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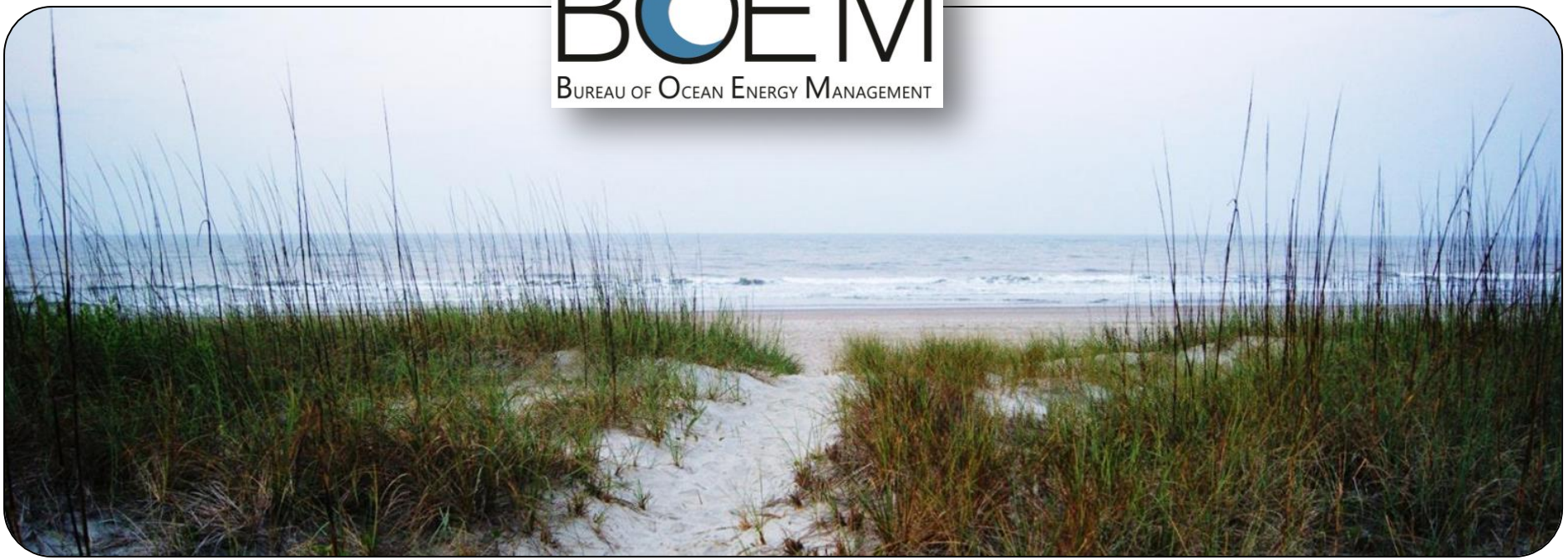

Managing OCS Sand Resources: Hurricane Sandy Resiliency Update and the Future of Resource Management

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BOEM Programs

- Marine Minerals Program (MMP)
- Renewable Energy Program (OREP)
- Oil and Gas Program (O&G)

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What is the OCS?

Outer Continental Shelf Lands Act of 1953

- OCS: extends from 3 nautical miles from shore (or 3 leagues offshore Texas and west coast of Florida)

- Grants BOEM authority to lease and regulate oil, gas, sulfur, and all other minerals on the OCS

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What do we do?

- Provide policy direction for the development of marine mineral resources on the OCS
- Collect and provide geologic and environmental information, developed through partnerships with coastal States
- Identify and make available OCS sand deposits suitable for beach nourishment and wetlands protection projects
- Develop and implement studies to fill in data gaps in NEPA analyses

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Two Decades of OCS Sand Stewardship

20	150	22	77	230	42
# of Years of OCS Sand leasing	Research Projects	OCS Borrow Areas Used	Million Yd^3 of OCS Sand Conveyed	Miles of Coastline Constructed	Coastal Projects Completed

