BOEM
Bureau of Ocean Energy Management

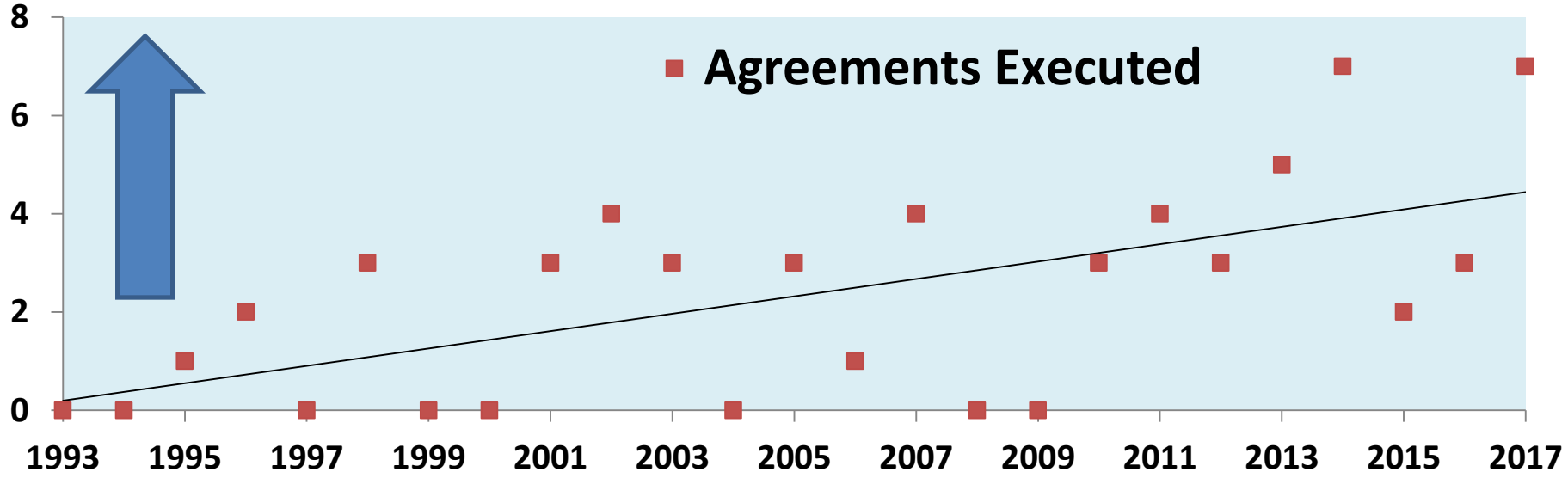
Gulf-Wide Offshore Sand Inventory

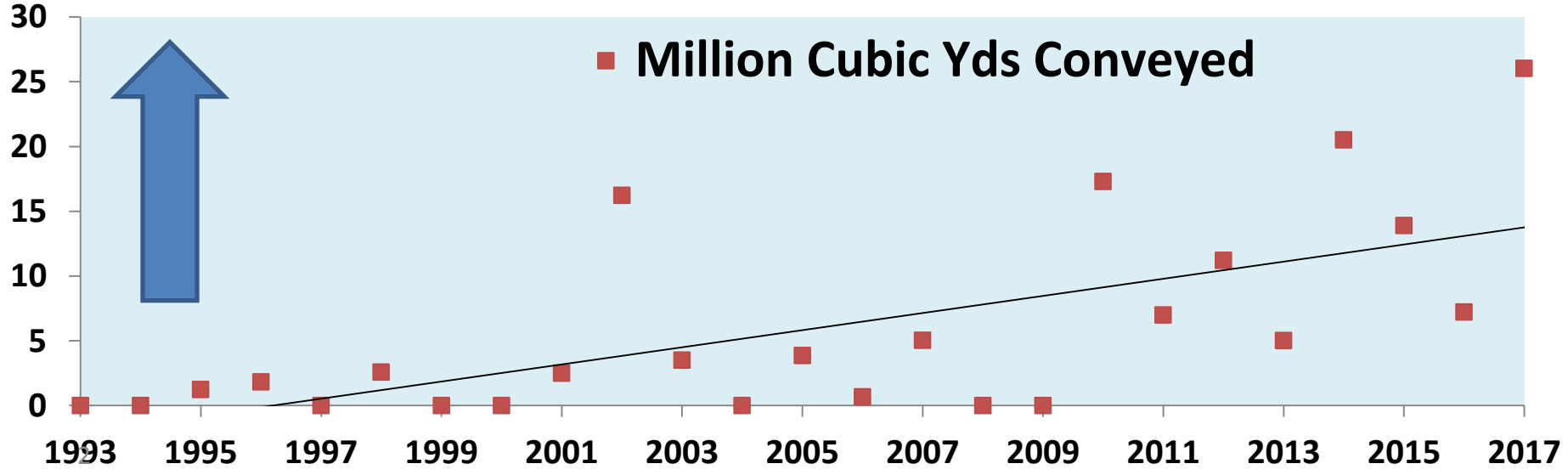
BOEM National Sand Inventory: Developing a Roadmap to Address an Increasing Demand for Sand from the Outer Continental Shelf

