MMS Information Transfer Meeting

Gulf-Coast Post Katrina/Rita Sand Resources

Evaluation of the Sand and Gravel Resources Suitable for Post-Katrina Restoration, Mississippi-Alabama Shelf

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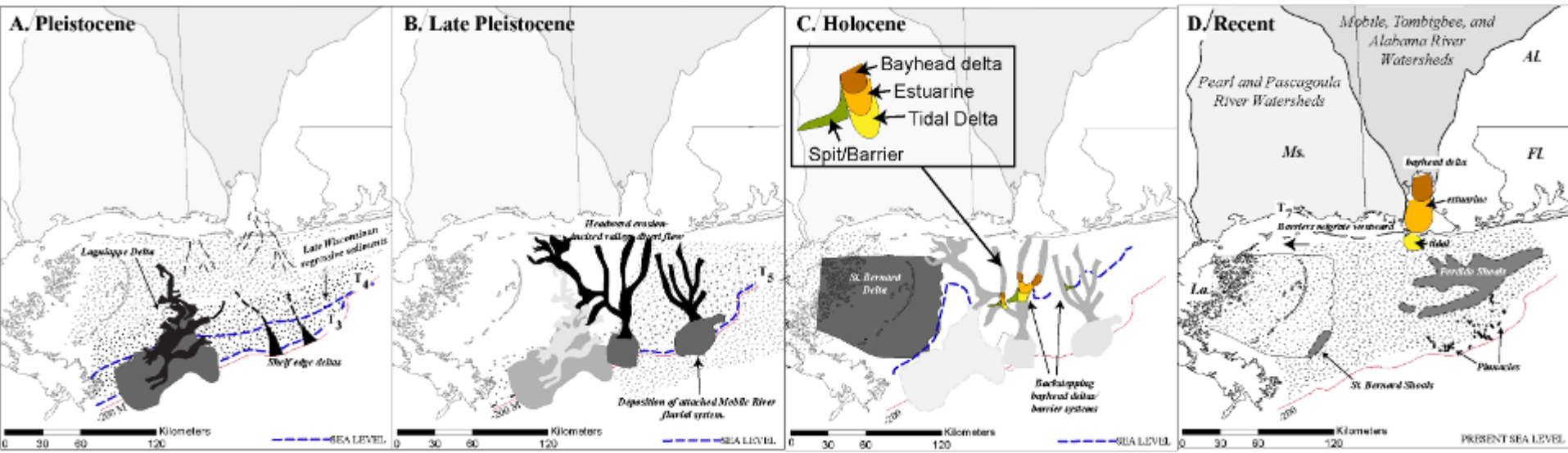
Presentation Outline

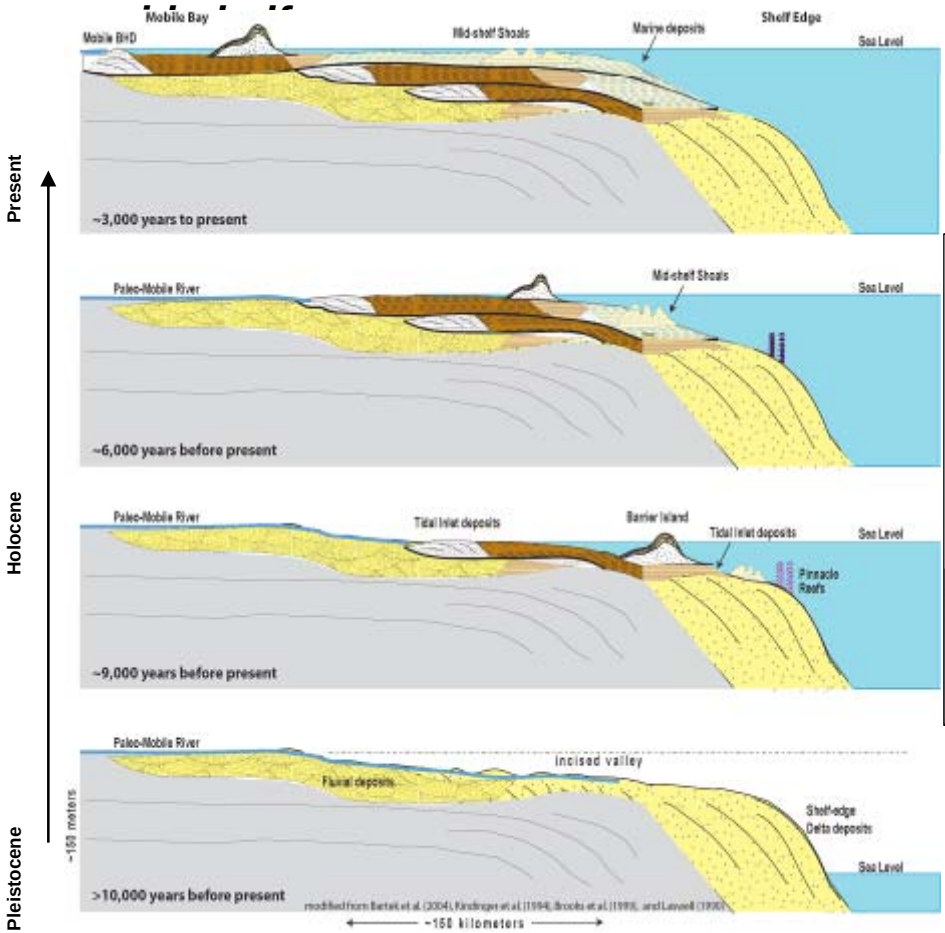
- Geologic history of the Louisiana-Mississippi-Alabama (LMA) Shelf
- USGS recent efforts on the LMA Shelf
  - Data archive
  - Seafloor/sub-bottom surveys
- Areas of interest (St. Bernard Shoals)

