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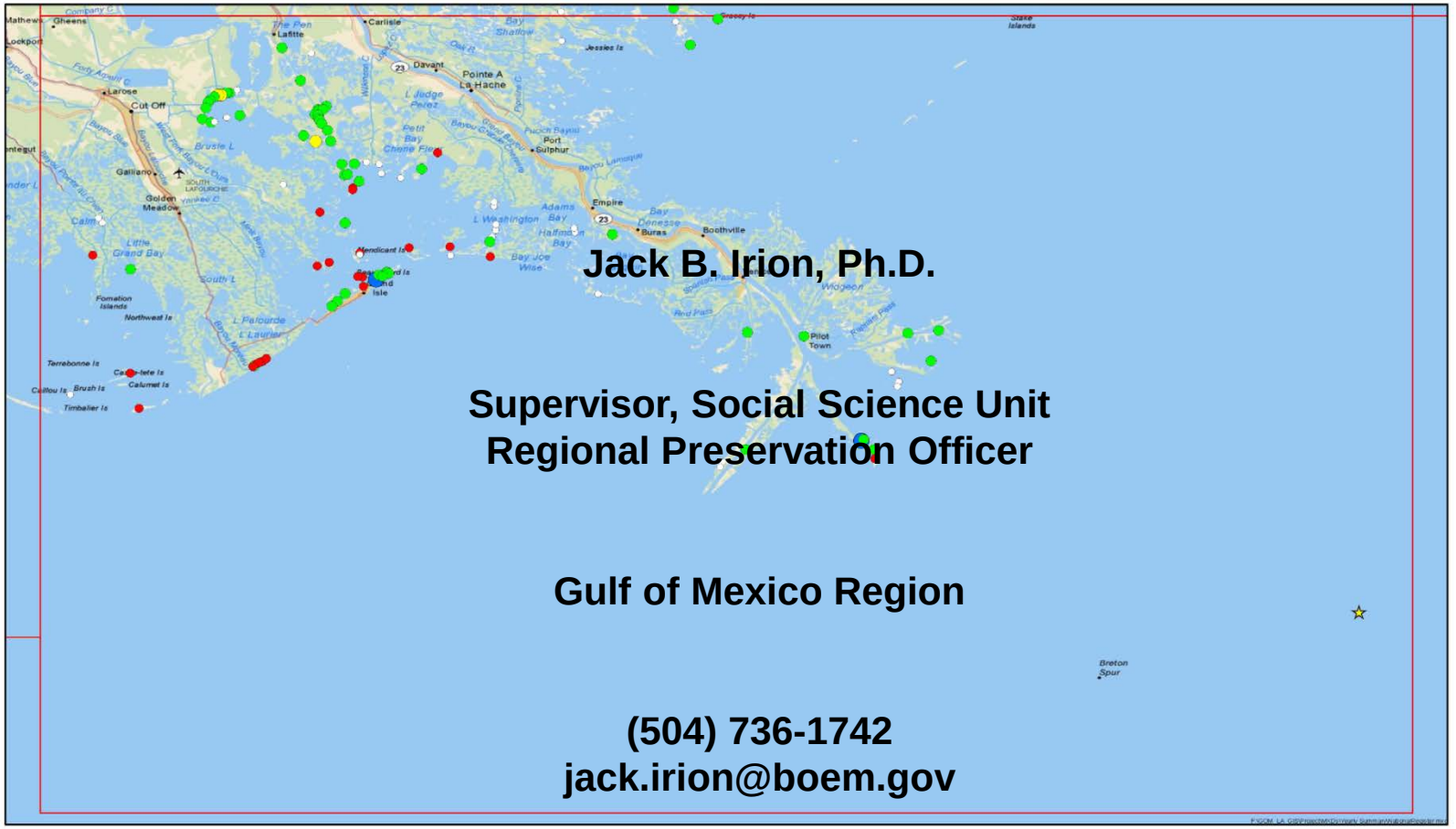
OSC Scientific Committee Meeting
May 2012



Testing and Assessment of the Effects of an Oil Spill on Coastal Archaeological Sites

