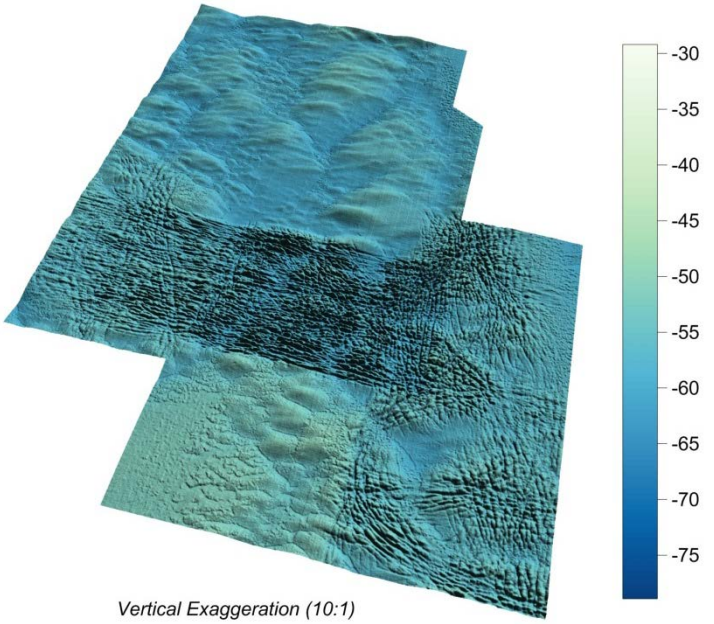
Development of a Decision Support Tool to Reduce Sea Turtle Dredging Entrainment Risk

Background:

- Stakeholder interest in regional planning
- Borrow area dredging
  - Increased frequency
  - Varying habitat types
- South Atlantic Regional Biological Opinion
- Technology improvements





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Development of a Decision Support Tool to Reduce Sea Turtle Dredging Entrainment Risk

Objectives:

- Evaluate and document entrainment risk parameters for dredging activities in the OCS
- Develop a geographically and temporally based standardized decision support tool to assess project specific dredging entrainment risk
- Guide mitigation planning decisions within federal marine mineral resource areas

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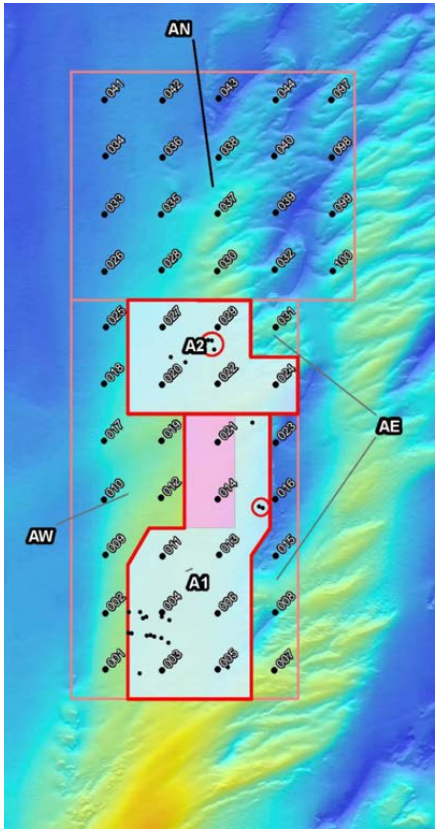
Sediment Sorting During Coastal Restoration Projects: Implications for Resource Management, Environmental Impacts, Multiple Use Conflicts

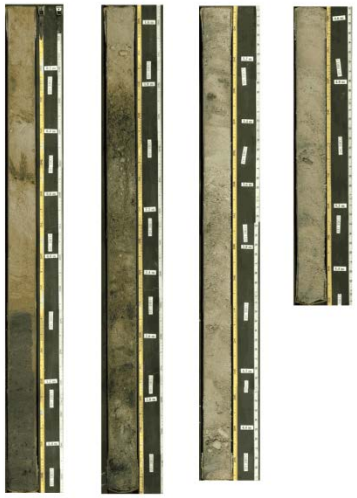
Concern: Extent of sediment sorting during dredging, handling, and placement processes

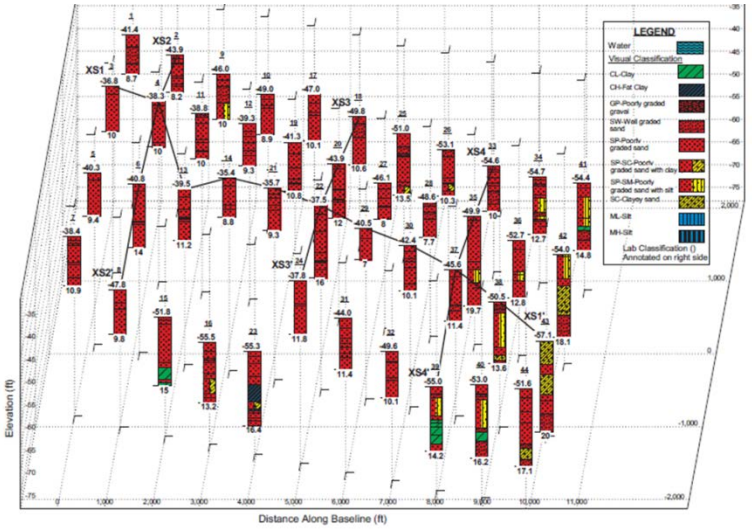
Proposed Study: Determine the percent of fine-grained losses during each phase of dredging, to better inform environmental trade-offs and impacts assessments

Sediment Sorting During Coastal Restoration Projects: Implications for Resource Management, Environmental Impacts, Multiple Use Conflicts

Current Borrow Area "Compatibility" Screening Process







Mechanical Losses Associated with Dredging and Placement Operations

(1) **Draghead**

(2) Inflow

(3) **Overflow**

(4) Productive Load

(5) Re-Slurry/Pumpout

(6) **Placement**

Contacts

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