Late Pleistocene to Recent Geologic History, LMA Shelf

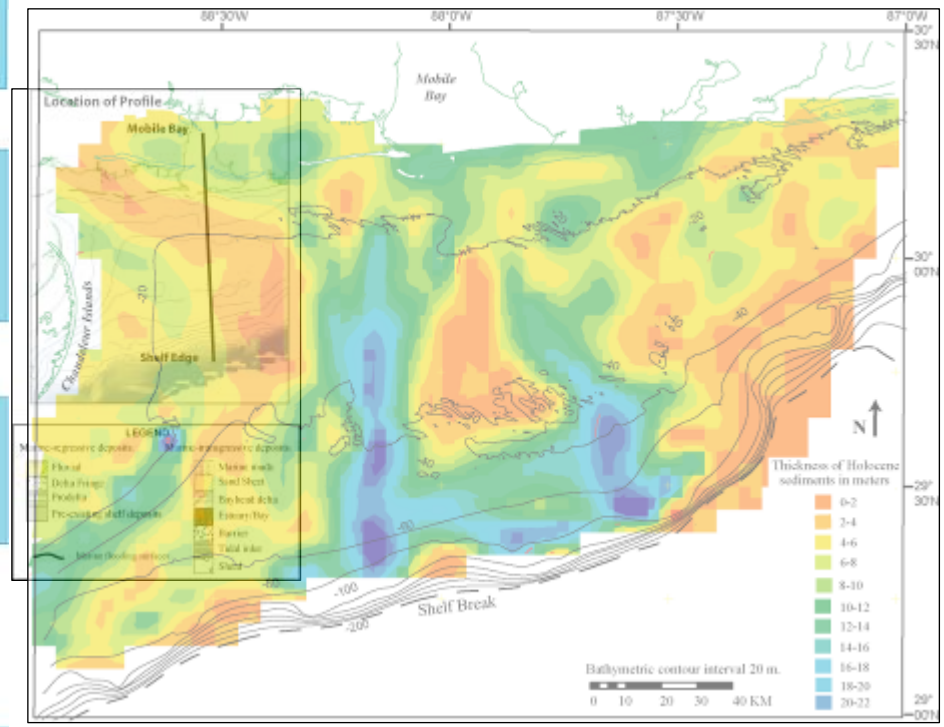


Sediment Distribution and Thickness

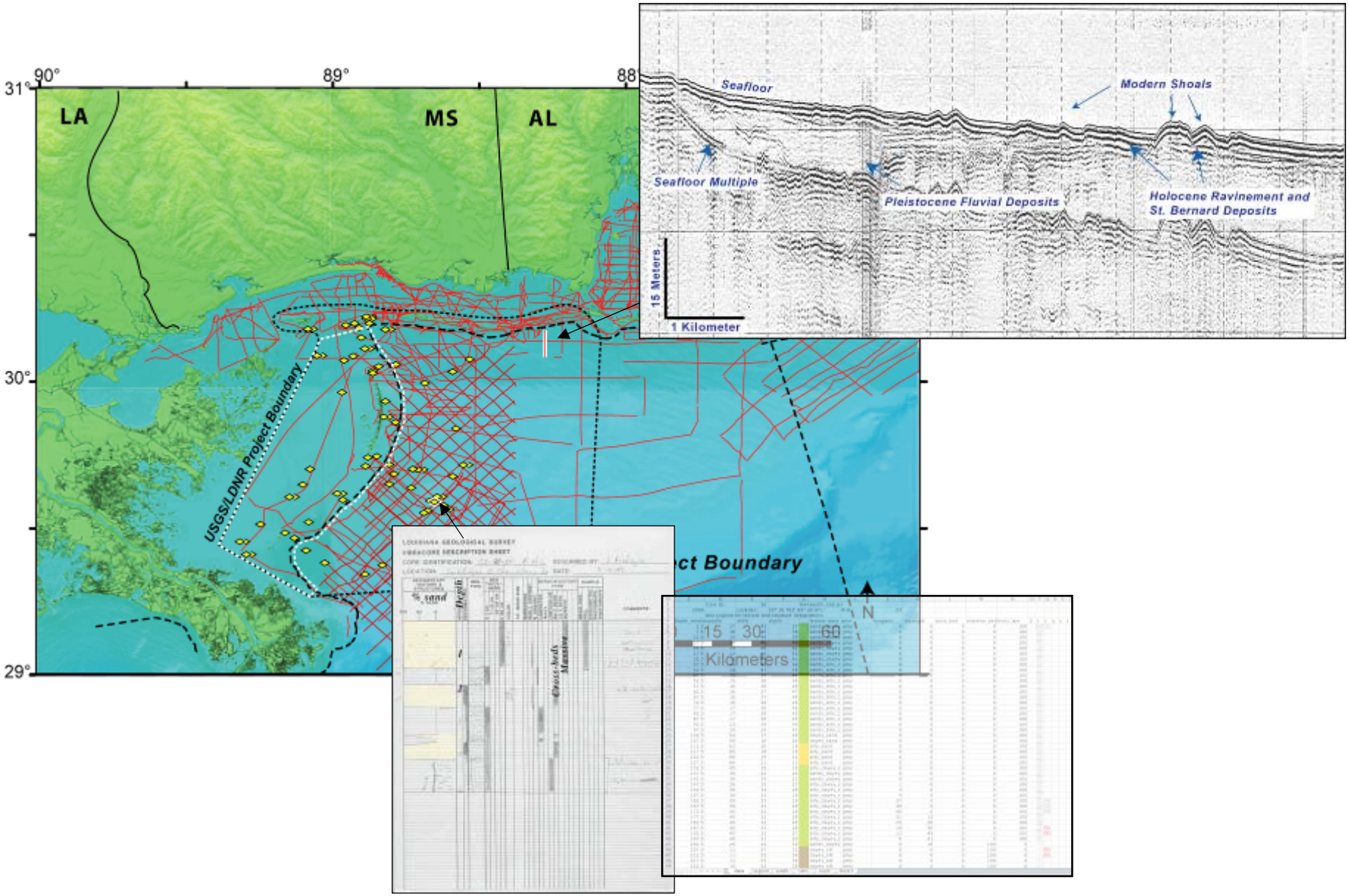
Development of Holocene tidal/barrier/estuarine sequences,



Thickness of Holocene sediments



Available Geologic Data, LMA Shelf



2006–2009 Research Areas, LMA Shelf

Louisiana Barrier Island Comprehensive Monitoring Program (BICM)

Northern Gulf of Mexico Ecosystem Change and Hazard Susceptibility Project

Predicting the Resilience of the Chandeleur Island Chain as a Function of Restoration Options:

- Can the islands be restored, and is it feasible in the long and short term to restore and rehabilitate parts of Breton National Wildlife Refuge?
- How much benefit will restoration provide to struggling habitats, or will the islands rebuild themselves naturally?
- Is there a point of no return for the Chandeleur and Breton Islands; are they ultimately going to disappear completely?

