Aquatics in Brief
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How to Keep Your Water Clean and Healthy: You Have Options

Effective lake and pond management goes beyond controlling algae and weeds; its ultimate goal is to slow the waterbody's aging process. Proper maintenance enhances property value, turning a potential depreciating asset into a prime amenity.

Over time, lakes and ponds become overly enriched with nutrients. This process is accelerated in urban areas where construction, landscaping, recreation, and other human activities increase nutrient pollution. For example, when lawn fertilizers, leaf litter, or eroded sediment are washed into lakes and ponds, they bring excess nutrients that fuel pond weeds and algae. Without intervention, waterbodies slowly lose water capacity and water quality imbalances worsen. The result? Accumulation of muck increases risks of flooding, harmful algal blooms, foul odors, nuisance mosquitoes and midges, unsightly aesthetics, and fish kills.

Proactively managing water quality to help reduce nutrient levels and bottom muck is nothing new; however, there are new technologies that can help us better restore aging ponds and extend their lifespan. TryMarine™ is an exciting product for turning back the clock on eutrophication and keeping waterbodies healthy and functional.

Over time, excess organic matter settles at the bottom of lakes and ponds, forming nutrient-rich muck that devours oxygen and hosts nuisance weeds and algae. TryMarine™ elevates oxygen levels, giving microbes the conditions they need to accelerate organic muck decomposition and enhance ecosystem health. Broader availability of dissolved oxygen invigorates the natural resident food web, driving the consumption of excess nutrients. Over time, thick, slimy muck levels will dissipate and oxygen levels will sustainably increase, creating a natural balanced food-web. This

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We believe clean lakes promote good health, happiness and meaningful experiences.

INSIDE

How to Keep Your Water Clean and Healthy: You Have Options

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SOL Pro Annual Management Plans

Keeping your lake or pond clean and beautiful isn't a one-time job. It requires consistent, ongoing care by highly trained lake management professionals – and that's exactly what you get with your SOL Pro Plan*.

SOL Pro Base

Plan Includes:

- ✓ Algae & Aquatic Weed Treatments
- ✓ Basic Water Quality Assessment
- ✓ Visual Monitoring

SOL Pro-Active

Plan Includes:

- ✓ Algae & Aquatic Weed Treatments (As Needed)
- ✓ Advanced Water Quality Testing
- ✓ Recurring Water Quality Monitoring
- ✓ Visual Monitoring
- ✓ Source Reduction (Nutrient Remediation and/or Biological Treatments)
- ✓ Routine Fountain, Aeration, and Fish Feeder Maintenance (If Applicable)

SOL Pro Restore

The TryMarine™ Difference:

- ✓ Increases oxygen availability in bottom sediments and water
- ✓ Removes muck, leaves behind sand
- ✓ Improves water quality while increasing depth
- ✓ NSF-60 certified, no water use restrictions
- ✓ Not an herbicide or algaecide
- ✓ Improves your lake's natural ability to sustain ecological balance

*Management recommendations and solutions vary by region. Your Business Development Consultant will share and discuss details of each plan.

natural balance drives water clarity, and a healthy appearance. TryMarine* is NSF-60 certified making it safe even for drinking water applications. It is suitable for a wide range of waterbodies, from irrigation ponds to recreational lakes, fisheries and canals.

Lake and pond owners and managers can now access TryMarine™ through our SOL Pro-Restore annual management program. This program is designed to help ensure your waterbody receives top-tier care and is set up for long-term success.

We understand that all waterbodies are unique and all stakeholders have different priorities and budgets. Our SOL Pro-Active and SOL Pro-Base programs offer other varying approaches to keep your waterbody on track to meet your goals.

The SOL Pro-Active program focuses on reducing your reliance on reactive chemical applications while proactively keeping your water healthy and beautiful year-round. Our approach incorporates an integrated toolbox of solutions, which may include a combination of ongoing water quality monitoring and testing, nutrient remediation to "deactivate" excess nutrients, beneficial biological bacteria to improve the natural decomposition of organic materials, and routine fountain and aeration system maintenance.

Our SOL Pro-Base plan covers the essentials to keep your waterbody looking its best. While safe and effective, it is not considered a preventative approach to lake and pond management, but may be the right solution depending on your goals and budget.

Whether you're interested in a restorative program, a proactive approach, or a budget-friendly option to keep your water clean, an aquatic expert can tailor a program to meet your lake or pond's unique needs. By prioritizing modern, science-backed tools, we'll help ensure your waterbody continues to be a clean, beautiful, functional asset well into the future. ■

* https://www.trymarineglobal.com



Fact or Myth: Algaecides & Herbicides Eliminate Algae and Weeds for Good

When dense weeds and slimy algae start taking over your waterbody, it's tempting to look for a quick fix. Aquatic herbicides and algaecides are safe, fast-acting tools to halt nuisance growth, but are they the only solutions you should consider when looking to control algae and weeds?