- **BOTTOM LINE**: In order to achieve the long-term MMP vision **we need**:
  - To **know where the resources are** in order to serve as **effective stewards** of the resource.
  - A "**National Sand Inventory**" and interrelated **MMIS database** to serve as the **foundation of the MMP**.
  - To position ourselves to be more **Proactive vs. Reactive**.
  - Prepare **comprehensive marine resource impact assessments** (i.e., categorical exclusion (short term) vs. programmatic EA (long term)
  - **Dedicated resources** to effectively do our jobs and build competencies.
  - **Continue leveraging** opportunities within a constrained budget climate.

BOEM
Bureau of Ocean Energy Management

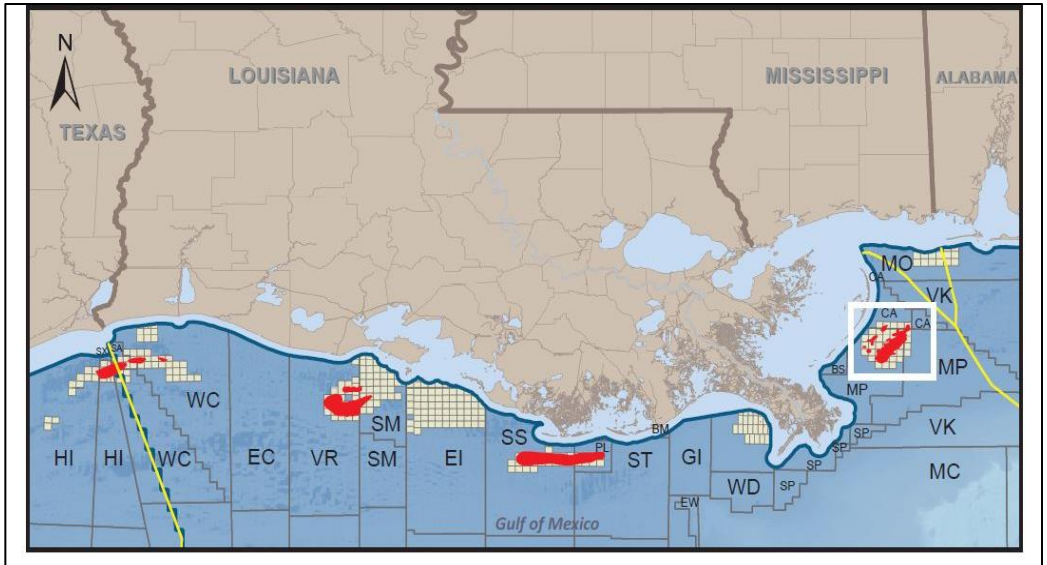
Increasing Demand for OCS Sand

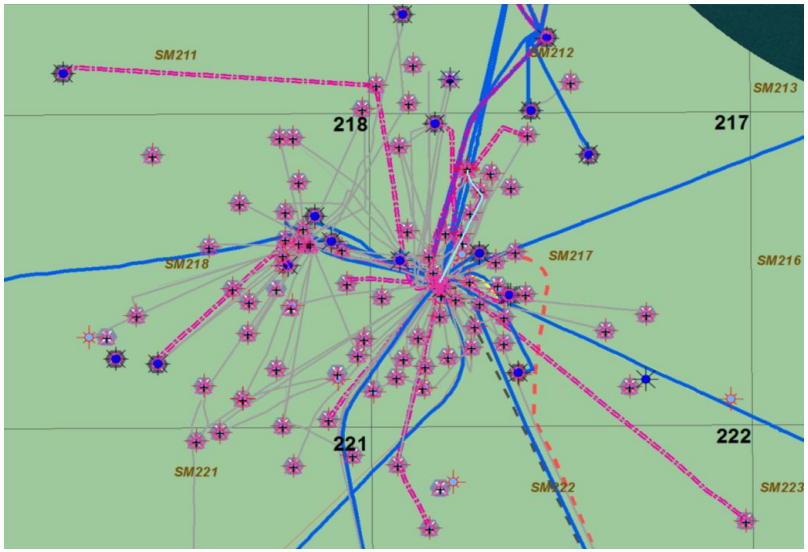




Gulf of Mexico: Managing Multiple Uses

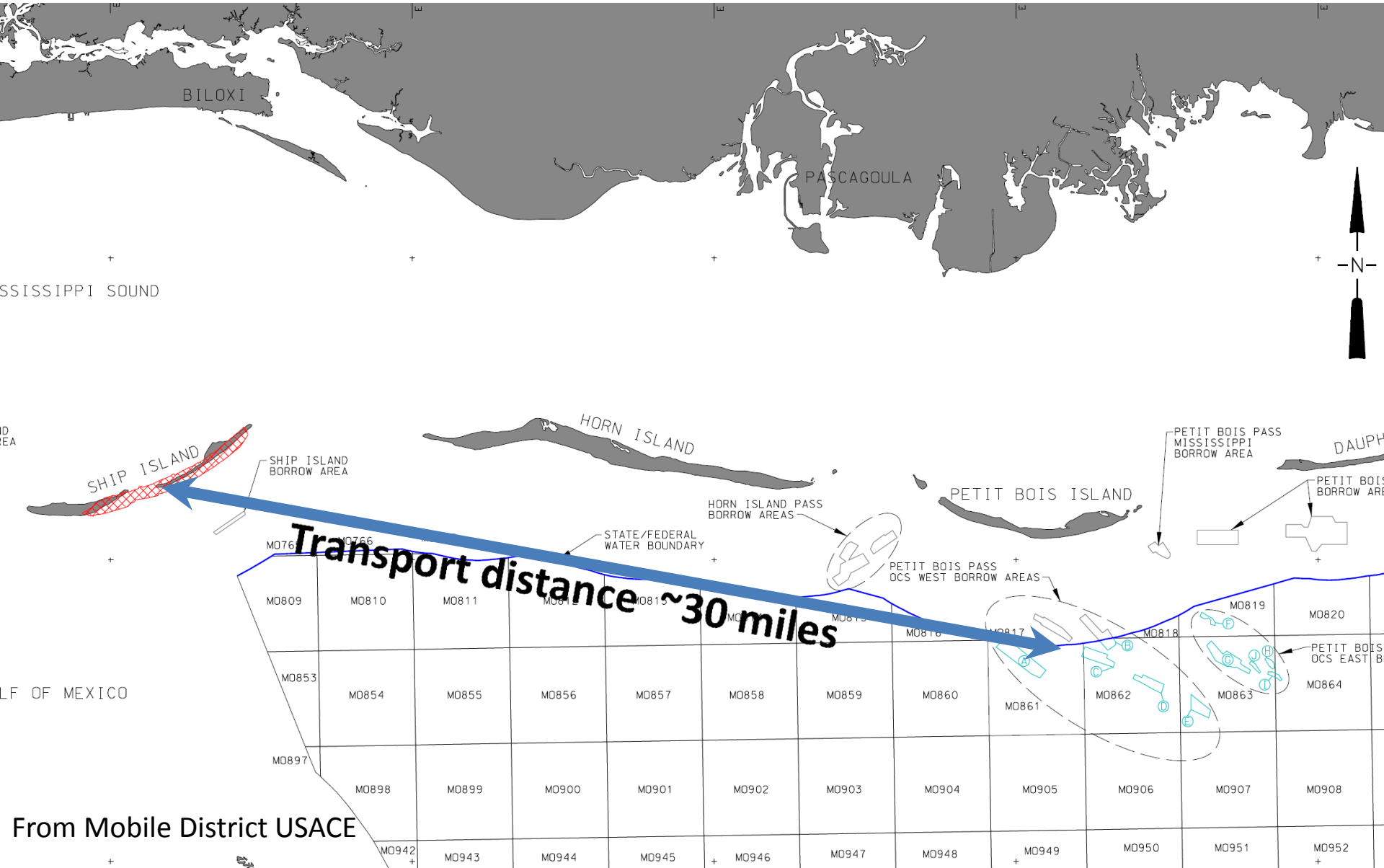
- Sand extremely scarce where needed most in northern GOM
- Geological data lacking: OCS sand resources not well constrained
- Oil and gas infrastructure obstructs access = higher costs to projects
- Significant OCS Sediment Resources policy developed: BOEM must proactively manage resources to ensure availability
- For efficient resource management, reliable geological/geophysical data are key – Gulf-Wide Sand Inventory initiative