Multi-agency Barrier Island Restoration Recommendation:

- Restore crucial sediment transport and budget to a natural state through littoral zone deposition and small-scale beach nourishment projects
- Monitoring during and following the implementation of the barrier island restoration, and adaptive management to assess progress and short and long term impact

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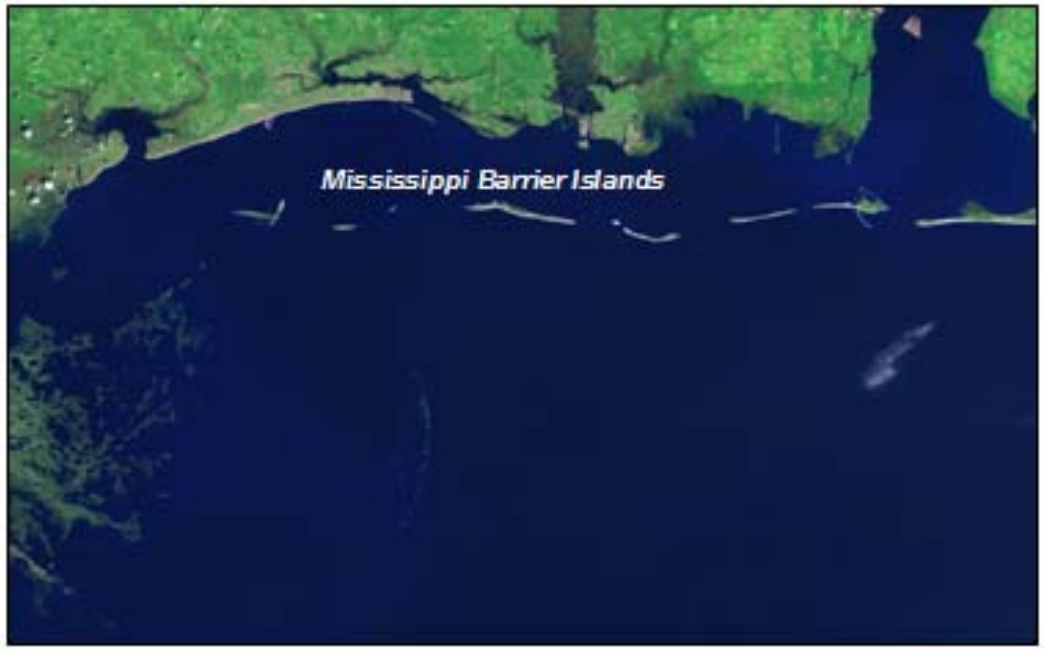