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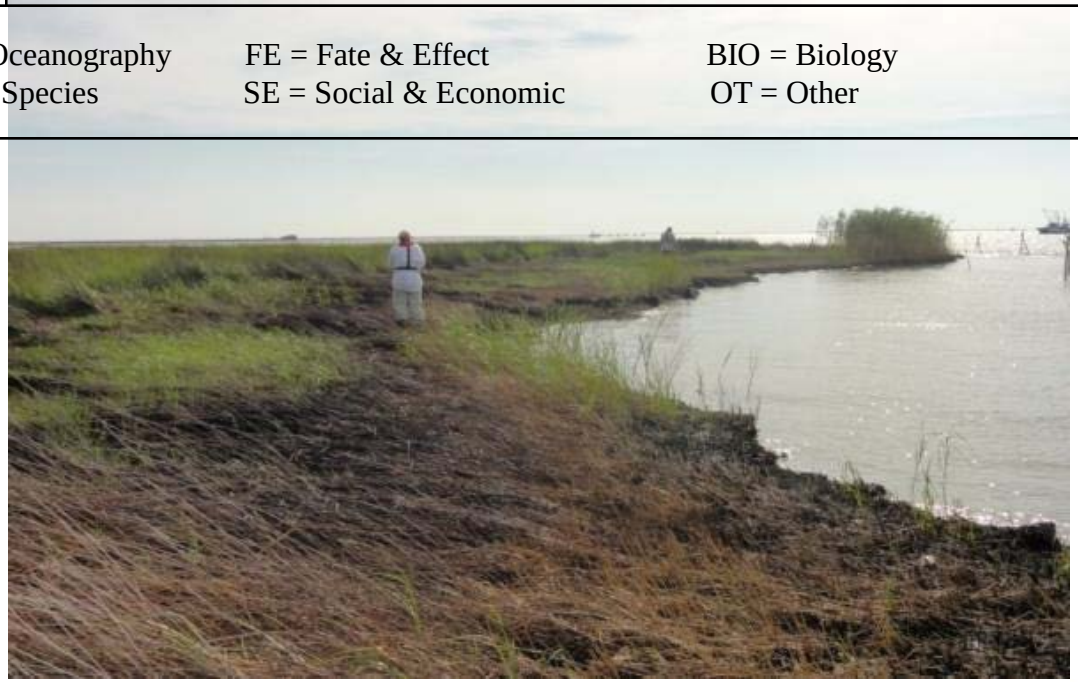
**PO = Physical Oceanography
PS = Protected Species
FE = Fate & Effect
SE = Social & Economic
BIO = Biology
OT = Other



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BOEM OCS GOMR Region

Testing and Assessment of the Effects of an Oil Spill on Coastal Archaeological Sites

BOEM Information Need:

GOMR EIS analyses on effects of an oil spill on coastal archaeological sites based on pure speculation and an imperfect understanding based upon incomplete research conducted in Alaska over 20 years ago.

Serious information gap exists in understanding the full implications of a reasonably foreseeable accidental event.

Information is of importance to the State of Louisiana.

16LF283

Date Information is Required:

Before it's too late!

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Tentative Ranking: 4

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Testing and Assessment of the Effects of an Oil Spill on Coastal Archaeological Sites

Background:

A) Relationship with Previous Work/Efforts

As a result of the cultural resources investigations conducted during the Macondo spill, Spill Clean-up Assessment Team (SCAT) archaeologists surveyed more than 5,000 kilometers of shoreline in the states of Louisiana, Mississippi, Alabama, and Florida (HDR, 2011). The investigations identified 32 previously recorded and 45 newly recorded sites that exhibited signs of oiling; 18 of the previously recorded and 31 of the newly recorded sites (61%) are located in Louisiana. Nearly all of the prehistoric sites effected by the Macondo spill are located in Louisiana; mostly in and around the Mississippi Delta and Barataria Bay in Iberia, Plaquemines, Jefferson, Lafourche, St. Bernard, and Terrebonne parishes.

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Background:

B) Relationship with Concurrent/Future Efforts

While site monitoring and remediation associated with the DWH spill response has documented the presence of oil at many sites, there has been no systematic attempt to assess the effects on archaeological resources, formation processes, or conservation. Restoration of coastal landscapes and ecosystems will further impact archaeological sites, making these finite cultural resources endangered features of an increasingly-altered environment. Previously, the only data on which to base assumptions regarding the effects of a major oil spill on archaeological resources was derived from the Exxon Valdez spill in Alaska in 1989.

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Study's Objectives:

To assess the effects of oil on prehistoric cultural resources on the southeastern Louisiana dating from the Late Woodland and Mississippi periods (ca. A.D. 700-1700). Sites to be investigated and assessed will be selected from those previously recorded as potentially eligible for listing on the National Register of Historic Places and impacted by the 2010 oil spill. These sites have produced evidence for Bayou Petre phase Mississippian ceramics, as well as local Coles Creek and Plaquemine material culture. Additional previously unknown sites documented by shoreline assessment teams will be considered for investigation.

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Study's Methods:

Means should be developed to assess impacts to prehistoric sites from oiling in terms of site preservation, effects to radio-carbon dating, and implications for research costs. Application of archaeometric techniques such as neutron activation analysis and absorbed residue analysis will examine the effects of oil and other contaminants in the archaeological record. In addition, analysis should be conducted to determine if the oil present at the sites can be fingerprinted to a source after the passage of time.

Field methods will consist of systematic surface collection, mechanized and hand-operated coring and augering, and excavation of 1-by-1-meter test units in up to five (5) previously recorded sites to record stratigraphic profiles and obtain well-provenienced archaeological samples.

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Addition *Pertinent* Information

The study is proposed as a cooperative agreement with the University of Louisiana at Lafayette (ULL), a member institution of the Gulf Coast Cooperative Ecosystem Studies Unit (GC-CESU). ULL, located in southern Louisiana, provides the necessary regional archaeological expertise to accomplish the goals of the project.

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