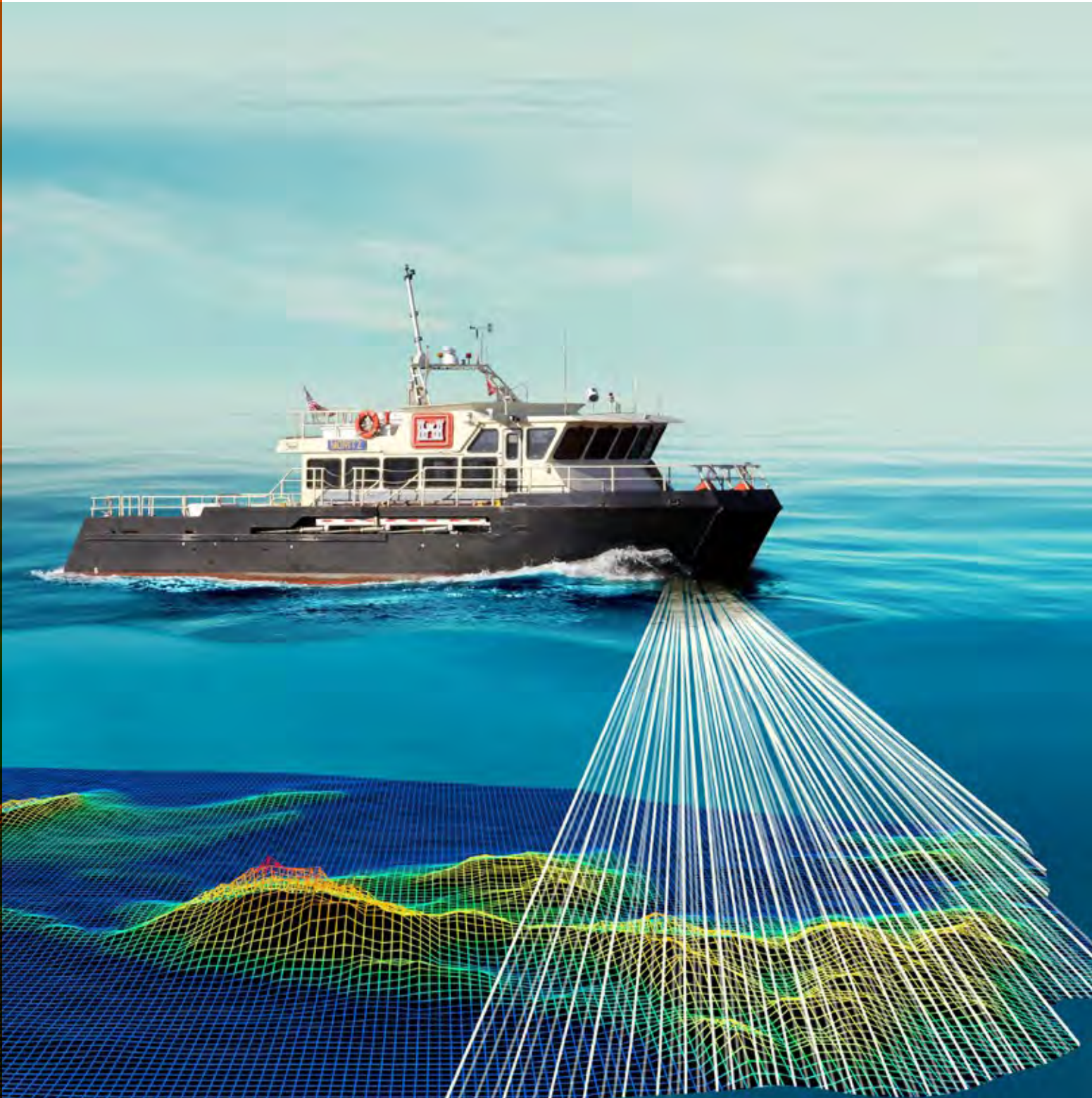


HYDROGRAPHIC SURVEY SERVICES



audubon

FIELD SOLUTIONS



ACCELERATED, DATA-RICH INSIGHT FOR SUSTAINABLE PROJECT SUCCESS

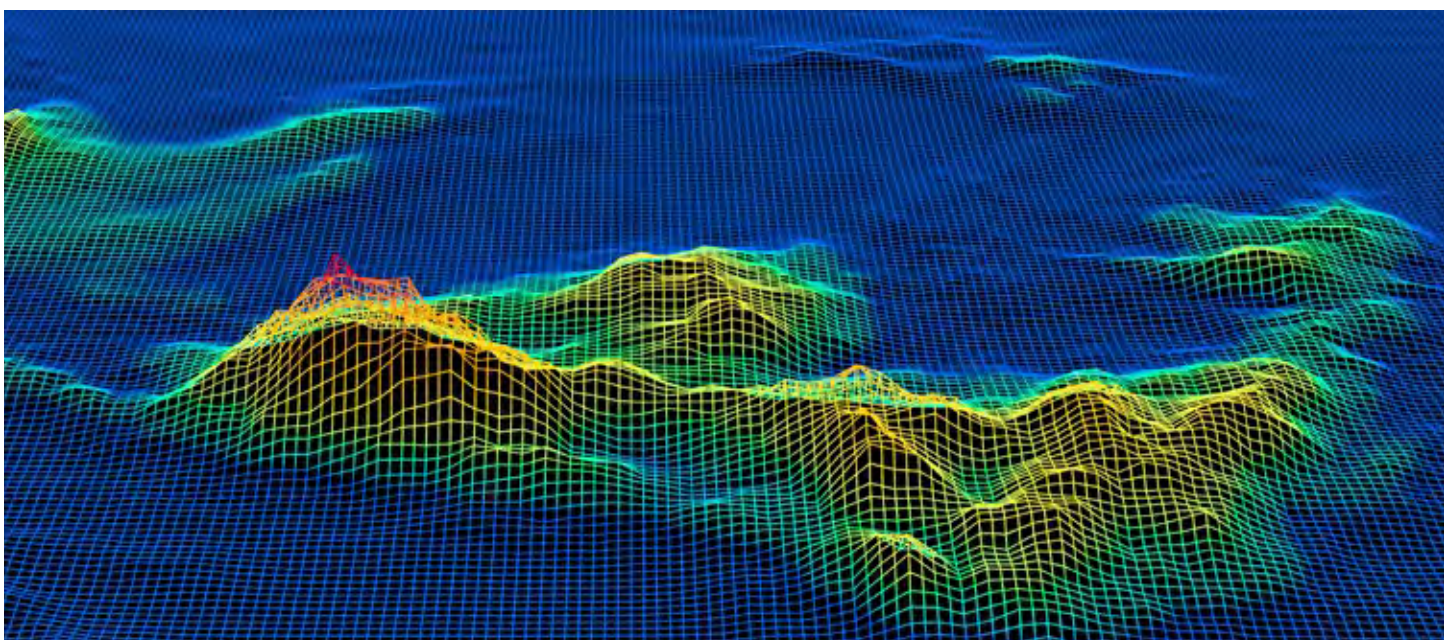
Connecting people with goods and services across continents requires a network of robust, secure infrastructure with ready access to the world’s vast bodies of water—on the shore of a river, at a port near a sea, and even in the middle of an ocean, thousands of feet from land.

Planning, building, and maintaining infrastructure in and around water requires careful consideration of a range of issues, from seabed topography and water depth to environmental statutes and governmental regulations.

Audubon Field Solutions LLC specializes in planning and implementing multidisciplinary surveys for a range of industries and clients working in inland, estuarine, coastal, and offshore environments.

Collaborating with you at every stage, our expert practitioners use cutting-edge hydrographic technologies to provide reliable data and actionable insight, so you can achieve sustainable, safe, productive performance over the life of your asset.

APPROACH	TECHNOLOGY	DATA
Comprehensive, multidisciplinary approach that drives efficiency at every stage	Cutting-edge geophysical technologies and software	Accurate, precise measurements for best-informed decision making
EXPERTISE	SAFETY	INSIGHT
Global footprint of qualified hydrographic surveyors for fast deployment, wherever you operate	24/7/365 commitment to the industry’s most rigorous QHSE protocols	Expert insight and recommendations to mitigate risks and improve return on investment



BROAD PORTFOLIO OF HYDROGRAPHIC SERVICES

Hydrographic survey services, technologies, and data insights to meet your long-term goals under one roof. Each survey we undertake utilizes state-of-the-art technology, such as

- High-precision single- and multibeam echosounders
- Modern computing systems
- Specialized navigation-hydrographic software

