Aquatics in Brief
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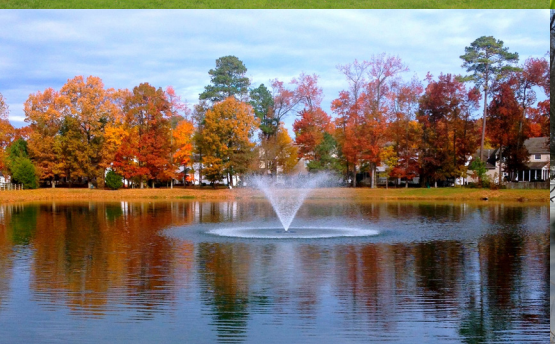
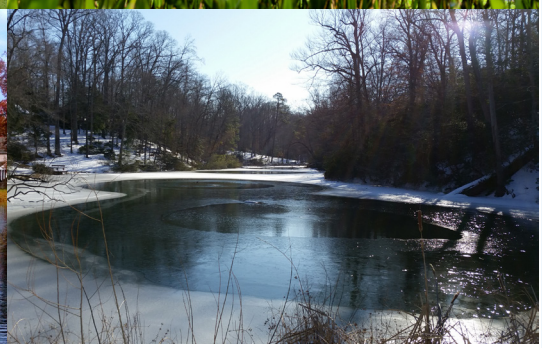
Your Go-To Seasonal Pond Management Checklist



No two waterbodies are the same. Every lake and pond has unique characteristics influenced by its location, both in a community and the particular region of the country. Whether your waterbody is situated in a bustling urban environment or nestled in a remote rural area, its surroundings shape its characteristics and the problems that can arise.

Furthermore, waterbodies located in southern states that rarely see a true winter often need year-round water quality management. Northern states that experience frigid temperatures typically require comprehensive winterization efforts, such as fountain removal.

Aquatic ecosystems are also impacted by the time of year. Each season brings with it different obstacles that management programs can account for:

SPRING

Melting snow and spring showers can transport pet waste, grass clippings, and garden fertilizers, into lakes and ponds—creating an overly fertile environment for aquatic weeds, algae, and harmful algal blooms.

SUMMER

Abundant sunlight and rising water temperatures can lead to dissolved oxygen depletion, fish kills, and the release of algal toxins. Likewise, activities like boating and fishing can transport invasive weeds to new ecosystems.

FALL

Dead leaves, sticks, and other organic materials may contribute to muck build-up and clog stormwater infrastructure. This can increase the risk of dangerous flooding and accelerate a waterbody's natural aging process.

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

INSIDE

Your Go-To Seasonal Pond Management Checklist

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WINTER

In many regions, winter can be harsh on lake and pond shorelines. Ongoing freezing and thawing may cause severe shoreline deterioration, expose pipes and tree roots, and could lead to collapse. Fountains and aerators can also be damaged by ice formation.

SEASONAL POND MANAGEMENT CHECKLIST

Lake and pond management is a year-round responsibility. These ecosystems are ever-changing, but property owners and managers can keep up by implementing proactive strategies ahead of each season:

SPRING

- ☑ Introduce beneficial vegetation around the shoreline to improve stability and filter stormwater runoff.
- ☑ Repair severe erosion damage.
- ☑ Inspect stormwater equipment for potential blockages or damage.
- ☑ Test water quality (pH, nutrient levels, oxygen).
- ☑ Ensure your fountain or aeration system is running properly.

SUMMER

- ☑ Apply nutrient management products to help balance water quality.
- ☑ Remove undesirable pond weeds with EPA-registered pesticides or a mechanical harvester.
- ☑ Properly dispose of grass clippings and yard waste, and limit fertilizer use to help prevent nutrient pollution in lakes and ponds.
- ☑ Monitor for signs of fish stress, such as gulping at the surface.