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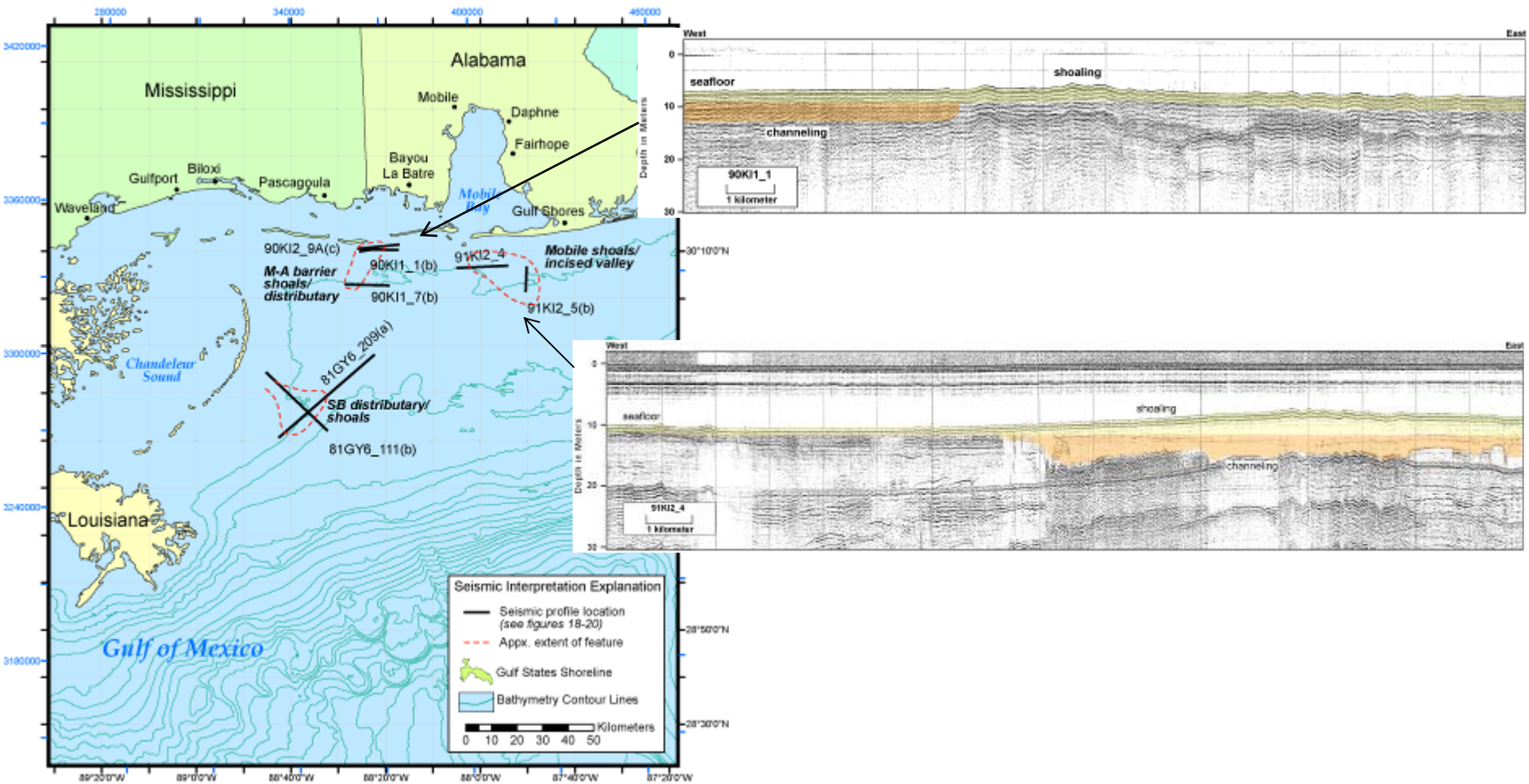
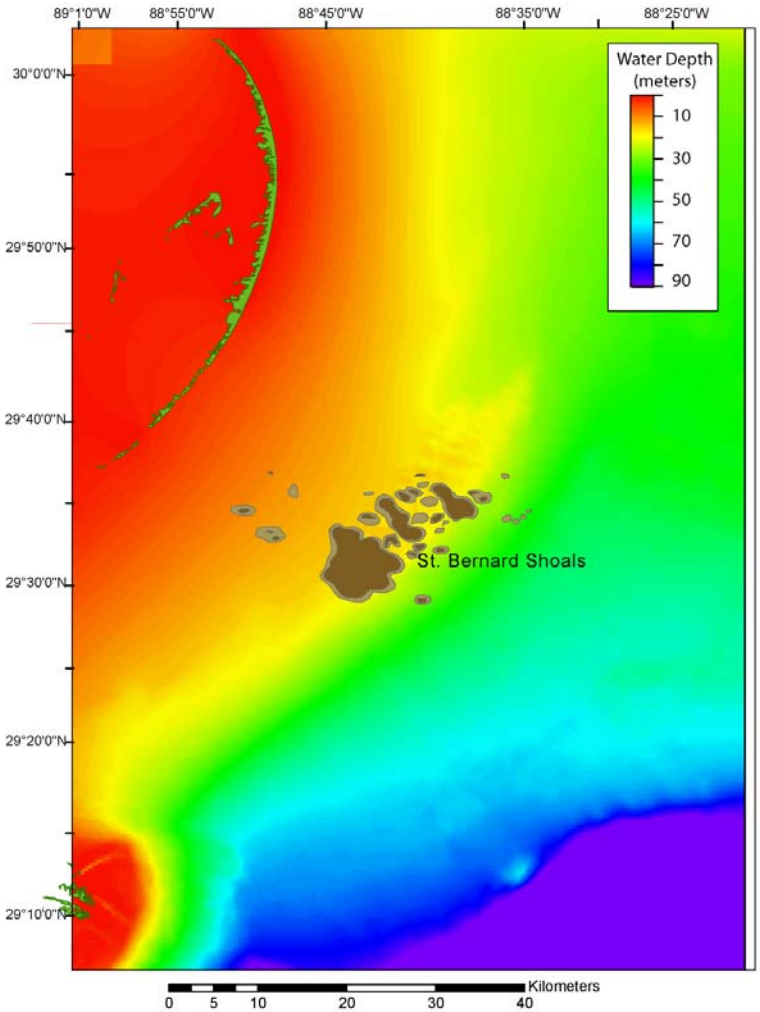
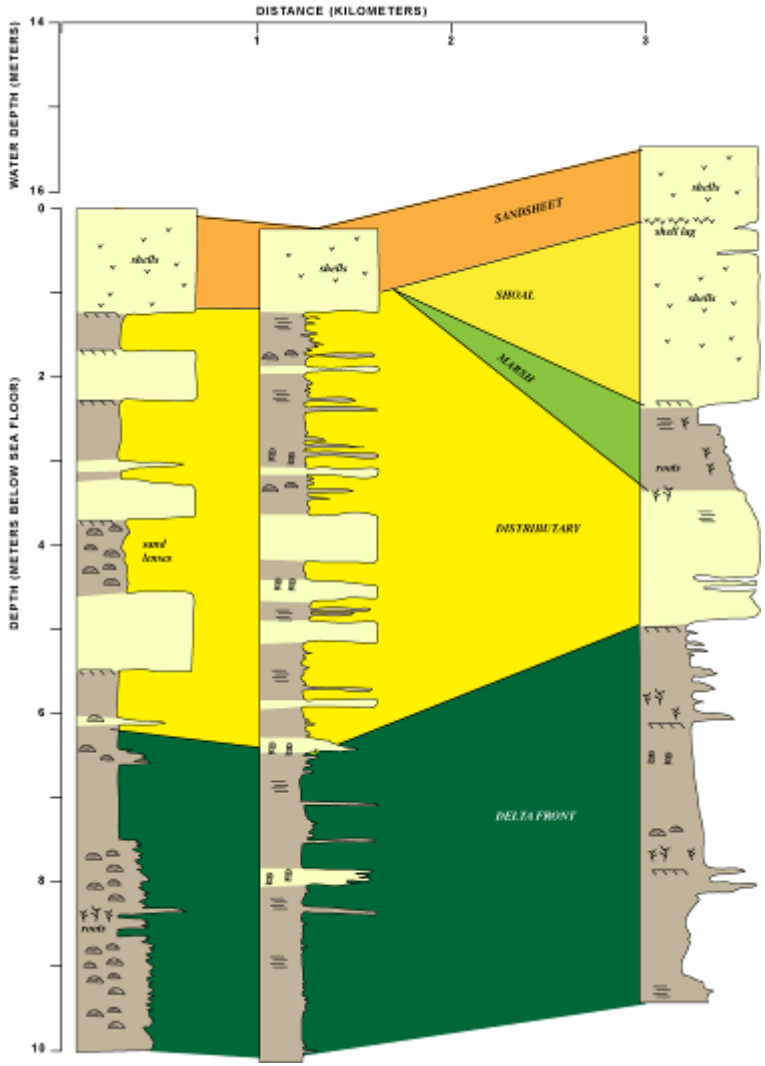
Areas of Potential Sand Resources, LMA Shelf