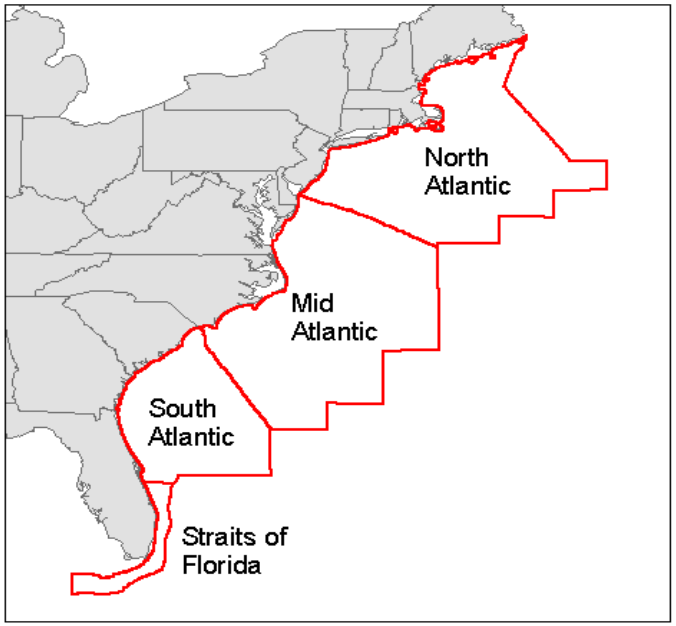
Pelican Island, Louisiana before and after

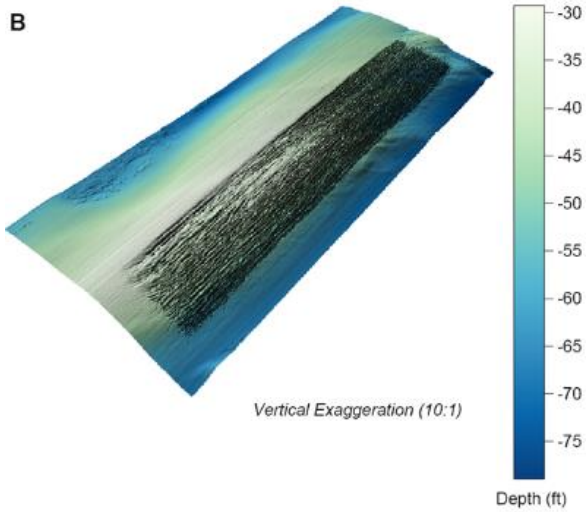
Hurricane Sandy Project Update

- $13.2M
  - G&G Data Acquisition
  - Cooperative Agreements with States
  - Environmental Monitoring
  - Environmental Review and Consultations
  - Outreach

Sandy: Data Acquisition

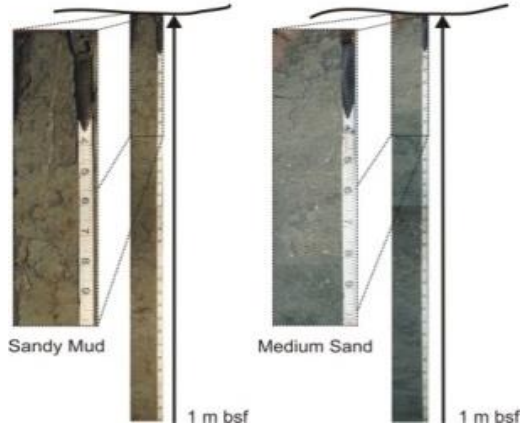
- Comprehensive data set
  - Delineate sand resources
  - Build Inventory
  - Distribute data
  - Manage resources

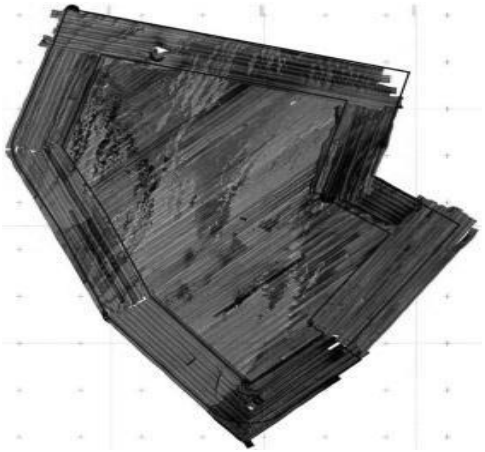


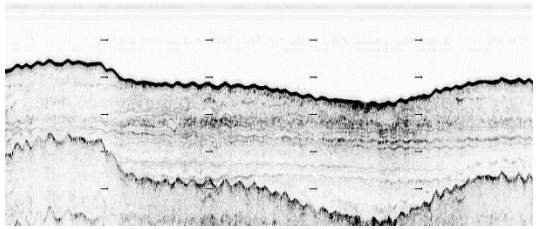


Sandy: Cooperative Agreements

- Round 1: Negotiating Agreements
  - Data synthesis, Data gap determinations
- Round 2: Analysis of G&G data