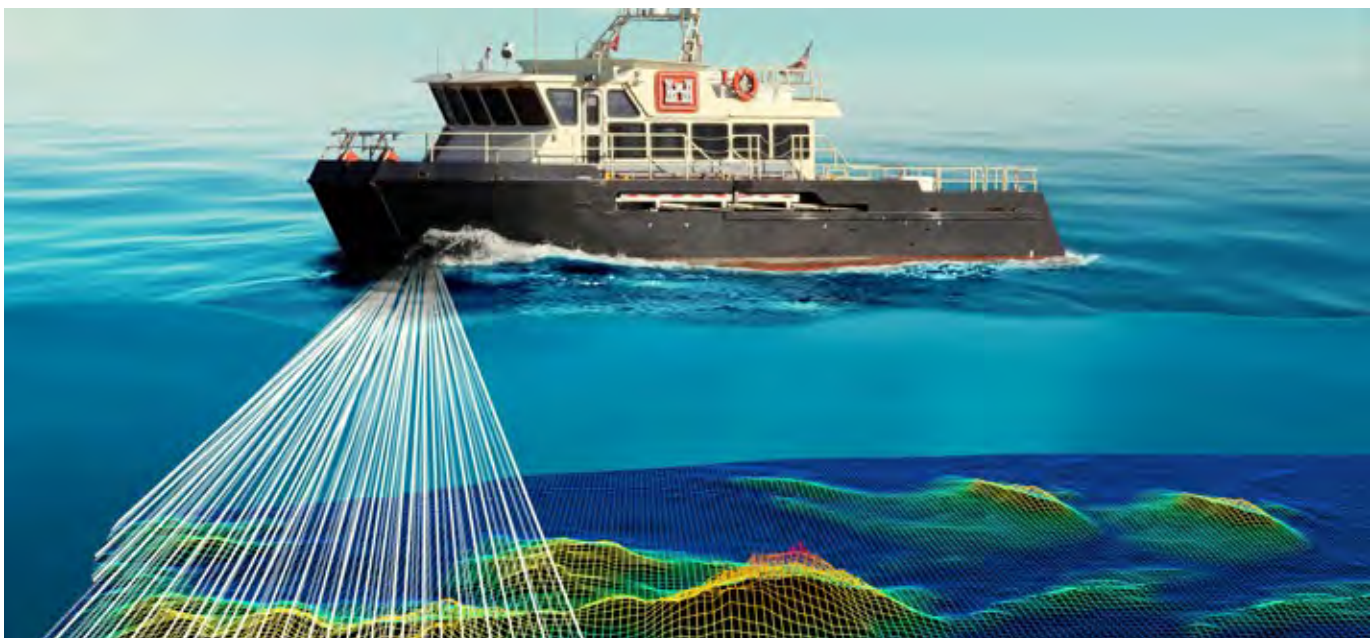
As a result, you receive accurate, near-real-time hydrographic survey data that's tailored to your individual needs. We can deliver hydrographic survey services either independently or in a customized suite depending on your project requirements and objectives.

Navigable waterway crossing surveys

River and canal crossing surveys determine the bottom contour of waterways. This information helps optimize the planning, design, and monitoring of proposed route crossings. It also enables determining the depth of cover above line(s) to identify potential problem areas of high or exposed pipe. Audubon hydrographic surveyors are trained and tested in full compliance with the Department of Transportation (DOT) Operator Qualification program for both gas and liquids lines.

Pre- and post-dredging surveys

Pre-dredge surveys provide assurance that the team accurately calculates the volume of sediment within the dredging template. Post-dredge surveys ensure that the team achieves the dredge template depth without overlooking high or missed spots that could present a hazard to navigation. They also serve in quality assurance for contract compliance. Audubon delivers high-resolution sounding data of your work area to help you efficiently and accurately calculate the volume of sediment for removal.



Shallow-water hazard surveys

Hazard surveys in shallow water are detailed investigation surveys for preconstruction planning, pre- and post-abandonment projects, debris location, permitting of marine pipeline and flowline routes, and platform and drillsite placement. Our shallow-water hazard survey services identify potential hazards so you can adjust your operational plans for maximum productivity and safety.