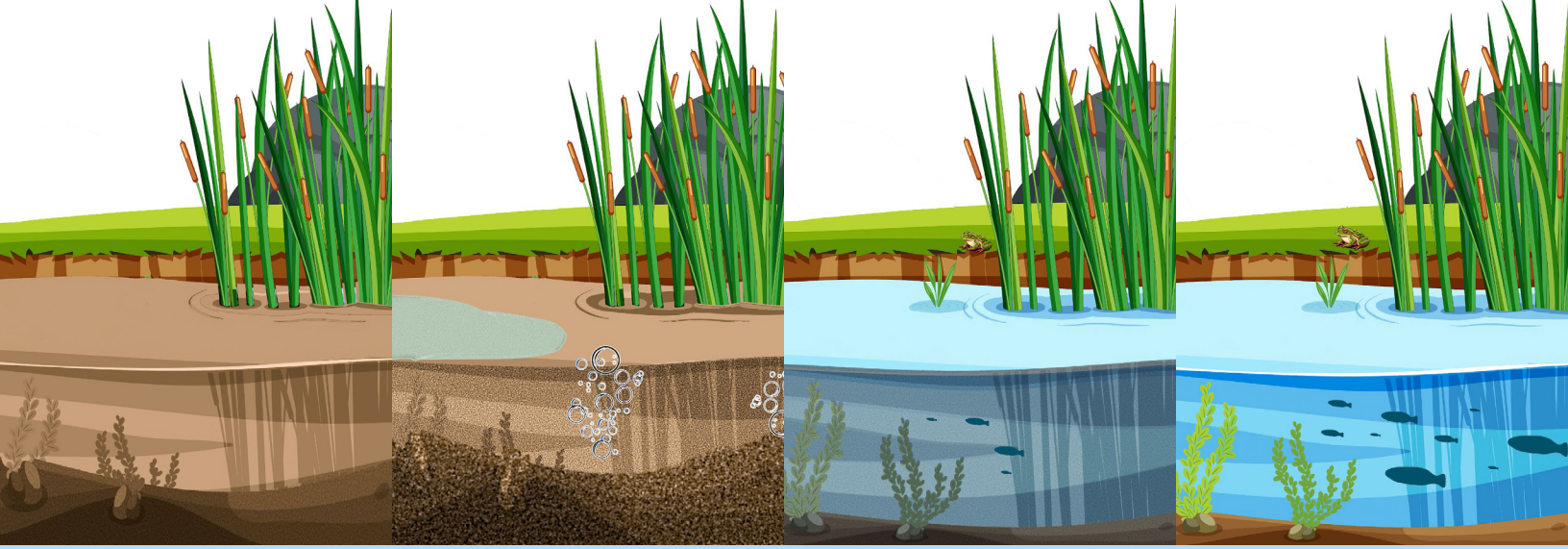
FALL

- ☑ Trim shoreline vegetation and remove debris around the waterbody.
- ☑ Schedule an oil and seals change to help ensure the longevity of fountains and aerators.
- ☑ Apply biological bacteria to help “digest” accumulated bottom muck.
- ☑ Conduct hydro-raking to physically remove muck and debris.
- ☑ Check your pond for signs of erosion or structural issues.

WINTER

- ☑ In northern regions, remove fountains and aerators to prevent freeze damage.
- ☑ Stock mosquitofish fish or forage fish in warmer climates, game fish such as trout in northern areas, and access fishery habitat.
- ☑ Perform bathymetric studies (lake mapping) to inspect waterbody depth and volume.
- ☑ Assess your management goals and budget for the coming year.

It’s important to note that some of these tasks are appropriate to perform no matter the season. You should always consult with an aquatic expert before implementing any solution or strategy. By understanding the unique needs of your waterbody and implementing a tailored, year-round plan, you can maintain a thriving aquatic environment that helps enhance your property’s value and natural beauty. ■



TryMarine: A Game-Changer in Reducing Muck and Restoring Water Quality

Muck—soft, gooey material at the bottom of lakes and ponds—can cause foul odors, muddy the water, raise flood risks, decrease oxygen levels, encourage algae growth, and even increase the chances of having a fish kill. This nutrient-rich substance harms water quality and disrupts the natural balance. However, innovative solutions like TryMarine are revolutionizing how we manage muck accumulation while also improving dissolved oxygen levels, biodiversity, and overall water quality.

Bottom muck is a common symptom of eutrophication, the process by which lakes and ponds accumulate organic matter. While eutrophication naturally occurs over time, human activities like pollution and agriculture can speed it up. Stormwater runoff carries nutrients like phosphorus and nitrogen from fertilizers, animal waste, leaf litter, and lawn clippings into waterbodies. This can lead to the excessive growth of aquatic weeds and algae, which deplete dissolved oxygen when they die and decay, creating nutrient-rich muck. Without intervention, this cycle can significantly shorten a waterbody's lifespan.

Eliminating bottom muck is an effective way to help slow eutrophication and restore water quality. That's where TryMarine comes in. This game-changing solution focuses on increasing oxygen levels in the bottom muck, helping to process the nutrient-rich muck into usable nutrients that are then consumed by the lake's natural food web. This, in turn, helps restore water quality, improve sediment composition, enhance biodiversity, and turn back the clock on your aging lake.

