Environmental Studies Program: Ongoing Study

Title	Archaeological Investigations in Support of Development of Energy and Mineral Resources on the U.S. Outer Continental Shelf (NT-19-07)
Administered by	BOEM Office of Renewable Energy Programs
Procurement Type(s)	Contract
BOEM Contact(s)	Christopher Horrell (christopher.horrell@boem.gov)
Conducting Organization(s)	BOEM OREP, Cardinal Point Captains, Inc.
Total BOEM Cost	$1,500,000
Performance Period	FY 2019-2023
Final Report Due	September, 2024
Date Revised	August 26, 2021
PICOC Summary	
Problem	BOEM requires developers to avoid all geophysical targets (scan sonar contacts and magnetic anomalies) that may potentially represent an archaeological resource. In fact, previously identified geophysical targets may prove to be significant archaeological resources that should be avoided, or they may prove not to be significant archaeological resources and therefore they should not prevent development.
Intervention	Additional ground truthing investigations of previously identified geophysical targets that may potentially represent archaeological resources allow BOEM to determine whether they are archaeological in nature, and, if so, whether they are nationally significant and eligible for listing on the NRHP. These investigations also allow BOEM to collect baseline data either in areas either not previously subjected to geophysical survey but for which future development is contemplated or for which pre-construction baseline data would be useful for future, post-construction monitoring of archaeological resources.
Comparison	For each prioritized target selected for ground truthing, BOEM will ask, (1) does this target represent an archaeological site or not? And (2) if this target *does* represent an archaeological site, is it national significant and eligible for listing on the National Register of Historic Places? If a site is not present, or if a site is present but not eligible, then the avoidance will be cleared for development. If a site is present and eligible, BOEM will document the site as a significant archaeological resource on the OCS and may use the collected information as baseline data to support future monitoring activities.
Outcome	To effectively minimize impacts to archaeological sites without unnecessarily constraining development, BOEM needs additional information on previously identified geophysical targets that may potentially represent archaeological sites eligible for listing on the NRHP. By confirming the presence of these sensitive resources or confidently clearing the area for development, BOEM is using the best available science in bureau decision making.
Context	The study is designed to support all BOEM programs and regions over the course of the five-year time period. Annual research designs are prepared collaboratively

	and focus on geographic areas which BOEM anticipates represent the bureau's highest priorities for both energy and marine minerals development activities and for archaeological resource protection needs for the upcoming year. Scientific activities supporting other disciplines (e.g., biological, water quality) that are complementary to the field operations are also being conducted in concert with the archaeological investigations.

BOEM Information Need(s): To effectively minimize impacts to archaeological sites without unnecessarily constraining development, BOEM needs to gather additional information on previously identified geophysical targets that may potentially represent archaeological sites eligible for listing on the NRHP. By confirming the presence of these sensitive resources or confidently clearing the area for development, BOEM is using the best available science in bureau decision making.

BOEM requires developers to avoid all geophysical targets (scan sonar contacts and magnetic anomalies) that may potentially represent an archaeological resource. In actuality, previously identified geophysical targets may prove to be significant archaeological resources that should be avoided, or they may prove not to be significant archaeological resources and therefore they should not prevent development. Archaeological ground-truthing of potential targets and determinations of significance and eligibility for listing on the National Register of Historic Places (NHRP) is necessary for BOEM to make informed, responsible decisions and for compliance with the National Historic Preservation Act.

Background: BOEM's overarching strategic goal is to achieve expeditious and orderly development of energy and mineral resources, while minimizing impacts on the environment, including impacts to archaeological sites. BOEM is contemplating issuing leases and grants and approving various plans and permits related to conventional and renewable energy and marine minerals sources in each of its regions and programs. BOEM needs data in these areas in order to make sound decisions about how to effectively minimize impacts to archaeological sites without unnecessarily constraining development, and to meet its responsibilities under Sections 110(a)(2)(A), (B), (C), and (E) and 110(b) of the National Historic Preservation Act (NHPA).