Pipeline as-built and depth-of-cover surveys

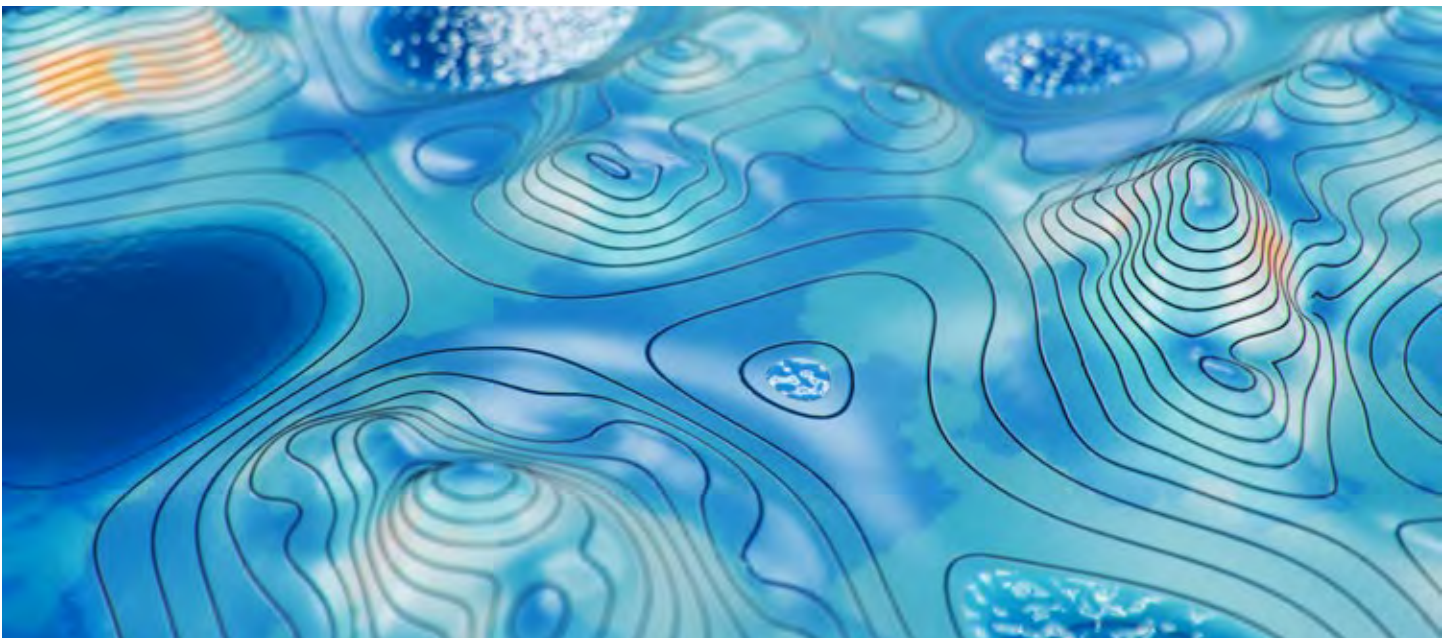
As-built surveys are conducted to determine the burial depth and elevation of the pipeline with respect to the natural ground. Depth-of-cover surveys are required to know how backfill is required when burying pipeline at a certain depth. These surveys are required by DOT and for compliance with coastal uses permits. Audubon provides both pipeline as-built and depth-of-cover surveys quickly and efficiently and can liaise with the appropriate governmental agency if needed to save you time, resources, and energy.

Proposed well location surveys

These surveys are conducted to collect data on the physical conditions of a drillsite and for physically marking proposed well locations. Our hydrographic survey team works with environmental specialists to collect mapping data and documentation for submission to state and federal agencies when requested, helping to expedite the process and accelerate your workflow.

Plugged and abandoned (P&A) well surveys

P&A well surveys are performed to locate abandoned well locations for reentry or to accurately map the location of a geologically significant well upon which geology and unitization can be based. We provide detailed information about P&A wells that help you make well-informed decisions while complying with all governmental regulations.



Oil and gas well drillsite surveys

Well drillsite surveys show proposed or as-built access routes and drillsite configurations. This data is critical for paying damages or negotiating surface rights. Audubon provides high-quality data and can make recommendations to optimize your drillsite location and increase returns from existing infrastructure.

Side-scan and 360° sonar surveys

Side-scan sonar surveys detect, position, and dimension the features found beneath the surface of the water but above the natural bottom. Shallow-water side-scan operations require special operational considerations.

360° sonar surveys are performed for exploratory or delineation well drilling, platforms, single-well caissons, and well protectors. You can also use 360° sonar surveys to fulfill requirements by marine insurance carriers; locate debris; track divers on the seafloor; and visually inspect pilings, bulkheads, wing walls, and any other submerged horizontal or vertical structure. For these surveys, we utilize an ultrahigh-resolution Kongsberg MS1000 scanning sonar processor capable of operating at various frequencies to ensure accurate, reliable data collection. We can produce presite and postsite clearance letters as well as output data from Kongsberg Sonar Mosaic software.

Magnetometer surveys

Cesium magnetometers detect metallic or ferrous material such as well casings, pipelines, buried tanks, unexploded ordinance (UXO) material, or drums. Available for land and inland and coastal waters, our magnetometer surveys offer information that can guide informed decisions about the lithographic, archaeological, and depositional nature of your project environment.

About Audubon Field Solutions LLC

Audubon Field Solutions LLC, is a global provider of integrated pipeline and field services supporting energy, power, and industrial clients. Using the latest digital technologies and specialized equipment, our professionals are committed to delivering safe, sustainable technical solutions at every step.

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