Ft. Fisher Seawater Intake Hydrographic & Sub-bottom Survey

geodynamics
AN NV5 COMPANY

Project Highlights

- Survey design and scope developed by Geodynamics based on the parameters required to support the sighting of a proposed saltwater intake for the N.C. Aquarium.
- MBES, SSS, SBP, and MAG used to assess sand resources required for the intake and their relation to any hard bottoms and cultural resources in the area.
- Devised a 6-level criteria scale for the client and integrated the scale into survey products and deliverables.

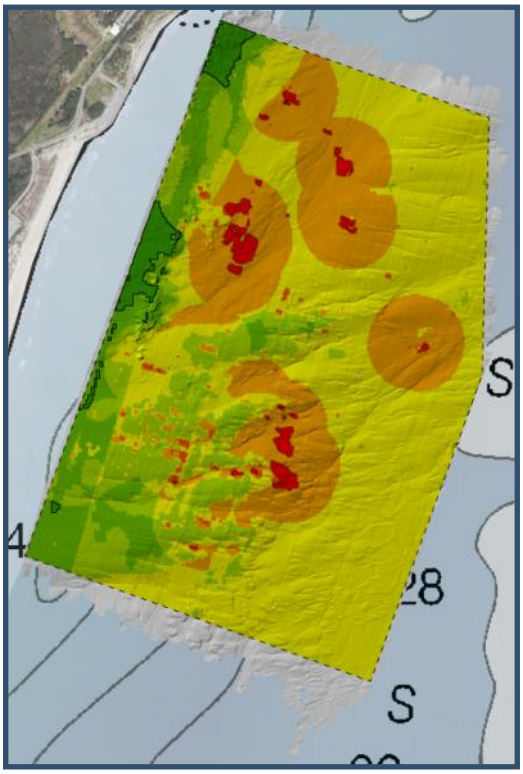
Project Location

Ft. Fisher, N.C.

Client

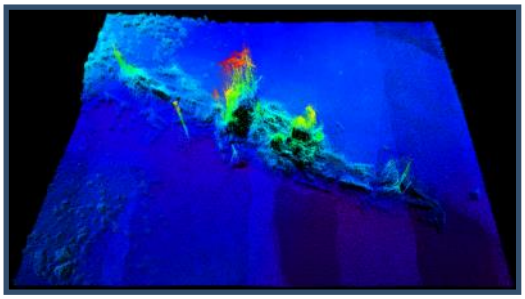
Szostak Design Inc.

Project Description



Contoured site suitability analysis map using Geodynamics' custom criteria metrics.

Geodynamics was retained by Szostak Design to conduct a High Resolution Geophysical (HRG) survey to support the sighting of a saltwater intake pipe for the N.C. Aquarium at Ft. Fisher. The survey was developed to identify zones of sand where the intake pipe could be positioned and to quantify what cultural and hardbottom resources may be present. Geodynamics designed the entire HRG study including the survey bounds, sensor requirements, line spacing, etc., and employed a multibeam echosounder (MBES) and sidescan sonar (SSS) to ascertain the geometry of the seafloor, identify shoals, hard-bottoms, and other features. The MBES bathymetry data served as a reference elevation plane for the sub-bottom profiling (SBP) portion of the survey that constrained the architecture of the sub-bottom and zones where sand may be present. A marine magnetometer was also incorporated into the survey plan to identify any cultural resources in accordance with NC State Historic Preservation Office requirements. HRG survey activities were conducted aboard Duke University's *R/V Shearwater* and Geodynamics' *R/V 4-Points.* Geodynamics devised a 6-level criteria scale for the project that was used to develop custom survey products, providing for a robust assessment of sand resources, hard bottoms, and cultural resources in the area for future geotechnical and engineering assessments.



Shipwreck of the Civil War blockade Runner, the *Condor*—MBES data processed in Caris.