The herbicides and algaecides used in lake and pond management are well-studied and registered with the Environmental Protection Agency (EPA)* to target undesirable growth without impacting native species. But the fact is, the results are short-lived. Weeds and algae are symptoms of larger problems, such as elevated nutrients and low oxygen levels. Without tackling those underlying imbalances, unwanted growth almost always returns.

Proactive prevention is the most effective strategy for managing nuisance growth. Many are unaware of the tools available to cultivate a balanced waterbody. An integrated management program offers tailored solutions for your property, goals, and budget.

As water flows toward lakes and ponds during rainstorms, it picks up nutrient sources like lawn fertilizers, animal waste, grass clippings, and eroded sediment. A robust buffer of native vegetation planted around the water's perimeter can help filter runoff and stabilize the shoreline.

Waterbodies with excess nutrients may benefit from nutrient remediation products designed to either absorb or "deactivate" nutrients like phosphorus or nitrogen in the water column and bottom sediments.

Well-oxygenated waterbodies are less susceptible to water quality imbalances. Strategically placed submersed aerators and surface aerators can help consistently circulate and oxygenate the water column. Dissolved oxygen is essential to promote the healthy populations of aerobic bacteria, which play a key role in the decomposition of organic matter.

Eliminating nuisance weeds and algae can be difficult. In some cases, herbicides and algaecides may be used to establish a clean slate—helping to improve aesthetics as well as access to the waterbody as you introduce proactive, long-term management solutions. And even with proactive measures in place, herbicides and algaecides may be used to help support the program if needed and desired.

Depending on the type of vegetation, a mechanical hydro-rake can be a non-chemical alternative for removing emergent and submersed weeds, along with bottom muck. Mechanical harvesters may be used to cut and collect certain floating weed species.

Other restorative tools like TryMarine™ can help reverse the effects of time on your waterbody's lifespan by targeting bottom muck often loaded with phosphorus. TryMarine™ accelerates the production of oxygen, which fuels the natural processing of organic materials and increases dissolved oxygen available to the broader ecosystem. Over time, nutrient levels in the water and sediment can fall by as much as 50-80%, and water depths can expand by up to 18 inches or more, depending on the muck composition.

Regardless of the chosen strategies, water quality testing should be conducted regularly to track changes in pH, nutrient levels, dissolved oxygen, and other parameters. Fluctuations can be early indicators of emerging problems, prompting timely interventions by aquatic experts.

So, fact or myth? The idea that algaecides and herbicides alone can eliminate algae and weeds for good, is largely a myth. The real key to lake and pond management is an integrated approach that focuses on fostering the health of the entire waterbody, not just managing symptoms. ■

* https://www.epa.gov

How to Determine **The Best Shoreline Erosion Repair Option**

When we think about healthy lakes and ponds, we typically imagine clean, gorgeous water that is free of algae and weeds. The shoreline is often an afterthought, but in reality, it plays a vital role in supporting a balanced, beautiful aquatic ecosystem. Keeping your shoreline in optimal condition is essential for protecting the health of your entire waterbody.

Erosion occurs naturally due to weather and wildlife, but human activities accelerate the process. Not only can erosion increase safety risks and expose vital stormwater structures or encroach on home foundations, but it also can cause a waterbody to "age" faster than normal through loss of depth and nutrient enrichment.

Shoreline erosion may present in different ways—some more noticeable than others. Signs can range from bare patches and small drop-offs to large slopes, sediment islands, and deep fissures in the earth. You might notice muck build-up and increased flooding during rainstorms. Water quality can also be affected by erosion; when water quality conditions are imbalanced, nuisance aquatic weeds and algae are more likely to develop.

The strategies used to protect and restore shorelines have come a long way. Modern technologies have replaced many traditional approaches, though the best solution largely depends on your unique goals and how the waterbody is used:

Bioengineered living shorelines

Geotextile material filled with sediment, shaped to the desired slope, and securely anchored to the bank.

Rip rap

Large rocks that are strategically stacked along the shoreline protect against wave action.

Bulkheads

Solid vertical structures often used in waterbodies with heavy wave action or limited horizontal space.

Erosion control logs

Long tubes made from natural fibers that help improve stability while promoting the growth of native grasses and vegetation.

Silt fences

Temporary fabric barriers that help capture eroded sediment and other organic materials.

So, what are your erosion control goals? Do you simply want to stop further erosion and secure your remaining shoreline? Or, are you hoping to rebuild lost land and restore your shoreline to its former size?