Gulf-Wide Sand Inventory
Mississippi Co-Op

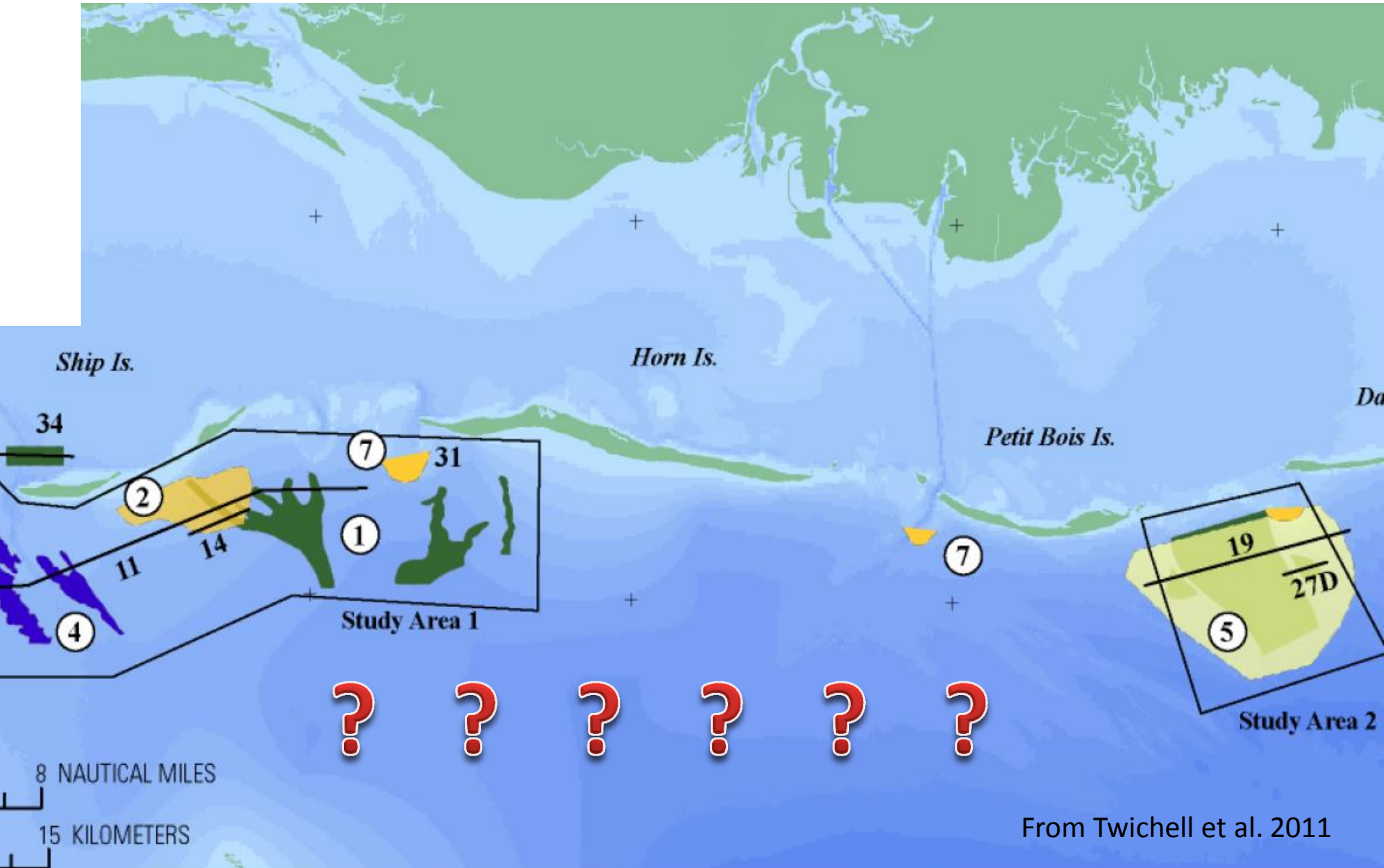
BOEM
Bureau of Ocean Energy Management