Sandy: Environmental Monitoring

- *Ecological Function and Recovery of Biological Communities within Dredged Ridge-Swale Habitats and in the South-Atlantic Bight*
- University of Florida, PI – Dr. Debra Murie
- Goals:
  - to quantify the unique functional ecosystem services
  - to determine the functional, biological services that are potentially compromised by dredging of sand
  - determine the degree of impact
  - to investigate the mechanisms of recovery
- Trawling, flat fish pots, gut content analysis, stable isotope analysis, acoustic telemetry, benthic sampling, Ecopath modeling

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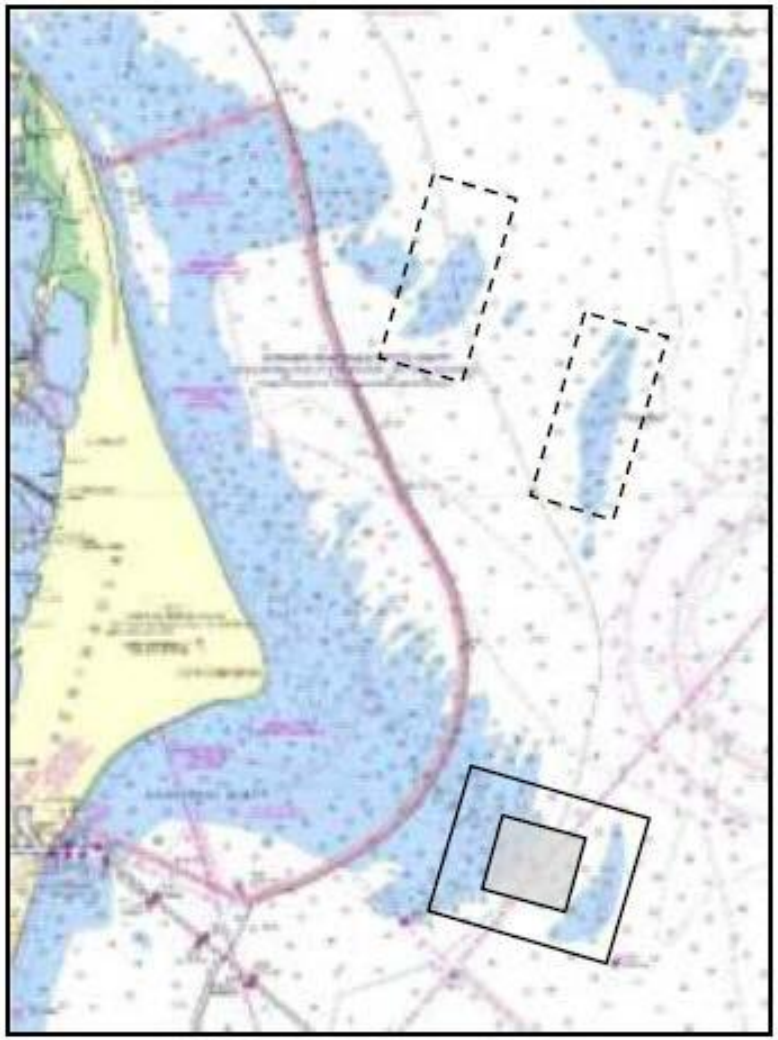
Sandy: Environmental Monitoring



Sampling sites for UF study

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Sandy: Environmental Monitoring

- Natural Habitat Associations and the Effects of Dredging on Fish at the Canaveral Shoals, East-central Florida study awarded to the Navy (NAVSEA) PIs – Joe Iafrate and Dr. Stephanie Watwood; Contractor (KSC) – Dr. Eric Reyier
- **Canaveral Offshore Shoal Habitat:**
  - Essential Fish Habitat
  - Prominent ridge-swale features and shoal complexes

- **More info needed:**
  - Small-bodied demersal and keystone pelagic fish species
  - Movements on a local and regional scale
  - Short-term and longer-term recovery for coastal fish species
  - Characterization and assessment of habitat value and function

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Sandy: Environmental Monitoring

- Seasonal movement of the fish and habitat associations will be documented by supplementing the existing Florida Atlantic Coast Telemetry (FACT) Array receivers with 23 additional receivers
- Complemented by 200 + existing receivers