St. Bernard Distributary/Shoals





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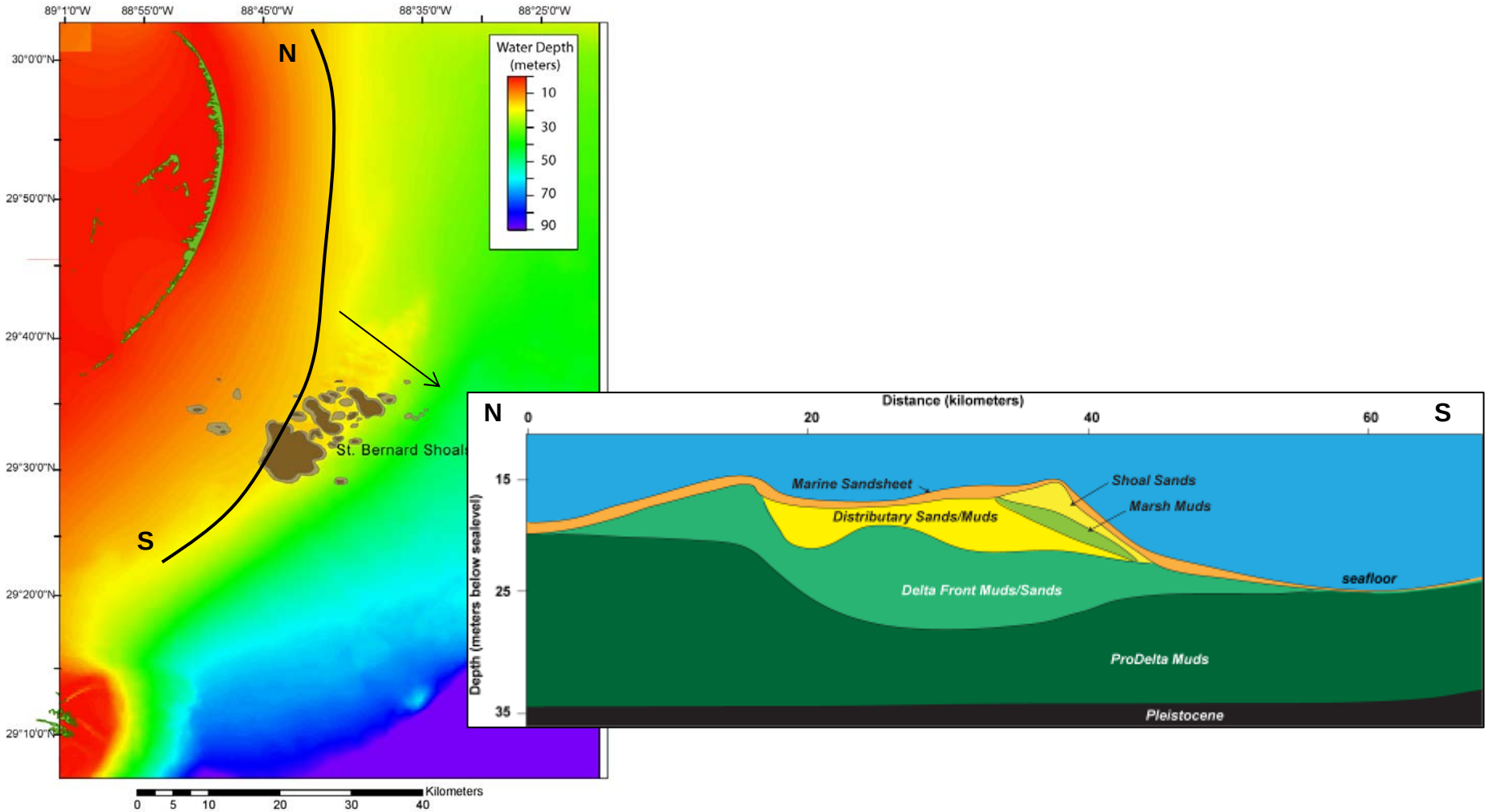
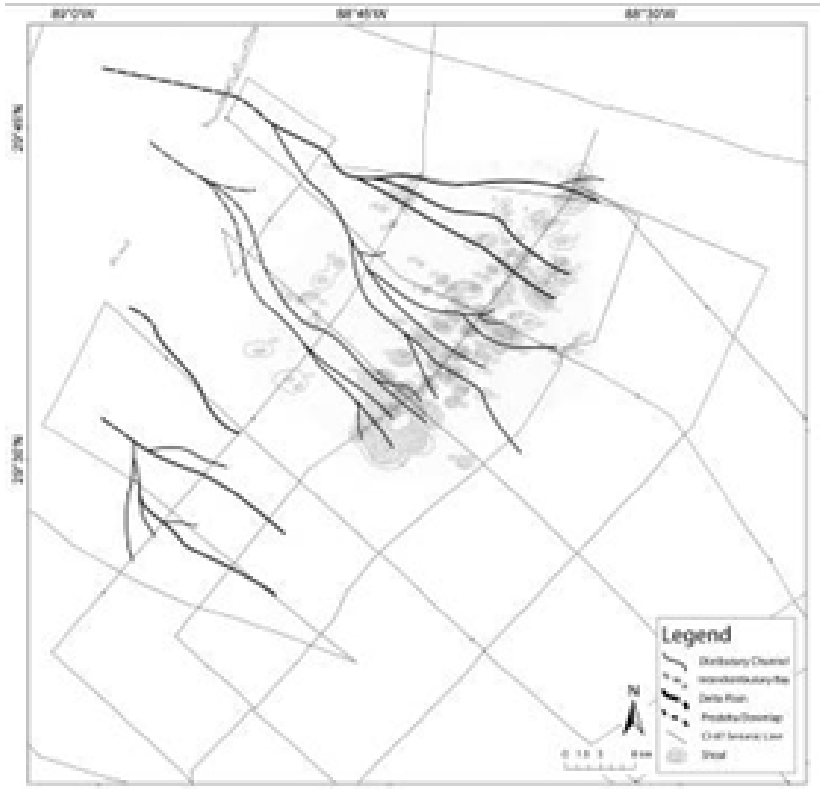
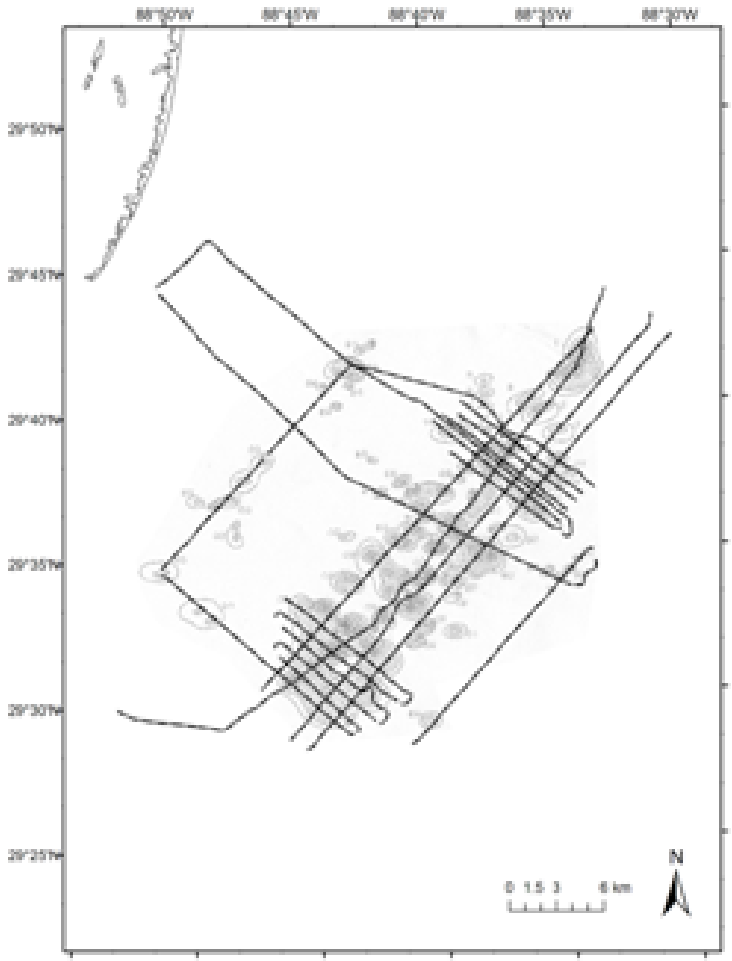