From Mobile District USACE

BOEM
Bureau of Ocean Energy Management

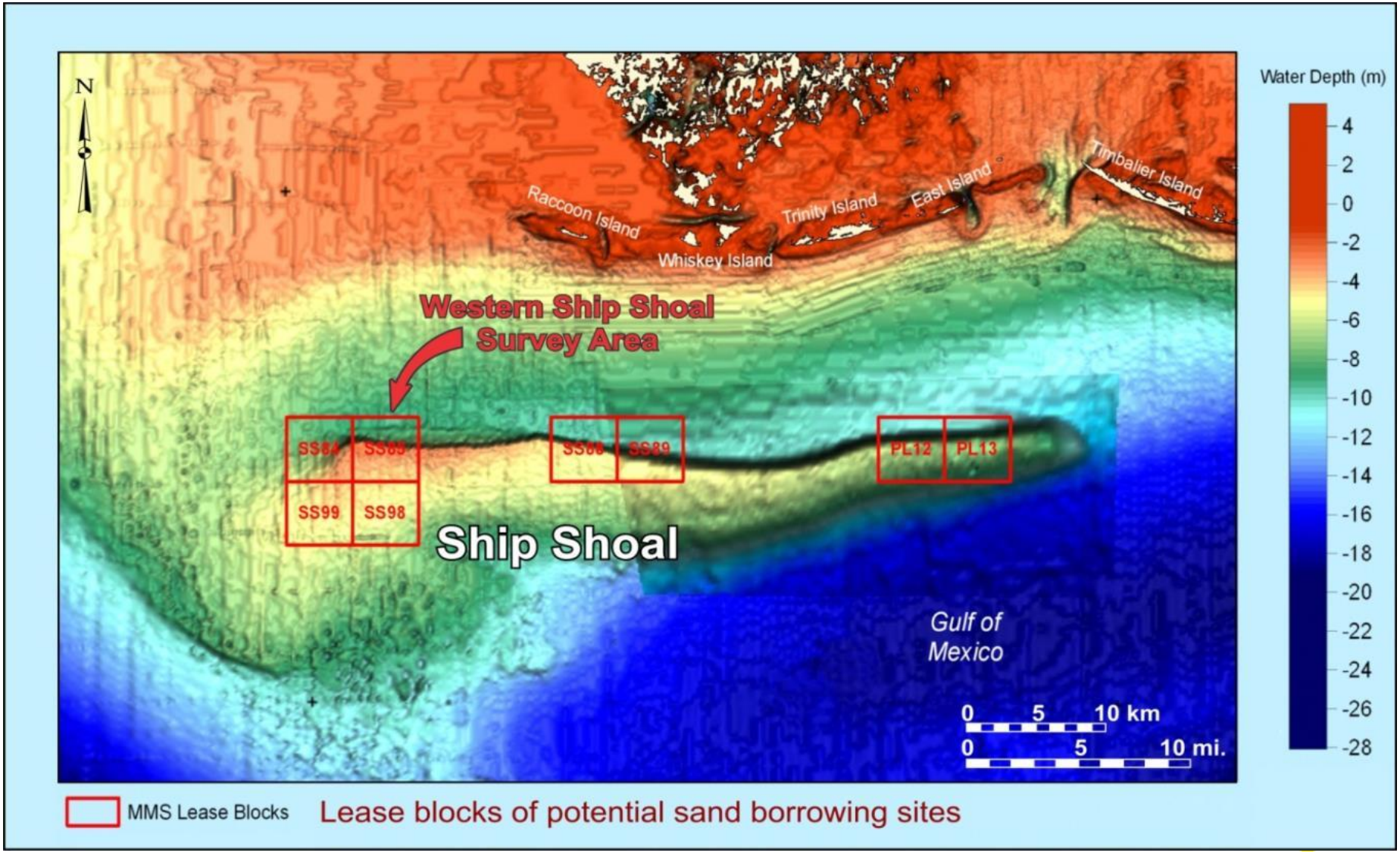
Gulf-Wide Sand Inventory
Mississippi Co-Op