Each of these erosion control options comes with trade-offs in appearance, investment, and maintenance requirements. However, SOLitude most often recommends bioengineered living shorelines. In addition to being highly secure for many years after installation, bioengineering techniques ensure the system blends into the surrounding property for a visually seamless look. In many cases, several feet of lost land can be restored.

Furthermore, native beneficial vegetation can be directly planted into the system to cultivate a robust buffer around the water. In addition to further stabilizing shoreline sediment, vegetative buffers help support healthy water quality by filtering stormwater runoff.

No matter what's driving your erosion problems, quick intervention will help you avoid more serious and potentially costly issues associated with sediment loss. Regular inspections by an aquatic expert help ensure erosion issues are caught and corrected early, so your waterbody can keep looking and functioning at its best. ■

Case Study: How Alum Applications Helped Remove a Minnesota Lake from the "Impaired" Water List

Fish Lake, a 232-acre lake in Maple Grove, MN, has made an impressive comeback following years of severe algae blooms and water quality imbalances. After being listed as impaired for aquatic recreation in 2008, the lake was removed from the state's impaired waters list in 2024 thanks to a carefully planned and environmentally responsible aluminum sulfate (alum) treatment.

For many years, elevated levels of the nutrient phosphorus were recorded in Fish Lake, a popular spot for fishing, swimming, boating, paddling, and other recreational activities. Phosphorus fueled the algae responsible for the lake's green appearance. Studies determined that about 70% of the lake's phosphorus load came from its own bottom sediments, rather than from runoff from the surrounding areas[1]. Stakeholders turned to SOLitude for a safe, long-lasting solution.

With experience restoring over 35,000 acres of water, SOLitude's team has deep expertise in guiding lake associations and municipalities through every step of the process, from designing treatment plans and managing permitting requirements to securing grants and federal funding when needed. In this case, a $200,000 Clean Water Fund grant was awarded by the Minnesota Board of Water and Soil Resources. Funds were matched by multiple project partners, including the Three Rivers Park District, the Elm Creek Watershed Management Commission, the city of Maple Grove, Fish Lake Area Residents Association, and Hennepin County[2].

During an alum treatment, liquid aluminum sulfate is applied across the lake using specialized application vessels equipped with GPS tracking to ensure precise coverage. Once in the water, alum forms a floc that binds to phosphorus, creating particles that settle to the lake bottom. This particle layer traps phosphorus in the sediment, where it can no longer fuel algae growth. For this particular project, the management team took a staggered approach, applying half the total dose in 2017 and the remaining dose in 2019. This method helped keep fish and invertebrates safe by preventing swings in pH.

Before the treatment, Fish Lake's phosphorus levels averaged around 45 parts-per-billion (ppb), exceeding Minnesota's water-quality standard of 40 ppb. After the two-part alum treatment, phosphorus concentrations dropped significantly, falling below 30 ppb and sometimes reaching as low as 20 ppb.

In addition, Secchi disk readings confirmed that water clarity not only improved after the alum treatment, but far surpassed the state standard of 1.4 meters. With visibility reaching up to 3 meters, lake visitors can now see well below the surface. Chlorophyll-a standards also decreased, signaling a clear reduction in algae.

These improvements, which are expected to last for over a decade, helped Fish Lake qualify for removal from Minnesota's impaired waters list in 2024. The Fish Lake project highlights the power of eco-friendly, science-based solutions and local collaboration. By locking up phosphorus in the bottom sediments and restoring overall water quality, alum helped unlock the lake's potential for recreation and community enjoyment once again. ■

SOURCE
Board of Water and Soil Resources | Maple Grove's popular Fish Lake poised to drop 'impaired' status

Large-Scale Alum Application Sets to Improve Water Quality In Michigan Lake

Spring Lake in Spring Lake, MI, is a popular spot for fishing, boating, swimming, and other recreational activities. For nearly two decades, residents have enjoyed 1,091 acres of clear, healthy water, thanks to a 2005 alum application that helped maintain balanced nutrient levels. In recent years, however, algal blooms increased in frequency and intensity, indicating that the lake needed another application. While alum applications generally last 10–12 years, Spring Lake benefited for over 15 years.

On May 21, 2025, SOLitude completed an approximately month-long alum treatment. Our team worked seven days a week, from sunrise to sunset, applying alum to 1,568 acres of water. To ensure thorough coverage, we utilized two specialized state-of-the-art barges: a 64-foot vessel for open-water areas and a 32-foot vessel for more compact sections of the lake.

Following the treatment, residents saw a noticeable improvement in water clarity, and these benefits will continue to improve over the next few months.

This alum treatment is just one part of a comprehensive 10-year lake management plan. In addition to reducing phosphorus already present in the water column, steps will be taken to limit phosphorus entering the lake from the surrounding watershed.

SOLitude looks forward to continuing to work with Spring Lake to maintain healthy, clean water for residents to enjoy. We also want to give kudos to our team of alum experts who ensured applications were safe and effective.

