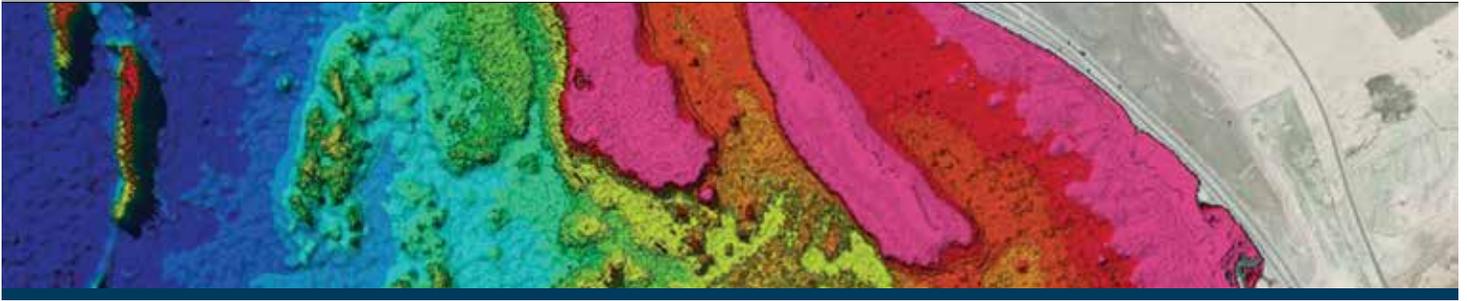


Product solution for: Proteus



Record ten-day turnaround in Red Sea bathymetric study

The Red Sea is a rich and diverse ecosystem, home to hundreds of unique species of fish and wildlife, and known for its many offshore coral reefs and atolls. The challenges of preserving the fragile ecosystem are many, including increasing amounts of desalinated water due to growing populations on the sea's coastline and the expansion of oil and power infrastructure.

No time for traditional methods

Sogreah, a French engineering and consulting firm, was tasked with the construction of a new power plant along the Red Sea's coastline near Jeddah, Saudi Arabia. The project required 200 square kilometers of bathymetric mapping to be completed within a limited time frame. To get the job done, Sogreah turned to Proteus' Abu Dhabi office for its uniquely fast and cost-effective solution that is driven by DigitalGlobe high-resolution satellite imagery. "The timetable for completing our environmental modeling studies was extremely tight," said Jorge Trindade, Sogreah general manager for the Middle East, "and we couldn't wait for a bathymetric survey conducted through traditional means."

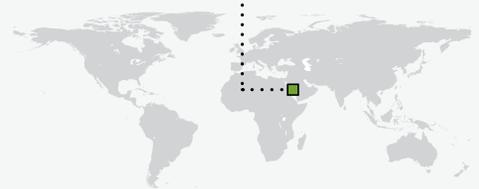
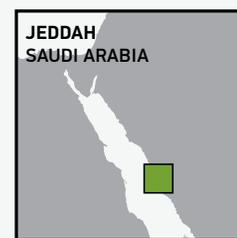
A new approach to bathymetric mapping

Bathymetry, the measurement of depth at various places in a body of water, is typically a lengthy, delicate and expensive process. It deploys airborne LiDAR and/or labour-intensive marine acoustic sonar with vessels to slowly survey the sea floor. These studies can have an adverse impact on the environment, incur high mobilization costs for equipment, and require government permits, which can add months to the timeline of a project.

"If this project had been undertaken using boat-based survey equipment, it would have taken at least six to eight months due to government permit requirements and shallow-water navigation obstacles," says David Critchley, Proteus CEO. "Using DigitalGlobe high-resolution satellite imagery and the technical expertise of our mapping and modeling partner, EOMAP, we were able to complete the project in just ten days."

Company information

Proteus offers full turnkey mapping solutions produced from DigitalGlobe Worldview-2, 8-band satellite imagery. Working closely with DigitalGlobe, EOMAP and a network of partners, Proteus provides customers with cutting-edge products for environmental, agricultural, forestry and marine use.



www.proteusgeo.com

Red Sea study posed unique challenges

The area of the Red Sea designated for the bathymetric study had never been extensively mapped and presented a broad set of obstacles related to permits. Additionally, the area was largely shallow, ecologically sensitive, and posed environmental challenges to the sonar data-gathering equipment. For six months prior to assigning Proteus the task, Sogreah had little success in procuring the resources to launch this project.

Utilizing DigitalGlobe Worldview-2 high-resolution, 8-band satellite imagery, Proteus/EOMAP was able to deliver the project in ten days, accurately extracting seafloor elevation measurements to depths of 20 meters with a four-meter point density and at distances up to five kilometers off the Saudi Arabian coast.

“We clearly exceeded the customer’s expectations both in quality and delivery time,” Critchley says. “For Proteus, EOMAP and DigitalGlobe, the Red Sea project is another great example of how we are revolutionizing bathymetric studies.”

The satellite-derived bathymetry discovered many new reefs and features not identified in existing nautical charts. The identification of these reefs and features allowed for a more accurate baseline survey of the area, thus reducing the time and costs needed to create the baseline habitat map. The new seafloor maps allowed marine biologists to understand where dive operations should take place in order to best analyze and determine localized habitat and ecological information.

“DigitalGlobe satellite imagery allows us to derive bathymetric surveys at a fraction of the time and cost of traditional hydrographic mapping methods and in geographic locations where ecological constraints, submerged reefs, or political issues could hamper a project’s progress.”

DAVID CRITCHLEY, CEO PROTEUS

Challenge

Complete a 200-square kilometer bathymetric mapping study of the Red Sea off the Saudi Arabian coast under extreme time constraints and difficult environmental conditions.

Solution

Proteus’ unique solution and EOMAPs’ bathymetric mapping methodology using DigitalGlobe high-resolution satellite imagery delivered complex surveys at a fraction of the traditional time and cost.

Results

The project was completed in ten days, ending months of delay caused by permit requirements and navigation obstacles presented by traditional bathymetric survey methods.

INDUSTRY

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- » Hydrological
- » Mapping

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- » Mapping
- » Change detection
- » Modeling
- » Seabed classification
- » Reef recovery modeling
- » Coastal zone monitoring
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