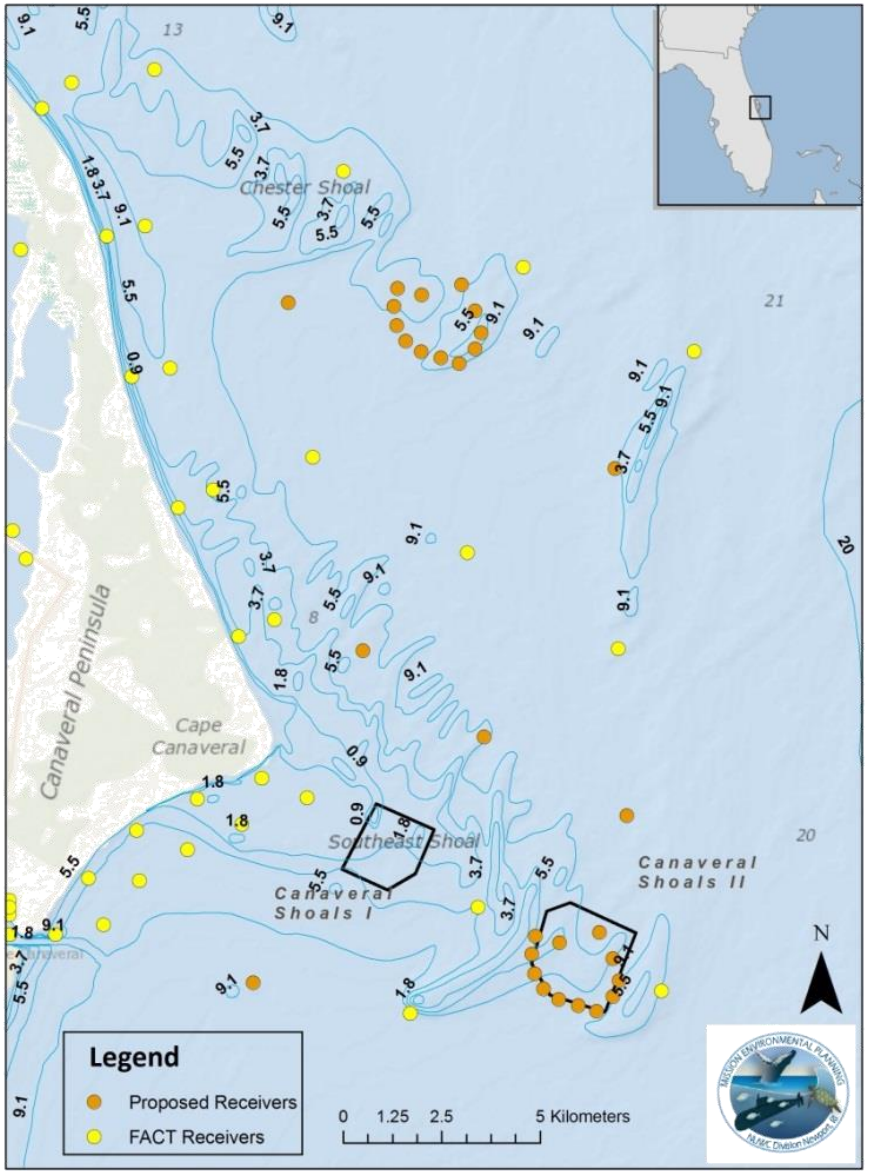

Figure 1. Existing and Proposed Receivers in Canaveral and Chester Shoals, FL

Project Summary and Objectives - 1

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

Key Objectives:

- Higher level predators
- Association with sand shoal features; migration
- Fidelity to specific areas within habitats
- Seasonal variation in habitat preferences
- Highly Migratory Species (HMS): timing of return to shoals
- Utilization of surf zone

Target Species (n=40 each, one release):

Finetooth shark (*Carcharhinus isodon*)

Red drum (*Sciaenops ocellatus*)

Scalloped hammerhead (*Sphyrna lewini*) - NASA

Project Summary and Objectives - 2

Finer-Scale Movements of Benthic Fish Species During a Sand Mining Event on the Canaveral Shoals

Key Objectives:

- Small-bodied, demersal species
- Site fidelity under normal conditions
- Habitat preference for forage fish
- Movement within adjacent habitats
- Comparison of control and dredge sites
- Response to sand mining; driving factors
- Assessment of possible displacement