Objectives: The primary objective is to conduct additional investigations of previously identified geophysical targets that may potentially represent archaeological resources. These additional investigations will consist of ground-truthing geophysical targets to determine whether they are archaeological in nature, and, if so, determining their significance and eligibility for listing on the NRHP. This objective will recover data that would (1) confirm which geophysical targets are archaeological sites and (2) produce the site documentation and the recording of diagnostic features and artifacts necessary for completing the process of nomination to the NRHP. A secondary objective is to collect baseline data either in areas either not previously subjected to geophysical survey but for which future development is contemplated or for which pre-construction baseline data would be useful for future monitoring of resources.

Methods: Field operations will involve collecting additional high resolution geophysical data, to relocate each target and ascertain its suitability for diving or Remotely Operated Vehicle (ROV) investigations and executing diver or ROV investigations with photography and videography to accurately document the resource. Specifically, methods will include: (1) conducting high resolution side scan sonar and high density magnetometer surveys of each identified priority target; (2) determining whether or not the priority target warrants further investigation; (3) completing a rapid assessment exterior survey, via divers or Remotely Operated Vehicles (ROV), of those targets warranting further investigation; (4)

completing detailed video and photographic surveys of those targets warranting further investigation; (5) as conditions allow, producing a cursory site map (or photomosaic) of each confirmed archaeological site for interpretation; (6) assessing the historical significance and archaeological integrity of each confirmed archaeological site; (7) determining eligibility of each confirmed archaeological site for nomination to the NRHP; and (8) identifying to what degree site preservation is influenced by environmental and anthropogenic formation processes. Annual research designs are prepared collaboratively and focus on geographic areas which BOEM anticipates represent the bureau's highest priorities for both energy and marine minerals development activities and for archaeological resource protection needs for the upcoming year. Scientific activities supporting other disciplines (e.g., biological, water quality) that are complementary to the field operations are also being conducted in concert with the archaeological investigations.

Specific Research Question(s): Research questions are organized hierarchically. For each prioritized target selected for ground truthing, BOEM will ask:

1. Does this target represent an archaeological site or not?
2. And if this target *does* represent an archaeological site, is it national significant and eligible for listing on the National Register of Historic Places?

If a site is not present, or if a site is present but not eligible, then the avoidance will be cleared for development. If a site is present and eligible, BOEM will document the site as a significant archaeological resource on the OCS and may use the collected information as baseline data to support future monitoring activities.

Current Status: Having been unable to execute field investigations during 2020 due to COVID-10, the study participants have now conducted four separate mobilizations equating to two years' worth of fieldwork between June and August 2021.

- In June 2021, fieldwork was conducted in the Gulf of Mexico in support of oil and gas and marine minerals activities. This included collecting high resolution side scan sonar and gradiometric survey data to support another BOEM study that paired hard-bottom benthic habitat with shipwrecks as habitat as well as a large avoidance anomaly in the Ship Shoal sand resource area.
- In July 2021, fieldwork was conducted offshore Delaware, Massachusetts, and Rhode Island in support of Atlantic Renewable Energy activities. This included collecting high resolution side scan sonar and gradiometric survey data and sector scanning sonar data along with scientific diver investigations of twelve targets identified for avoidance in the Massachusetts and Rhode Island lease areas, as well as the *USS Cherokee*, a US Navy vessel that had been lost in 1918 offshore Delaware. The *Cherokee* investigation was conducted in support of BSEE.
- In August 2021, fieldwork was conducted offshore the Gulf of Mexico in support of marine minerals activities. This included scientific diver investigations of the large avoidance anomaly in the Ship Shoal sand resource area.
- Finally, in August 2021, fieldwork was conducted offshore Northern California in support of Pacific Renewable Energy activities. This included collecting high resolution side scan sonar and gradiometric survey data, as well as sub-bottom profiler data to support a paleolandscape reconstruction, a reconnaissance-level resolution benthic habitat study, and a geological interpretation of the likely cable crossing area for the Humboldt Wind Energy Area.

Next steps include processing data and preparing technical study reports, as well as developing the FY22 annual research design.

Publications Completed: None

Affiliated WWW Sites: None

References: N/A