

## How to Proactively Manage Your Water Body By SOLITUDE Lake Management

From the moment they are formed, lakes and ponds begin to age. This process is called [eutrophication](#), and the rate at which a water body ages is dependent on many factors, including plant and algae growth, erosion and nutrient pollution. If these factors are not managed correctly, the lake or pond will eventually fill with sediment until it becomes no more than a puddle. Fortunately, many proactive solutions can help reduce these [water quality](#) issues and extend the lifespan of your water body. A professional lake management company can help you develop a personalized plan that meets your specific goal – whether it's cultivating a trophy fishery, a beautiful community pond or a recreational lake to use for boating and swimming.

Often, the first step when developing a proactive management plan is to test the water. Water quality testing helps establish a management baseline by revealing nutrient levels, dissolved oxygen, pH, algae and bacteria species, and other unique parameters. Much like lab tests performed by a doctor, water quality tests will identify potential areas of concern and allow our aquatic experts to create a treatment plan that enhances the overall health and beauty of the ecosystem. Testing at regular intervals will ensure your water body is on track to meet your goals and help keep future problems like bad odors, [fish kills](#), toxic algae blooms, and invasive species infestations at bay.

Many problems that are identified through water quality testing can be prevented by improving dissolved oxygen levels. This can be achieved with the introduction of floating fountains or submersed diffused aerators, which are helpful in keeping mosquitoes at bay, reducing stagnant water and preventing fish kills. Likewise, new innovations like nanobubble technology are making the benefits of aeration more effective and longer-lasting. [Nanobubble aerators](#) produce bubbles that are so small, they oxygenate the water column for several months, rather than immediately rising to the surface. This innovation is an excellent tool for the prevention of undesirable algal blooms, including toxic cyanobacteria, though it should always be paired with other proactive management strategies that get to the root of the water quality problem.

Lakes and ponds with extreme infestations of invasive plants and algae are likely suffering from excessive runoff. Runoff that occurs during rainstorms can bring all kinds of pollution in to a lake or pond, including fertilizers from surrounding farms or landscaping, animal waste, grass clippings and trash. These organic materials are rich in [phosphorous](#), nitrogen and other nutrients that are responsible for fueling undesirable plant growth and aging the water body. Cultivating a beneficial vegetative buffer from native plants and grasses can help prevent

sedimentation and runoff from flushing in to the lake or pond. Buffers should be allowed to grow 3-5 feet around the shoreline and trimmed annually. Water bodies suffering from excessive (and potentially dangerous) shoreline erosion may further benefit from a bioengineered living shoreline using coconut logs or a patented woven mesh system called [ShoreSOX](#). SOX systems, in particular, are durable, aesthetically-pleasing, and custom designed to halt sedimentation and erosion for 10 years or more.

In addition to shoreline protection, the professional application of beneficial biological bacteria should be considered to limit the negative impact of nutrients. Biological augmentation can help process any excess organic materials naturally, rendering them unfit to fuel nuisance plant and algae growth. Biological bacteria help stabilize the foundation of the aquatic resource and promote the diversification of the ecosystem by encouraging “good” zooplankton and healthy fish. Excess nutrients can also be alleviated by the application of unique lanthanum modified clay. Products like Phoslock and Alum rapidly bind with free reactive nutrients like phosphorous, settling to the bottom and effectively removing it from the water column. For lakes and ponds with extensive water movement, a new natural solution called [Biochar](#) is an effective alternative. A highly-absorbent material similar to activated charcoal, Biochar draws nutrients and pollutants from the water column, proactively limiting the growth of undesirable plants and algae.

If plant growth has already overrun your lake or pond to the point that water visibility is limited, mechanical means may be necessary to proactively restore the water body. [Hydro-raking](#) is an effective tool for the sustainable removal of nuisance rooted vegetation, tree limbs and other debris. A mechanical hydro-rake is a floating pontoon or barge outfitted with a backhoe and rake attachments. The hydro-rake can be used to remove sediment in water as shallow as 18 inches and in depths of up to 10 feet deep. The results of hydro-raking, where vegetation removal is the goal, will vary depending on the types of nuisance vegetation present. Plants with well-developed root systems, like waterlilies and cattails, can be significantly reduced for 2-3 years following a hydro-raking project. Most importantly, hydro-raking is an excellent tool to help extend the lifespan of a lake or pond without resorting to dredging, which is effective at restoring the depths of a water body, but is extremely costly.

No matter the state of a lake or pond, it's never too late to begin a proactive management plan to achieve your long-term water body goals. A professional lake manager will help you restore the natural balance of the ecosystem and work with you to slow the eutrophication process so your water body thrives—and looks beautiful—for years to come.