Target Species (n=30 each site, 2 releases):

Spot Croaker *(Leiostomus xanthurus)*

Atlantic Croaker *(Micropogonias undulatus)*

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Summary of Efforts

December 2013 – January 2014:

Natural Habitat Associations and the Effects of Dredging
- 31 adult red drum
- 9 finetooth sharks

Finer Scale Movements of Benthic Fish Species
- 30 croaker and 30 spot (CSII)
- 36 croaker and 24 spot (Chester)

OCS Resource Management

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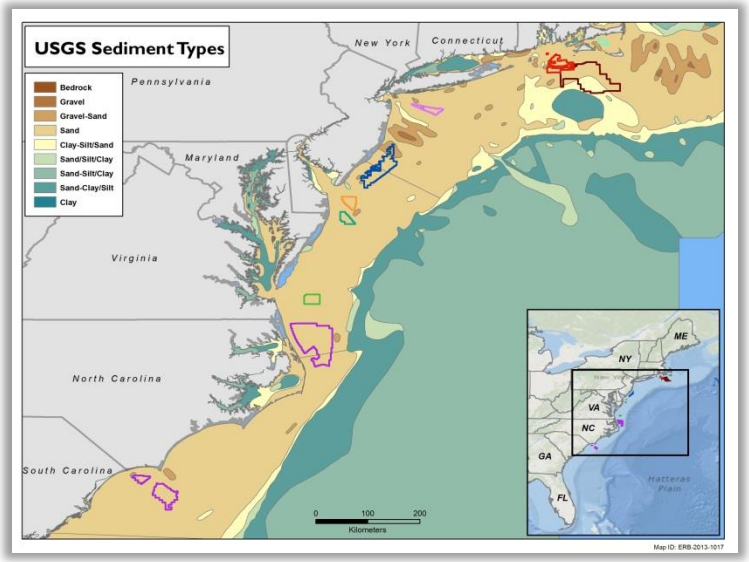
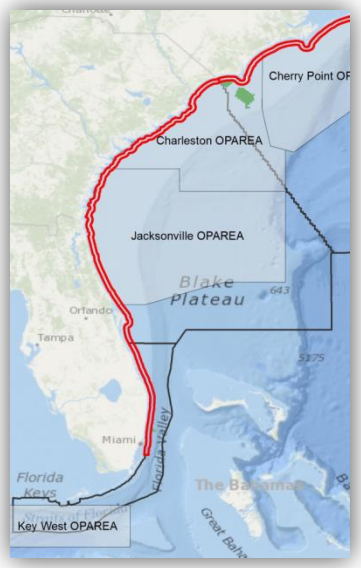
Regional Sediment Management

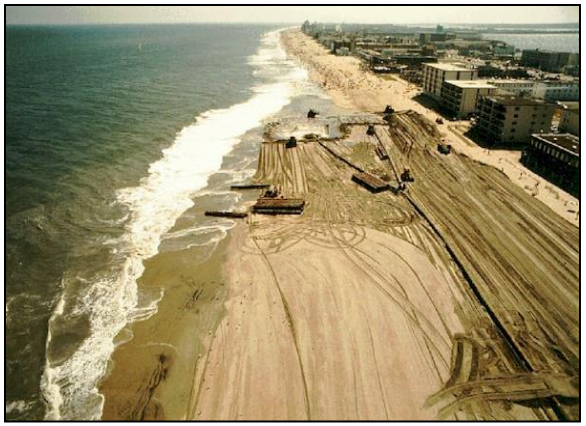
- Predicting Needs and Obstacles
  - Managing OCS Sand Resources
  - Multi-Use Conflict Management
  - Coastal Change
  - Financial Environment





OCS Resource Management

- Software to analyze raw data
- Policy to promote OCS resource management
  - Discussing possibilities of regional leases



