

BOEM ENVIRONMENTAL STUDIES PROGRAM: ONGOING STUDIES

BOEM OCS Region: [Gulf of Mexico](#)

Title: Analyzing the Potential Impacts to Cultural Resources at Significant Sand Extraction Areas (GM-12-04)

Planning Area: Central

Total Cost: cost here

Period of Performance: FY 2012-2015

Conducting Organization: Tidewater Atlantic Research

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Description:

Background: BOEM is required under Section 106 of the National Historic Preservation Act (NHPA) to consider the effects of its permitted actions on significant historic properties. BOEM requires that, prior to issuing leases or permits for bottom disturbing activities related to the extraction of sand, gravel, and other mineral resources from the Outer Continental Shelf (OCS), the applicant of the proposed action must identify potential submerged cultural resources within the Area of Potential Effect (APE).

Through its Marine Minerals Program BOEM has designated Significant OCS Sand Resource Extraction Zones, based on sediment thickness, in selected areas of the Gulf of Mexico (GOM). These zones, along with similarly designated zones in Louisiana state waters, may be leased and utilized as sand sources for coastal restoration and protection projects. In 2010 the State of Louisiana authorized sand dredging activities in areas of State waters to protect fragile wetlands from the impacts of the *Deepwater Horizon* oil spill. These sediments were deposited on State-owned submerged bottomlands in an effort to prevent oil from entering these sensitive areas. Dredging of the sand sources occurred in high-energy, shallow-water environments where shipwrecks have been reported in historical accounts. Pre-dredging remote-sensing surveys of the borrow and deposition areas identified multiple potential historic shipwreck locations; however, dredging-related impacts to these locations have not yet been determined.

Concurrently with the above actions, the State received an Emergency Sand Agreement (lease) from BOEM to use OCS sand. During the emergency response and, in an effort to comply with Section 106 of the NHPA, the borrow areas, sand conveyance pipeline corridors, and rehandling areas on the OCS were all subjected to high-resolution remote-sensing survey, again resulting in the identification of several potential historic shipwreck locations. Prior to any sediment extraction operations, however, access to OCS sand was ultimately denied when the Federal On-Scene Coordinator did not concur with proposed offshore dredging efforts.

This study aims to utilize both existing and newly acquired data sets in order to inform BOEM of the potential impacts to shipwreck sites in a given APE for sand and gravel extraction. Moreover, results will provide comparative data about the use of sand resources from relatively lower energy OCS environments and those located in more

dynamic shallow water environments that were historically prone to a high occurrence of ship groundings. Data recovered from shipwreck sites will be used to fulfill the Section 106 process by determining if each site is eligible for inclusion on the National Register of Historic Places as well as provide information to the general public about Louisiana's maritime heritage and archaeological resources.

Objectives: The primary objective of this study is to characterize and understand the potential impacts to shipwreck sites from sand extraction activities on the OCS. This information, in turn, will be used to inform BOEM decision making regarding its permitting of such activities, particularly in determining appropriate dredge set-back buffers around potential cultural resources. Additionally, data recovered from the sites will be used to fulfill the Section 106 process by determining if each site is eligible for inclusion on the National Register of Historic Places as well as providing information to the general public about Louisiana's maritime heritage and archaeological resources.

Methods: The objectives of the study will be achieved by locating and ground-truthing up to 10 potential shipwreck sites within sand extraction zones either currently being utilized or under consideration for future use. The study will attempt to identify and assess the size, distribution, and characteristics of any potential shipwreck remains. Extensive remote sensing of each site will be conducted using magnetometer, side-scan sonar, sub-bottom profiler, and sector scanning sonar devices. Cores and other geotechnical data sets will also be acquired to characterize localized sediment dynamics and environmental conditions that may influence dredge pit formation, evolution, and slope stability in the vicinity of cultural resources. Archaeological diver investigations of each site will be conducted and may include visual surveys, mapping, hand dredging, probing, and test trenching in order to determine the age, cultural affiliation, and nationality of each identified shipwreck. Limited artifact collection for identification purposes is also expected and all artifacts collected during the investigation are to undergo conservation and curation in conjunction with State of Louisiana protocols. Additionally, other analysis such as wood analysis will be conducted to provide further information about these sites. The study will provide an archaeological assessment of each site including site maps, site descriptions, impact analysis, and eligibility determinations to the National Register of Historic Places. Analysis of the archaeological data will be augmented by additional historic research of primary and secondary sources to provide as much information as possible for the sites located during the dredging of the borrow material.

Products: The study will result in a final technical report of findings that documents the results and analysis of the remote-sensing, diver investigation, sediment and oceanographic data collection, and archival research tasks. NRHP nomination forms will

be submitted concurrently with the final report for any archaeological sites that meet the criteria for Register listing. Finally, the contractor will produce public outreach materials detailing the project's history, impacts of these types of operations on historic resources, and discoveries made that showcase Louisiana's rich maritime heritage.

Importance to BOEM: In an effort to understand what impacts might occur to shipwrecks as a result of BOEM's sand leasing activities, this study will provide BOEM with information on the location, preservation, and extents of debris fields associated with potential shipwrecks within selected sand borrow areas. Information obtained from this study will assist BOEM with complying with its Section 106 responsibilities under the NHPA by providing data about archaeological sites encountered in Significant OCS Sand Resource Extraction Zones. This study will also help determine best management strategies that should be employed for sites including information about appropriate mitigation measures to protect such sites during future sand leasing activities. Geophysical and geotechnical data regarding the character and quality of sand resources will also be acquired and applied to better understand the morphologic evolution and sediment dynamics of dredge pits in the vicinity of existing cultural resources, as well as to assess the effectiveness of dredging setback buffers (within or proximal to a dredge pit). The results of this study will have broader-scale implications for BOEM's Marine Minerals Program and the impacts of OCS dredging for extracting valuable sand sources on submerged cultural resources.

Current Status: The contract has been awarded and the kickoff meeting is pending for November 2012.

Final Report Due: September 2016

Publications: None

Affiliated WWW Sites: None

Revised date: October 2012

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