St. Bernard Distributary/Shoals

St. Bernard distributary network



2008 UNO/FWS/USGS Survey



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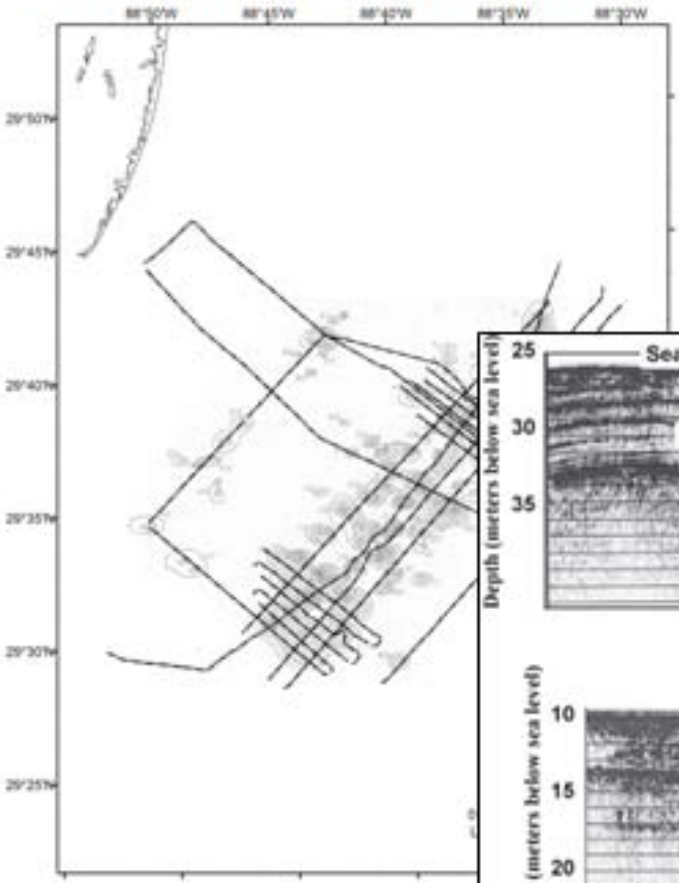
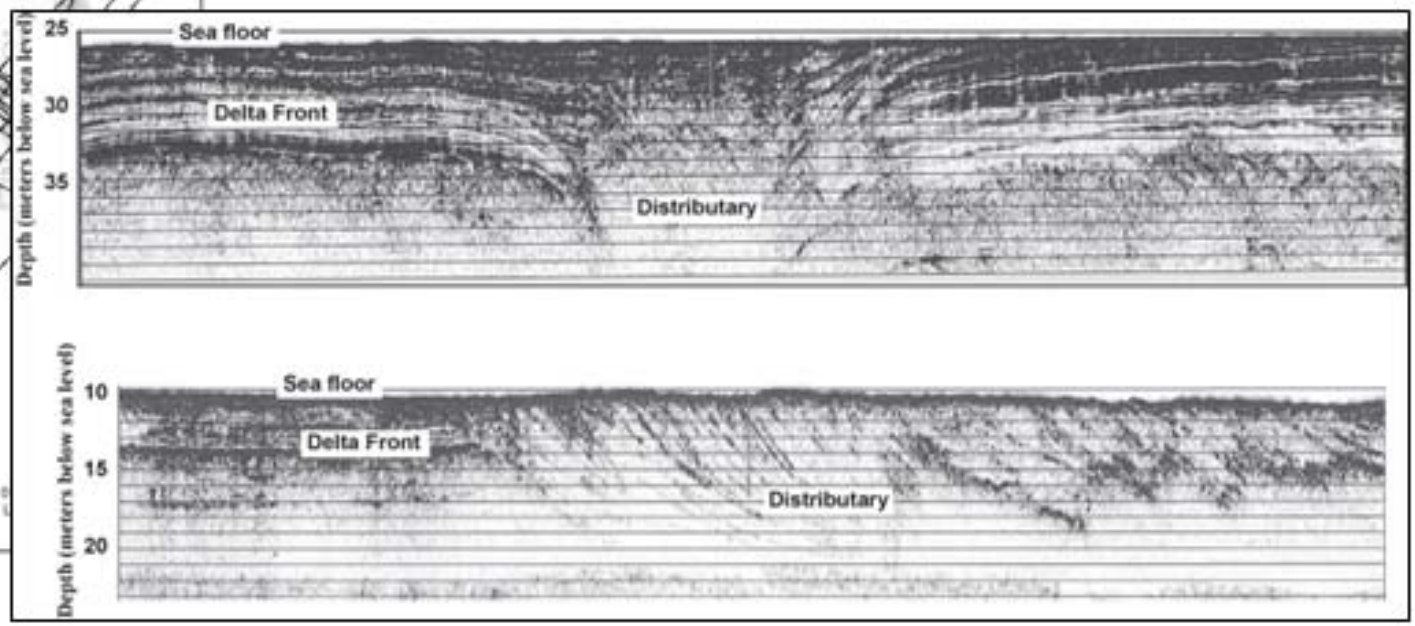