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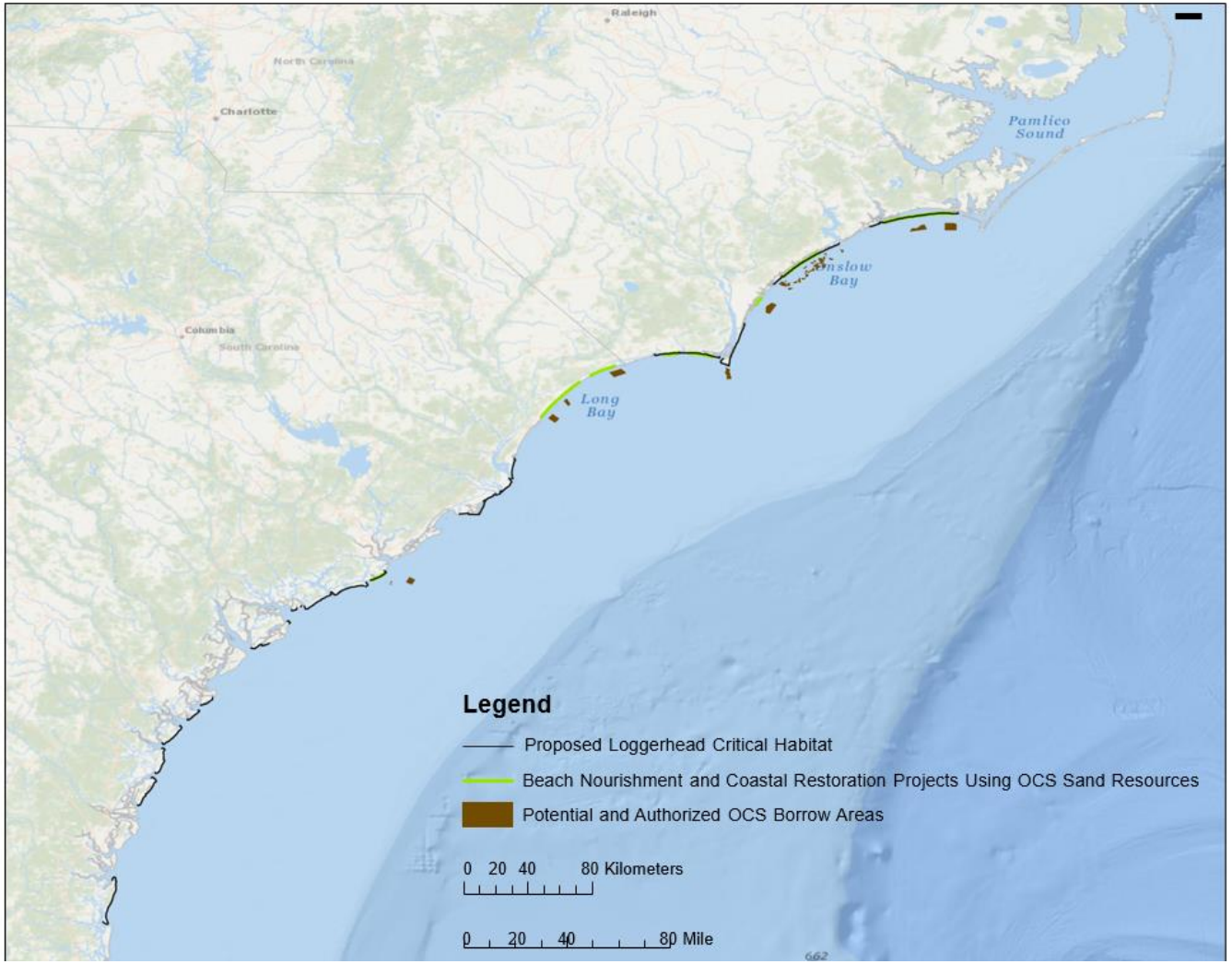
Regional Sediment Management



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Regional Sediment Management

- Managing multiple users
  - Pilot Regional Use Lease (Florida)
    - FDEP, BOEM, USACE
    - Programmatic NEPA, Consultations
- How to manage consultations?
  - Endangered Species Act Section 7 (NMFS vs FWS)
    - SARBO
    - Individual Biological Opinions
    - Programmatic Biological Opinions
    - Batched Biological Opinions
- Each State or locality may approach it differently
- Open to ideas, suggestions

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Other Upcoming Opportunities

- Pilot Regional Use Lease (Florida)
  - In development, with BOEM Management support
- Record Breaking BOEM MMP Research Investment
  - Propagation Characteristics of High-Frequency Sounds Emitted During High-Resolution Geophysical Surveys
- Final paper and continued efforts from OCS Sand Shoals Habitat Working Group in January 2014
  - discuss impacts from dredging on EFH and mitigation measures

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Conclusions

- Hurricane Sandy research
- Program elevation (within DOI and externally)
- Focus on regional resource management (identification and environmental issues)
- Opportunity to refine leasing process and streamline NEPA and consultations

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