High Resolution Geophysical Survey of Offshore Sediment Resources—Wrightsville Beach, NC

geodynamics
AN NV5 COMPANY

Project Highlights

- Concurrent acquisition of multibeam, sidescan, sub-bottom profiler, and gradiometer data
- Support USACE planners in Essential Fish Habitat (EFH) and submerged cultural resources consultation (Section 106 NHPA)
- Partnership with marine archaeologists to identify known and previously unidentified features for investigation and/or avoidance

Project Location

Wilmington, NC

Client

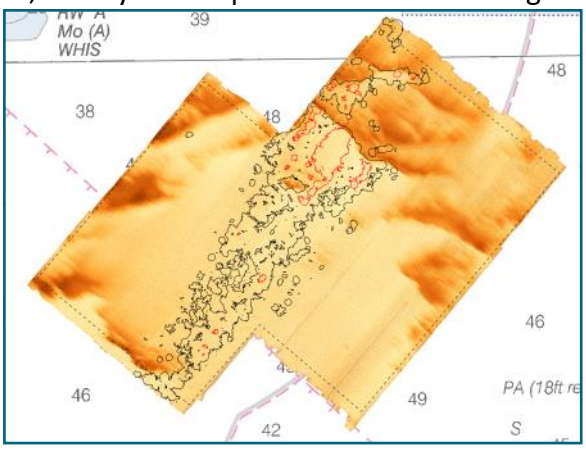
USACE Wilmington District

Project Description

Geodynamics is a prime contractor to the USACE Wilmington District to provide surveying and mapping services. For Task Order F0008(W912PM-21-D-0001), Geodynamics performed a high-resolution geophysical (HRG) survey of the seafloor surface and sub-bottom to assess bathymetry and the presence or absence of both hard bottom and cultural resources within a potential offshore sand borrow area. Using multibeam sonar, sub-bottom profiler, transverse gradiometer (TVG), and sidescan sonar collected concurrently on board the 30' vessel RV Benthos, the survey area was 4.4mi^2 in size.

The field survey was designed to collect sufficient information on features to evaluate their potential historical significance and/or the need for future investigation or avoidance measures. Geodynamics worked closely with marine archaeologists at Tidewater Atlantic Research (Dr. Gordon Watts) and the NCOSA's Underwater Archaeology Branch to provided detailed data and analysis with complete methodology and calibration information for archaeological review and interpretation.

Data from this survey will support refinement of the Coastal Storm Risk Management Project's beach fill design, support identification of essential fish habitat, and fulfill consultation under Section 106 of the NHPA regarding submerged cultural resources. Sub-bottom profile data were matched to existing vibracore data for verification of stratigraphy, with analysis and GIS deliverables. At no additional cost, Geodynamics provided extensive targeting and hazard density mapping for over 6,000 tires identified at or near the seafloor surface which will impede future sediment extraction in the area.



High density hazard polygons overlaid on sidescan sonar of the survey area; the R/V Benthos.