Distributary deposits



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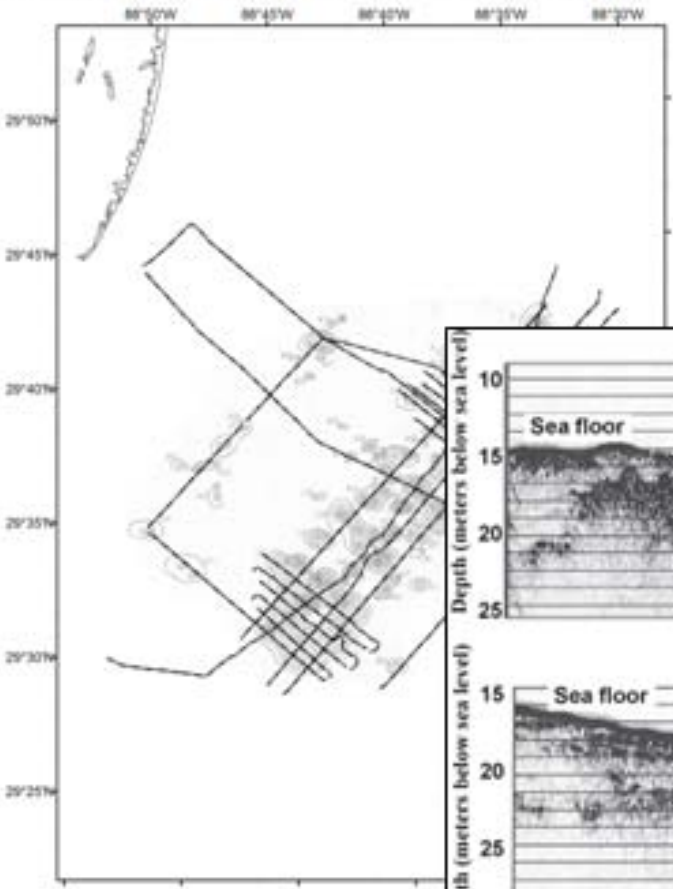
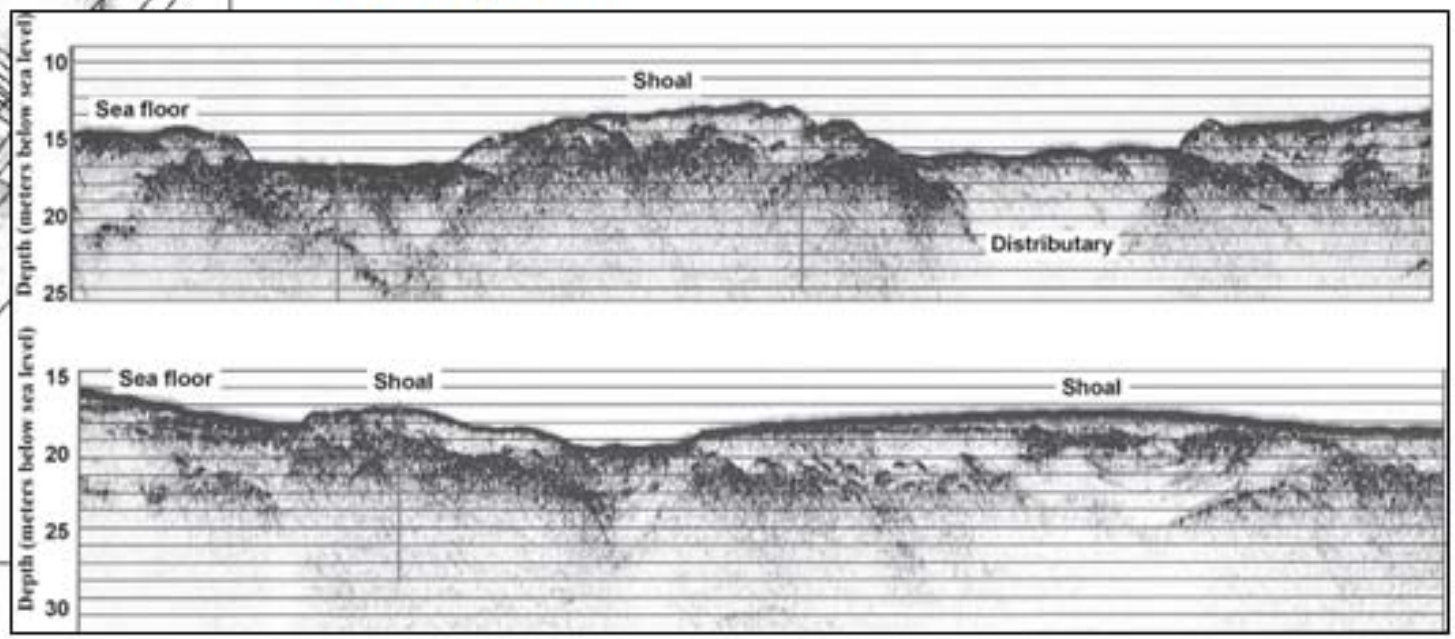
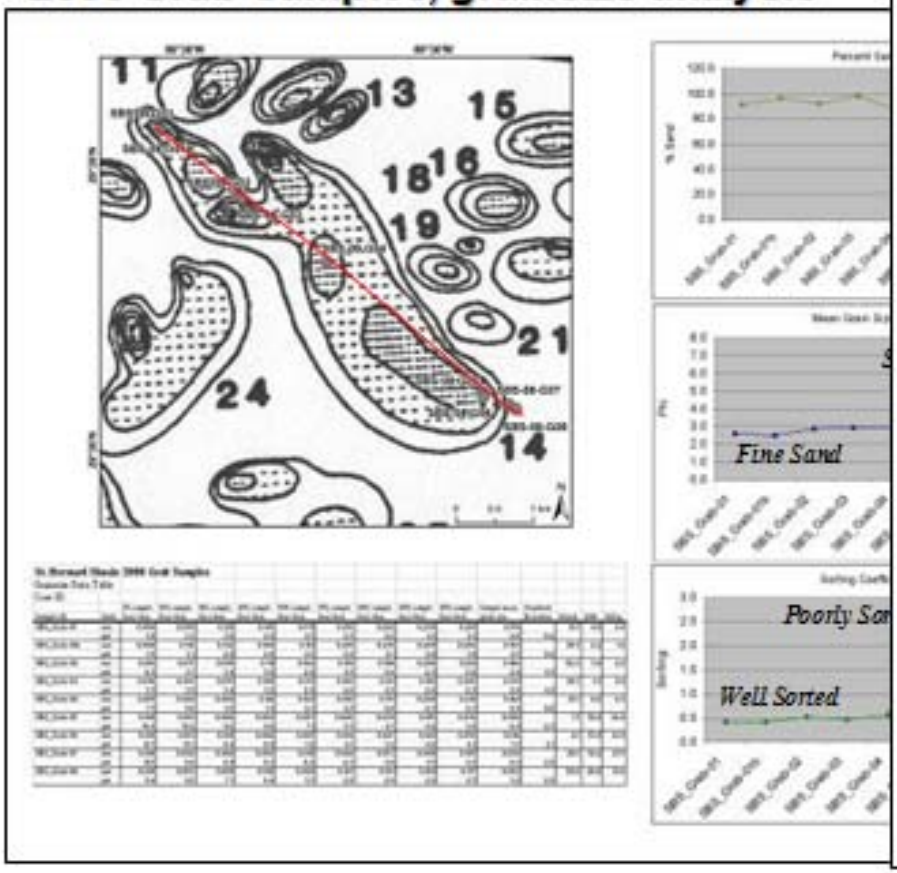