SOLitude's California Team Restores Historic Fountain In Popular Park

While many SOLitude projects focus on water quality restoration, a recent project in Merced, CA, centered around the restoration of a historical fountain in the city's Applegate Park.

Originally commissioned in 1888 by Merced's founder, Charles Henry Huffman, and named after his wife, Laura Kirkland Huffman, the Laura Fountain has welcomed visitors for nearly 140 years, earning Merced the nickname "Fountain City."

After sitting dry for six years, the fountain is flowing once again thanks to a collaborative restoration effort led by SOLitude alongside the Merced City Council, contractors, and passionate community members and donors.

Over the years, the fountain and pool experienced significant misuse. As part of the project, SOLitude built a stronger foundation for the fountain and pool, installed a modern filtration system, added a new base of rocks beneath the fountain, and restored the rim and decorative spouts to their original design.

At the soft reintroduction ceremony, with members of the Huffman family in attendance, Mayor Matthew Serratto emphasized that restoring the fountain wasn't just about appearance; it was about honoring Merced's heritage and preserving what past generations built.

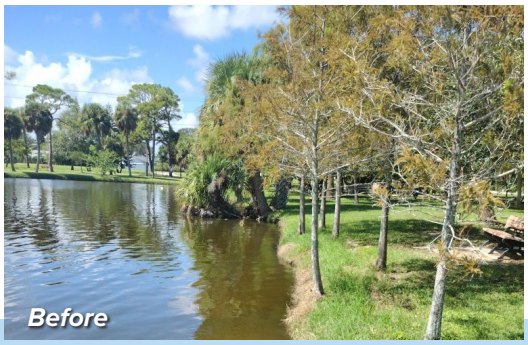
The SOLitude team is proud to have played a part in bringing this treasured piece of history back to life for the community!

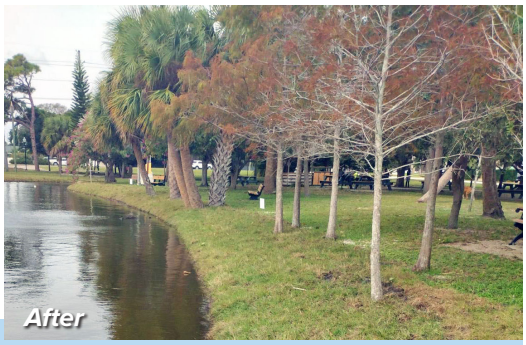
BEFORE & AFTER SHOWCASE

SHORELINE EROSION REPAIR

Property type:
City Park Pond

Location: Indian Harbor Beach, FL





BLUE-GREEN FILAMENTOUS ALGAE CONTROL

Property type:
Private Pond

Location: Ridgefield, CT

INVASIVE VEGETATION MANAGEMENT

Property type:
Golf Course Pond

Location: Fort Myers, FL

PLANKTONIC ALGAL BLOOM CONTROL

Property type:
Community Pond

Location: Gainesville, VA

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- Fountain & Aeration Systems
- Algae & Aquatic Weed Control
- Fisheries Management
- Water Quality Testing
- Bathymetric Studies
- Biological Augmentation
- Mechanical Harvesting & Hydro-Raking
- Shoreline Management & Erosion Repair

For helpful lake, pond, wetland and fisheries management tips visit:

solitudelakemanagement.com/social

What Is This Pond Weed?!

Native pond plants can provide food and shelter for beneficial wildlife and help maintain balanced water quality conditions by absorbing excess nutrients. Unfortunately, problems can arise when non-native plants are introduced. Invasive weeds evolved in foreign ecosystems and are not limited by the natural environmental conditions that keep native plants in check. They can quickly overtake lakes and ponds by outcompeting their native counterparts.

In addition to interfering with recreational activities such as swimming and fishing, invasive weeds can clog aeration and stormwater equipment, increase the chance of flooding, elevate safety risks, and endanger native species. Early intervention is essential to prevent long-term consequences to the ecosystem, your infrastructure, and the surrounding property.

EPA-registered aquatic herbicides are well-studied, effective tools to help quickly eliminate nuisance growth without impacting native species. However, herbicides are only a temporary solution; without a comprehensive plan in place, invasive growth typically returns.

Ongoing proactive monitoring is the key to preventing invasive weed growth. Aquatic experts are trained to distinguish between native and invasive plants, and can quickly develop a management plan if an undesirable weed is identified.

Curious about what's growing in your pond or lake? Scan the QR code or visit www.solitudelakemanagement.com/pond-weed-guide to explore our comprehensive Aquatic Weed ID Guide and learn more about common plants in your area. ■

SCAN TO DOWNLOAD THE AQUATIC WEED ID GUIDE