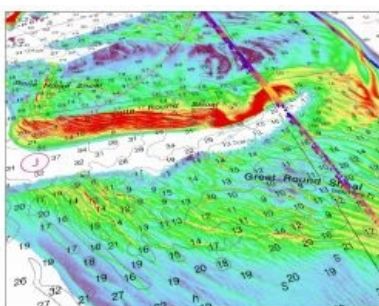
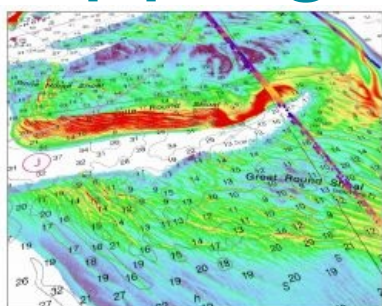


TCarta Delivers Satellite-derived Bathymetry for U.S. Coastal Mapping Pilot



TCarta Marine, a global provider of marine geospatial products, has supplied the National Oceanic and Atmospheric Administration (NOAA) with satellite-derived bathymetry (SDB) validated by green laser altimeter data from the NASA ICESat-2 satellite for two U.S. shallow-water coastal areas.

TCarta was the subcontractor on the prime contract awarded to Woolpert, an

international geospatial firm headquartered in Dayton, Ohio.

The NOAA pilot focused on two shallow-water regions that were 3,000 square kilometres in total area – one in the Green Bay area of western Lake Michigan and the other around Cape Cod and Nantucket Sound. Both areas experience natural forces that alter the underwater terrain faster than traditional bathymetric surveys can be completed.

SDB is being considered as a fast and inexpensive alternative for such coastal zones. A primary advantage of SDB is that orbiting satellites can be tasked to collect up-to-date imagery, with bathymetric measurements derived to create end products in a matter of days.

Airborne Lidar and Marine Sonar

TCarta created products in the two project pilot areas to enable NOAA to test the use of SDB in shallow coastal zones. This provided updated bathymetry and infilled data gaps from traditional bathymetric measurement technologies, such as airborne Lidar or marine sonar. The pilot was conducted jointly by NOAA's Office of Coast Survey and National Geodetic Survey's Remote Sensing Division. The SDB datasets measured the seafloor to a depth of 20–25 metres, with validation using ICESat-2.

"The integration of ICESat-2 bathymetry with satellite imagery-derived bathymetry is a powerful combination to increase accuracy," said RDML Shepard Smith, the recently retired director of NOAA's Office of Coast Survey. "It holds the potential to dramatically improve our ability to monitor change in dynamic coastal waters and allow us to map remote areas for the first time."

"The enhanced SDB product validated with ICESat-2 data created for this pilot results directly from our research under the National Science Foundation SBIR programme," said TCarta president Kyle Goodrich.

In late 2019, TCarta received a Phase 2 Small Business Innovation Research (SBIR) grant to commercialize next-generation SDB measurement technologies. ICESat-2 (Ice, Cloud & land Elevation Satellite) space-based laser data was included in the research following the satellite's launch in 2018.



2m SDB in Nantucket Sound, MA, produced using WorldView satellite imagery with ICESat-2 tracks overlaid.