



## Lake Mapping Services

### Bathymetric Mapping and Sediment Analysis

Bathymetric lake mapping involves the measurement of water depth and surface area through the use of advanced technologies including high resolution depth finders, GPS and 3-D contour imaging. Utilizing these tools, SOLitude Lake Management® can produce accurate bathymetric maps to determine the volume of your waterbody, locations of structure and estimate breadth and depth of accumulated sediment. Accurate mapping of water depth and sediment accumulation can be used to tailor site-specific monitoring and management programs to allow for more effective and efficient lake management.

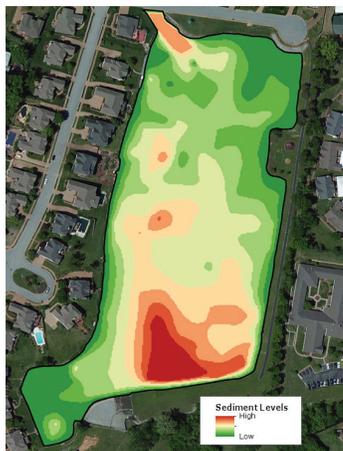


#### Surface Mapping

Understanding the exact surface area of your waterbody is one of the first steps in developing a lake or pond management plan. Surface mapping utilizes GPS software and satellite imagery, which enables a SOLitude specialist to determine a waterbody's surface area. It's also important to identify the locations of the physical and structural components of your waterbody, such as inlet and outlet structures, fountains, aeration systems, and fish habitat.

#### Bathymetric Studies

Bathymetric mapping involves the use of integrated GPS and depth sensing technology to create a three-dimensional model of your waterbody. As a result, this model has detailed bottom contours and highly accurate volume calculations. This information is vital to managing water quality, aquatic plants, algae and other aquatic life in your ecosystem.



#### Sediment Analysis

Accumulation of sediment on the bottom of your lake or pond is inevitable. However, the rate at which it will accumulate is highly variable, and in many instances within the control of the lake or pond owner. To accurately determine this sediment accumulation in your waterbody, when it will need to be removed and the cost associated in doing so, bathymetry is a must. We recommend having a bathymetric study and sediment analysis performed every three to five years. Data collected will serve as a baseline for owners and lake managers to help establish an accurate budget and timetable for potential dredging projects.

### Lake Mapping and Bathymetric Data can be Utilized to:

- Develop programs to manage your aquatic vegetation or algae issues.
- Strategically place structural fish cover.
- Plan and budget for future sediment removal.
- Properly size and place aeration devices.

## Water Quality Management

Determining the volume of your lake or pond is important as it allows us to properly treat and manage algae or aquatic vegetation infestations, and address water quality problems such as nutrient loading or low dissolved oxygen. In instances where aquatic algaecides or herbicides are being employed, applying too little product can lead to ineffective results. Alternately, using too much product may not only be a waste of money, it could have impacts to non-target species and also be a violation of state and federal regulations.

## Aquatic Vegetation Studies

Aquatic vegetation is a vital part of a lake ecosystem and provides habitat for spawning fish, protection for immature fish and forage for waterfowl. In some instances, excessive growth of aquatic plants can be detrimental to the viability of an open water habitat with extensive, dense vegetation. It can disrupt a fishery's predator-prey relationship, increase oxygen demands, reduce water circulation, increase pH and elevate water temperature. Through mapping technology, we can identify the type, location and density of vegetation to better understand your waterbody's current conditions and find the perfect balance to help achieve your goals.

## Fisheries Management



An accurate waterbody map provides the information needed to get the most out of your fishery. Lake bathymetric mapping can help determine the areas likely to be used by diverse species of fish at various stages in their life-cycle, so that we can accurately manage, strategically place structural cover, and most importantly, help to find out where those trophy bass are hiding!

## Using Bathymetry For Dredging Projects

Even with an effective maintenance plan in place, lakes and ponds will eventually have to face some amount of sediment removal or dredging. This process is usually the largest single expenditure a lake or pond owner will incur, so it's smart to be prepared.

Before sediment removal, a bathymetric study and sediment analysis are highly recommended. Having this information prior to removal enables very accurate sediment levels to be calculated. This information, combined with bathymetric data, will allow for pre-removal and post-removal comparisons, ensuring that the project was performed as proposed and that an acceptable amount of sediment was removed consistent with the project parameters and goals.



“ We currently have 70 ponds and SÖLitude was asked to remark on each pond, and they were able to complete a very comprehensive study which has been invaluable as we map the way forward with our pond maintenance and funding... We not only got great technical information, but also have formed a relationship that will help going forward as we plan for our pond management. SÖLitude Lake Management is a professional company that brings experience and technology to the table. ”

**Beth Brittingham, PCAM**

Community Association Manager