From Twichell et al. 2011

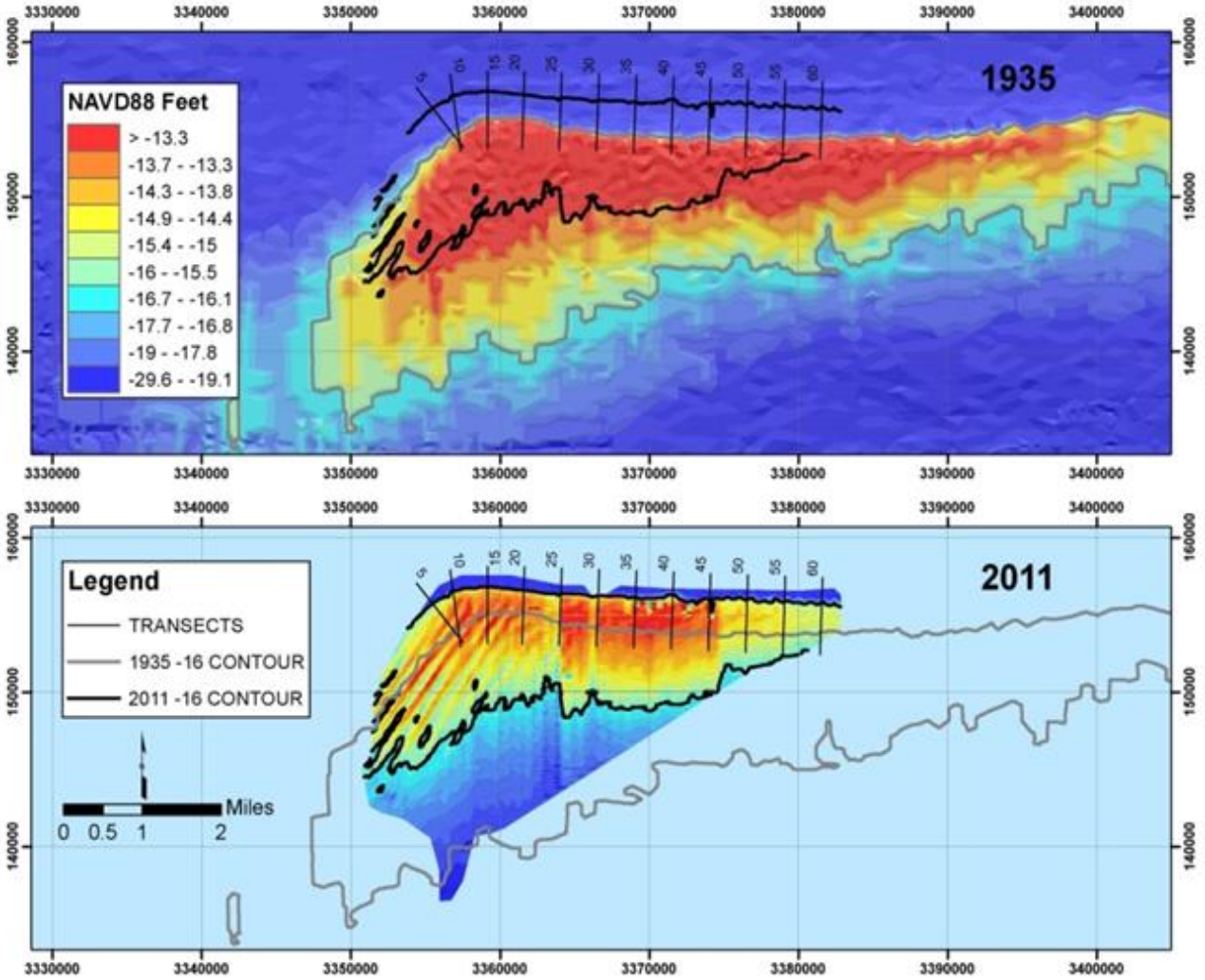
BOEM
Bureau of Ocean Energy Management

Seafloor Sediment Dynamics Also Important: Ship Shoal Example



BOEM
Bureau of Ocean Energy Management

Seafloor Dynamics at Ship Shoal



- -16 ft contour migrated an average of 2,050 ft between 1935 and 2011
- 1935 bathy basis for delineating sand body
- Considering sediment dynamics not just static geology

From Roberts et al. (2013)

Gulf-Wide Offshore Sediment Inventory

- Coordination with Gulf States and other federal agency (USGS, USACE, etc.) 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 (managing use conflicts, decrease restoration planning uncertainty, etc.)

BOEM
Bureau of Ocean Energy Management

Gulf-Wide Sand Inventory: Methods

1. Database development → Marine Minerals Information System (MMIS)

2. Existing data: mining, digitizing, incorporation into database

3. New geological and geophysical data collection based on gap analysis

4. Delineation of sand bodies, quantified reserves estimates, and characterization of resource properties (e.g. texture, mineralogy, etc.)

5. Gulf-wide stakeholder coordination

Gulf-Wide Sand Inventory Strategy

Near Term Strategy

- Implemented though cooperative agreements with States and interagency agreement with USGS
- Existing:
  - Texas
  - Mississippi
  - USGS
- Pursuing RESTORE planning grant funding (aka CPS grant) for FL, AL, and LA ($250-300k each) in FY18
  - develop working group with all 5 states and USGS

Gulf-Wide Sand Inventory Strategy

Long Term Strategy (10 years)

- **2018 – 2020**
  - Work with States through co-ops and USGS through IAA to develop proposal for long term funding through RESTORE (2020 FPL).
  - Existing data incorporated into MMIS, data gaps identified and prioritization to direct new data collection
- **2020 – 2028**
  - 6-8 year program that funds Gulf Sand Inventory at ~ $2.5 million/yr for new data collection, sand resource delineation, ore-quality assessments, and quantified reserves estimates

BOEM
Bureau of Ocean Energy Management

Major Challenges

- Volume of analog data
  - How far do you take it? (ex: scanned pdf of core log or a standard format digital core log…)
- Stakeholder coordination
  - Stakeholder priorities/interests are variable
  - Scientists communicating with stakeholders and understanding their needs → applicable science!
- Long term commitment of resources/funds
  - Highly specialized staff
  - Database maintenance and update support