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Bureau of Ocean Energy Management

GOMR Marine Archaeology Profiles – FY 2013

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

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

BOEM Information Need:

- Impacts to coastal archaeological sites unknown 2 years after the Macondo spill.
- EISs make numerous assumptions about effects based on incomplete research from *Exxon Valdez* spill 20 years ago.

Date Information is Required:

As soon as possible to incorporate in environmental documents.

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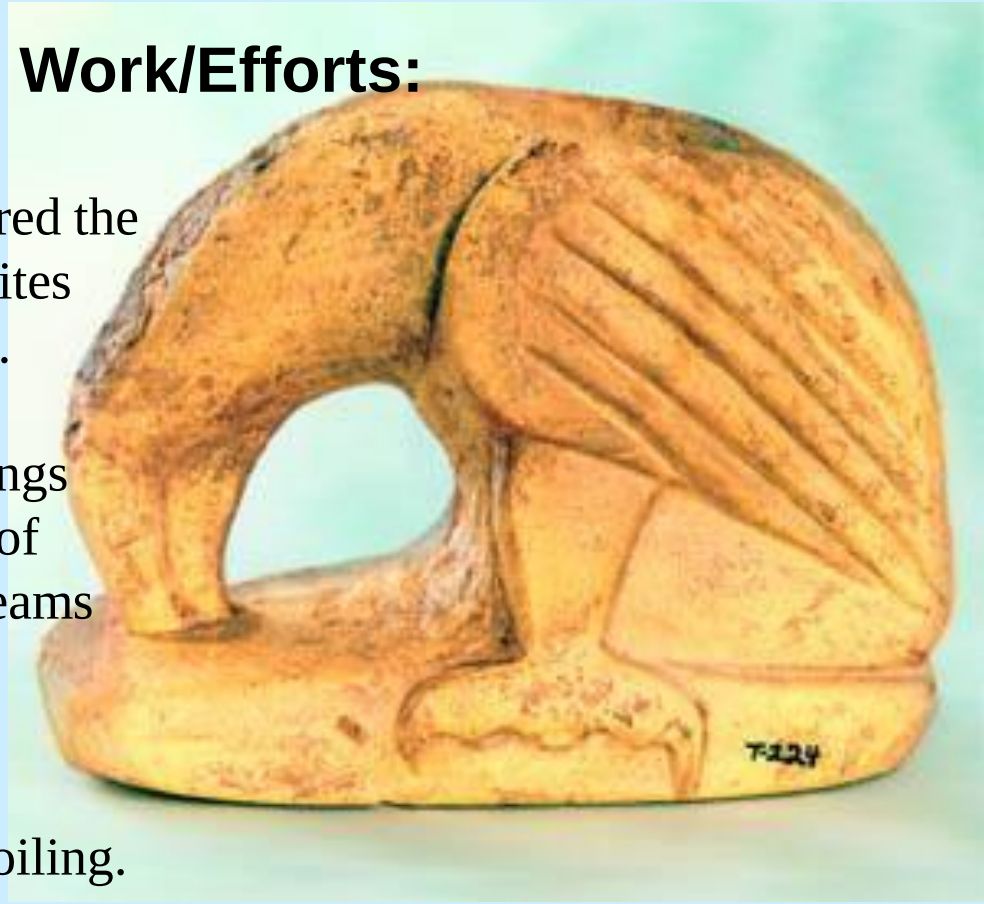
Testing and Assessment of the Effects of an Oil Spill on Coastal Archaeological Sites

Background:

A) Relationship with Previous Work/Efforts:

- BOEM (MMS) had previously considered the effects of its program on coastal sites with respect to OCS vessel traffic.
- The current effort builds upon the findings that resulted from over 5,000 km of survey by archaeological SCAT teams in LA, MA, AL, and FL.
- 32 previously recorded and 45 newly discovered sites showed signs of oiling.



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

Background:

B) Relationship with Concurrent/Future Efforts:

- Builds upon the findings of SCAT team archaeologists to select sites for further testing
- Parallels other proposed efforts to assess the long term effects on Underwater Cultural Heritage
- Expected to develop a true picture of the effects of a catastrophic spill on archaeological resources.

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

Study's Objectives:

- to assess the effects of oil on prehistoric cultural resources such as:
  - skewing of radio-carbon dates
  - increased research costs
- to obtain information on long-term human-environmental and cultural relationships in the coastal zone during the Late Woodland and Mississippi periods (ca. A.D.700-1700).

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Study's Methods:

- Assess impacts to prehistoric sites from oiling: site preservation, effects to radiocarbon dating, implications for research costs
- Archaeometric techniques such as Neutron activation analysis and absorbed reside analysis (effects of oil)
- NAA and mass spectrometry to complement ceramic and lithic analyses
- Field methods: surface collection, coring/augering, test excavations

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

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, which is not an analogous environment to the Gulf Coast. However, one of the recommendations to come from that experience is that it is critical to begin damage assessment studies within the first year after the event. We are already past that point.

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