EMERALD ISLE POINT MONITORING BOGUE INLET, NORTH CAROLINA: 2012 - Present



Project Highlights

- Semiannual topo-bathymetric surveys since 2012 to present.
- Merged DEM delivery products used to provide geomorphic change analysis of the inlet complex.
- Spatially-consistent, "virtual transects" developed to provide meaningful statistics for inlet management and protection of infrastructure.

Project Location

Bogue Inlet & Emerald Isle, NC

Client

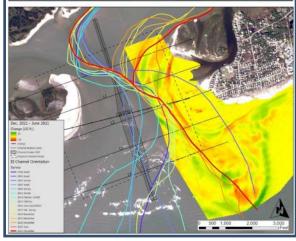
Carteret County and Town of Emerald Isle

Project Description

Beginning in Spring 2012, Geodynamics was retained to perform semiannual surveying (2/year) at Bogue Inlet and the adjacent area of the Point in Emerald Isle, N.C. The main channel of Bogue Inlet was threatening property and infrastructure until the channel was dredged in 2005 to a position equidistant within the inlet floodway between Emerald Isle, and Bear Island to the west. The purpose of the survey program is to monitor the movement of the inlet channel thalweg and the response of adjacent shorelines to assess the overall effectiveness of the channel relocation project and for design considerations if/when the thalweg needs to repositioned again. Geodynamics developed a series of customized metrics to help

evaluate the inlet including "virtual | transects" used to consistently measure the inlet's position relative and existing property to infrastructure, datum-derived MHW shorelines extracted from the merged topo-bathy digital elevation model (DEM), and assessments of volume change at the inlet and the adjacent beach/shoreface. increase the accuracy and quality of the final deliverables, the survey plan is specifically designed to mimic predicted contours remove anisotropic factors that could potentially introduce errors into the final DEM. Singlebeam data is collected with an Odom CV100 digital echosounder coupled with a POS MV Wave Master for accurate and motion positioning compensated real-time tidal elevations. Topographic data is collected using a RIEGL VMZ-400i laser scanner system producing a 5 a 20 ft final grid.





Top: DEM of topo-bathymetric data acquired at the Emerald Isle "Point" and Bogue Inlet.

ft XYZ dataset that is remodeled into a 20 ft final grid.

Bottom: Overlay of previous inlet positions, "virtual transects", and a shaded volume change map specifically developed by Geodynamics for the client's inlet management goals.