Shoal deposits

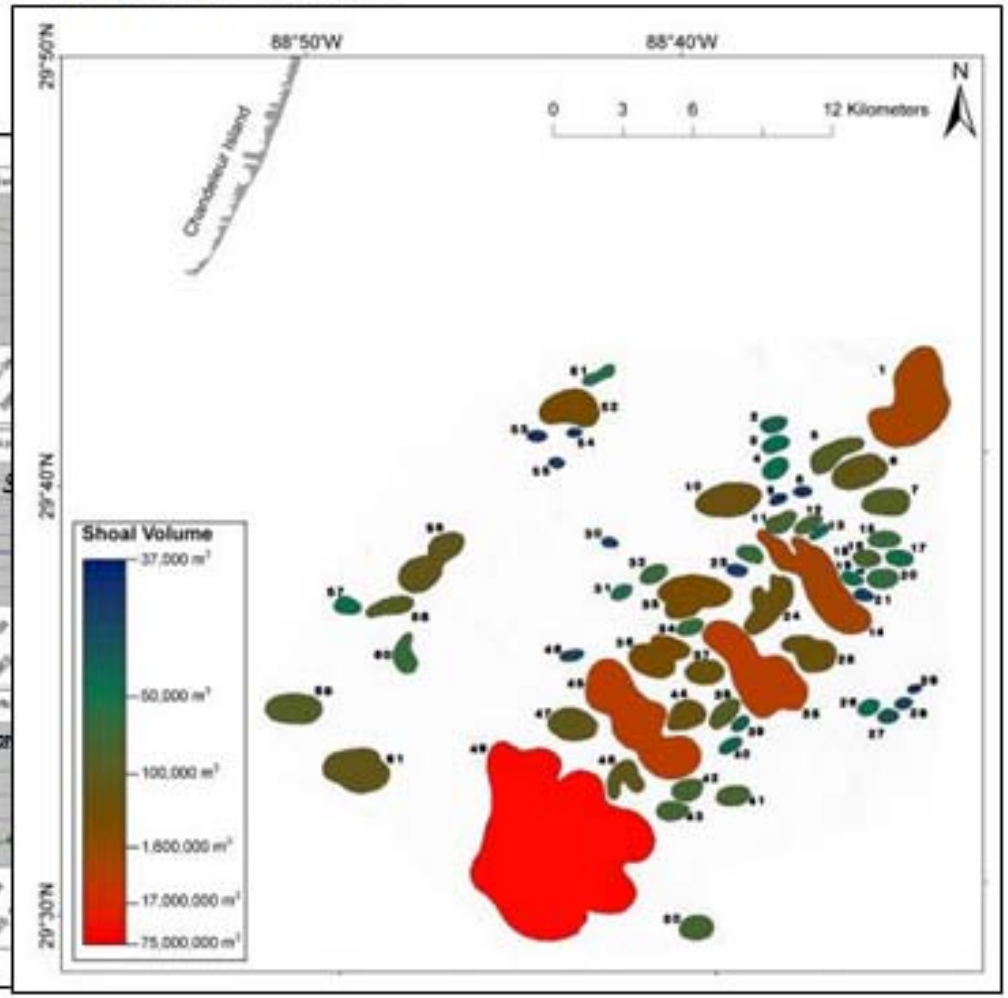


St. Bernard Distributary/Shoals

2008 Grab Samples, grainsize analysis



Volume estimates



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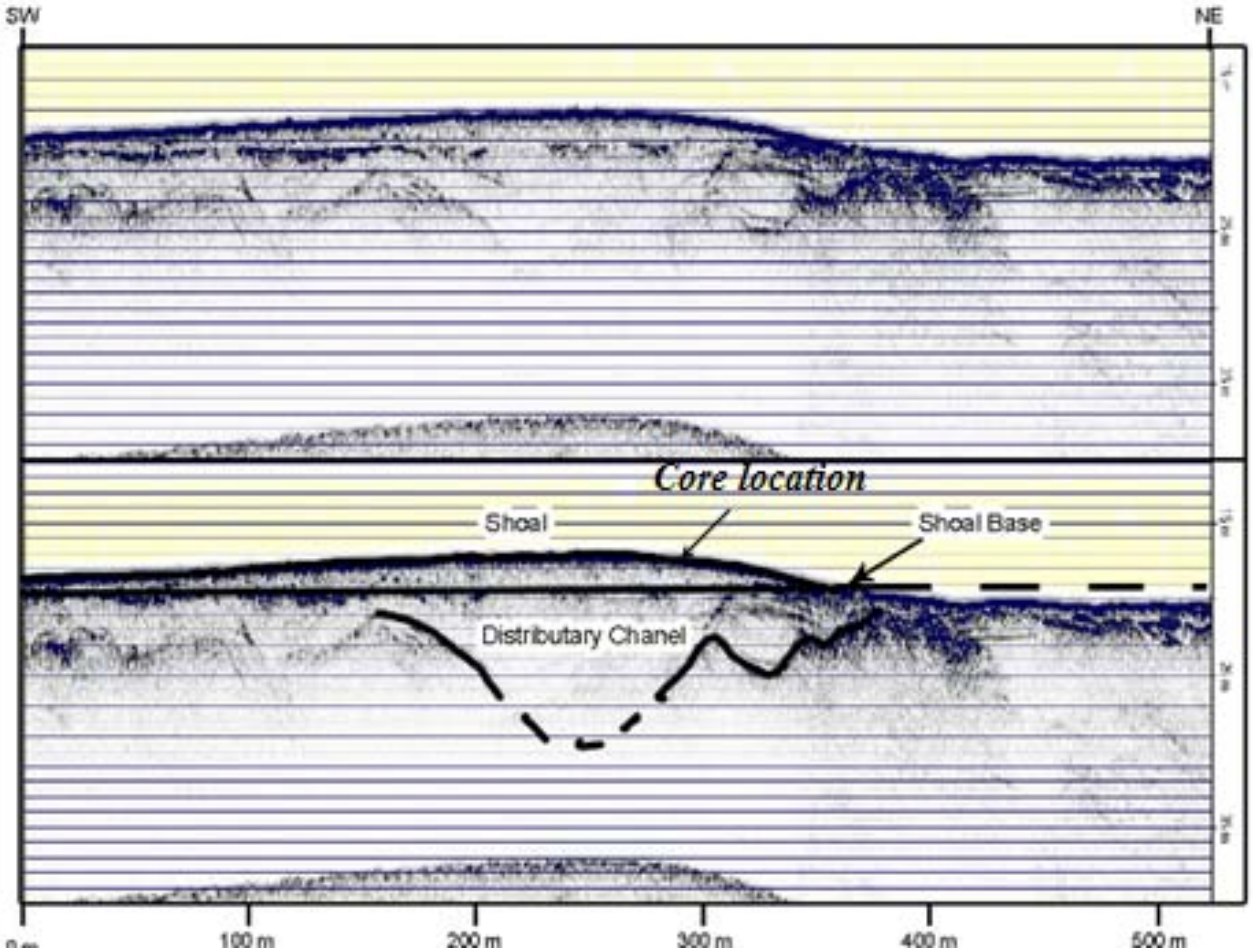
2009 Sediment Core Strategy