

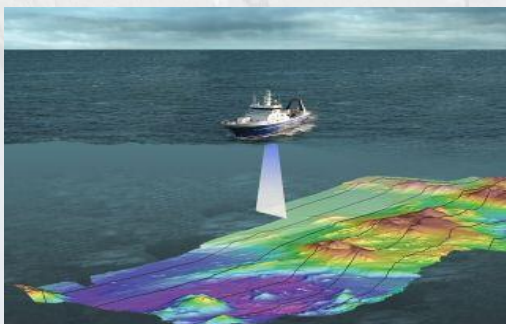


Hydrographic Survey Services

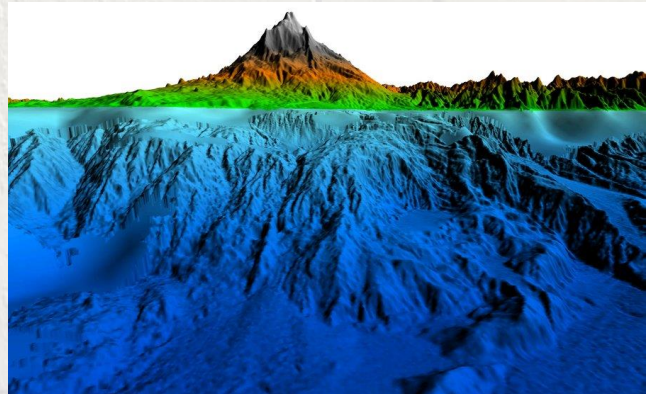
In addition to its 2D and 3D high resolution marine seismic services, GeoSurvey Systems also provides its clients with a variety of advanced hydrographic survey, data processing, interpretation, and general consulting services, specializing in the applications to open ocean marine geohazards investigations, river and lake water bottom characterization, coastal and intra-coastal delineation of submarine sediments. GeoSurvey Systems hydrographic surveys emphasize applications for offshore oil and gas exploration, marine geotechnical and civil engineering projects, offshore mining studies, near shore environmental, and other marine geologic mapping studies. Hydrographic survey services include:

- **Multibeam Bathymetry Surveys**
- **Side Scan Sonar Surveys**
- **High-Resolution Sub-bottom Profiling**
- **Marine Magnetometer Surveying**
- **Marine EM Surveying**
- **Marine 2D and 3D Resistivity Sub-bottom Profiling**

GeoSurvey Systems uses a variety of marine acoustic/seismic mapping and sub-bottom profiling systems, side scan sonar, marine magnetometer and bathymetry survey systems. Survey methods are selected on the basis of target and submarine mapping objectives, water depth, resolution requirements, project applications, and environmental conditions.



Expertise includes pre-survey planning and geophysical modeling, field support for data acquisition and operations, 2D and 3D data processing, interpretation, and image mapping.



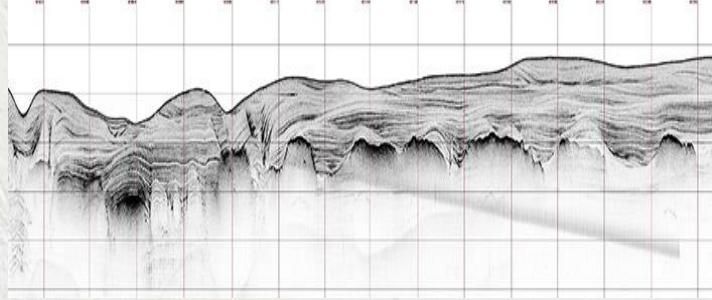
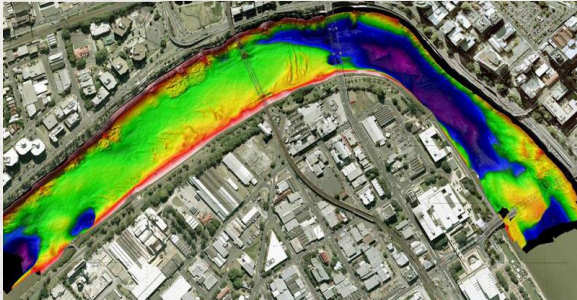
Survey Applications

- **Seafloor Morphology Mapping Surveys**
- **Rivers & Lakes 2D/3D Water Bottom Mapping and Depth Profiling**
- **Marine Archaeological Studies**
- **Pipeline and Cable Route Planning Surveys for Dredging and Sub-Marine Trenching.**
- **Seafloor Geohazards Surveys**
- **Marine Engineering and Geotechnical Studies**
- **Sediment Classification Studies**
- **Marine UXO Surveys**



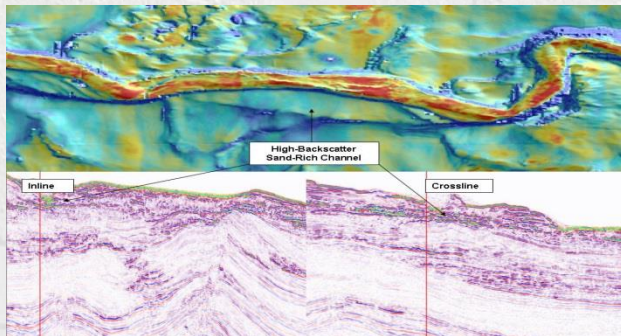
Lakes and River Hydrographic Surveys

Hydrographic surveys on lakes and rivers will often combine wide angle 2D/3D bathymetry to delineate water bottom morphology, and high resolution acoustic sub-bottom profiling for submarine sediment mapping and classification.

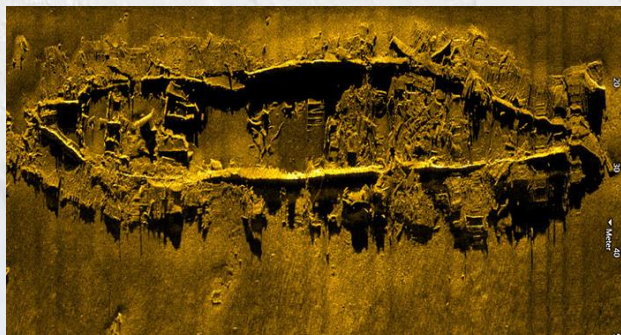


Marine Geohazard Investigations

Ultra-High Resolution (UHR) 2D and 3D marine seismic and bathymetry surveys services are provided for mapping potential seafloor and geologic hazards that can affect planning and installation of offshore rigs, offshore windfarm towers, offshore LNG plants, pipelines, and other marine infrastructure.



In addition to bathymetry and UHR seismic, marine geohazard surveys may also include marine magnetometer surveys to identify and locate metallic debris that may require removal or avoidance planning. The combination of bathymetry and UHR 2D and 3D seismic data are also used by GSS for delineation of geologic hazards, such as leaking gas chimneys and associated seafloor vent structures, and near surface over-pressured gas traps.



As part of its marine geohazard survey services, GeoSurvey Systems uses advanced high resolution side scan sonar imaging over areas where the presence of large ship wreck hazards are suspected.

For marine archaeological projects the side scan survey is also used, which can be integrated with bathymetry and marine magnetometer surveys.