

Engineering With Nature Project Fact Sheet



Title

Landscape Evolution of the Oil Spill Mitigation Sand Berm in the Chandeleur Islands, Louisiana

Background

Oil-spill-mitigation sand berms were constructed in the Chandeleur Islands, Louisiana, between June 2010 and March 2011. These berms were constructed largely as a means of reducing impacts of the Deepwater Horizon oil spill (rig blowout occurred on 20 April 2010) to sensitive ecosystem resources (Figure 1). Since the sand berm's conception, the life span and impacts associated with the construction of those berms have been widely debated.

Objectives

This Engineering With Nature project will monitor the short-term evolution of the sand berm to provide measures of berm performance and potential impacts to the Chandeleur Islands. Project data and deliverables will increase sediment management scoping, screening, and operations efficiencies; and increase predictive and adaptive management capabilities.

Approach

We propose to prepare an overview of shoreline and landscape changes within the vicinity of the sand berm. Existing geospatial data will be utilized to complete four tasks: (1) generate a pictorial account and quantify changes in sand berm areal extent over time; (2) assess elevation changes and potential reworking of berm sediment into the island system (Figure 2); (3) provide historical shoreline, habitat, and landscape assessments of the Chandeleur Islands, and (4) disseminate study findings through a technical report. The historical assessments will consist of decadal or greater time-periods, and the berm-specific analyses will generally consist of annual time-steps. Ultimately the periods of analyses will be based on the availability of classified/unclassified aerial photography and satellite imagery, and time requirements for performing additional land and water classifications.

Outcomes

Final products and methodologies developed as part of this study will be transferred via geospatial data, figures and maps, a technical report, and will be presented at the Dredging Operations Technical Support and Engineering With Nature program reviews.

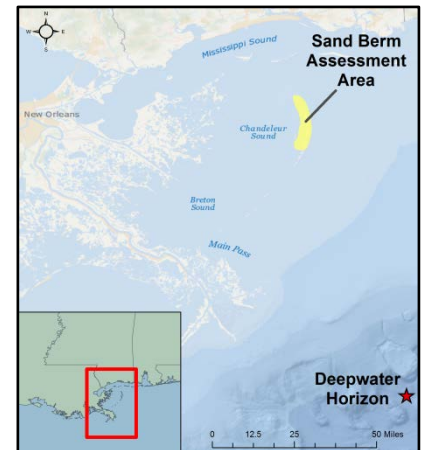


Figure 1. Location of the Chandeleur Island Sand Berm Assessment Area

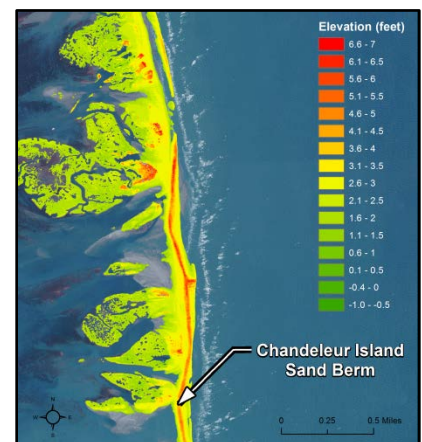


Figure 2. Post-construction LiDAR elevation data (USACE 2011)

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