Once TryMarine is applied to the water, early indicators of its effectiveness include surface scum, bubbling, and cloudy water—signs that muck breakdown is underway. Depending on the level of eutrophication, significant improvements in muck composition and depth can be seen within 2 to 6 months. As muck breaks down, lake bottoms transform from slimy messes into sandy surfaces with increased water depth. This transformation of the muck can take a few years, while the improvements to water quality are seen more quickly, such as increased oxygen levels and reduced nutrient concentrations. These changes rejuvenate the ecosystem, better supporting aquatic life and creating clean, safe water for recreational activities. In fact, TryMarine has been consistently shown to decrease nutrients in the water column and bottom sediments by 50% or more.

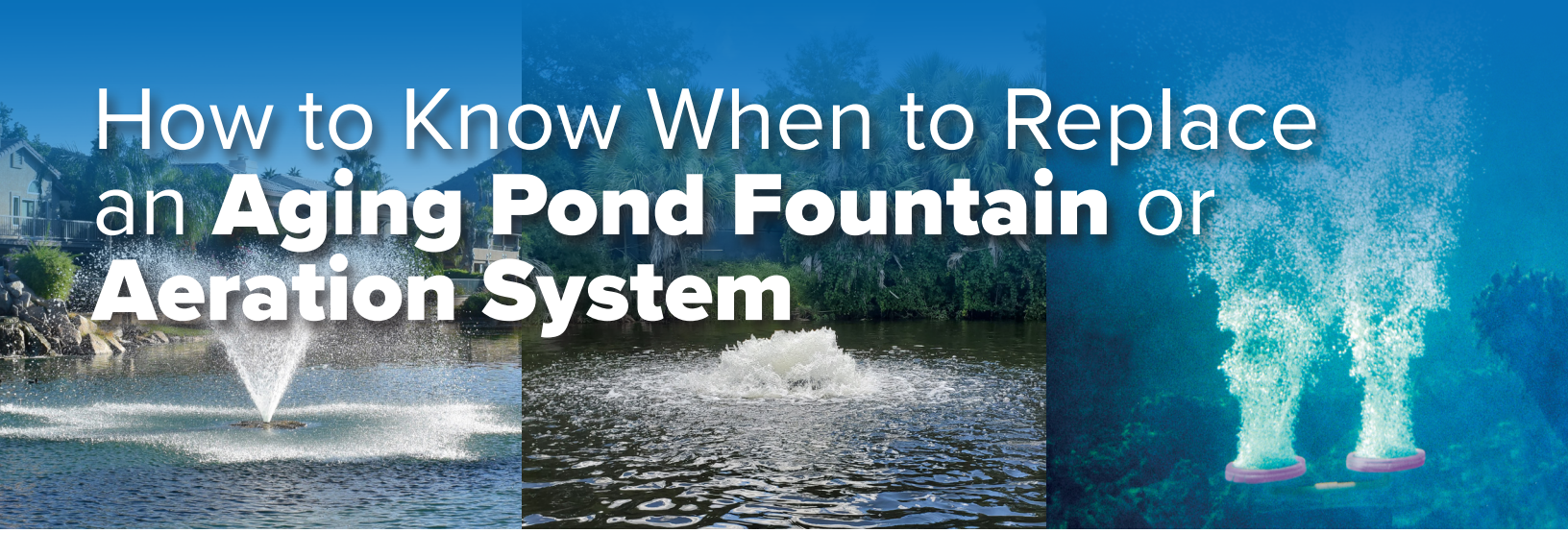
While TryMarine is not an herbicide, algaecide, or nutrient binder, it's common to see a reduction in undesirable growth; nuisance aquatic weeds and algae are less likely to thrive in environments where water quality is balanced. Additionally, TryMarine holds NSF-60 certification, ensuring it is safe for use in drinking water at doses up to 522 times the standard application rate. While TryMarine delivers impressive water restoration results, traditional water quality management solutions are still valuable. The effectiveness of any approach depends on the specific waterbody, the surrounding environment, management goals, and budget.

As a waterbody owner or manager, maintaining a healthy aquatic environment—both above and below the surface—is one of your top priorities. Is TryMarine the right fit for your waterbody? Contact your Aquatic Expert to learn if TryMarine can restore your lake from the bottom up. ■

Discover the TryMarine difference at www.trymarineglobal.com.

[1] https://www.trymarineglobal.com/studies
[2] https://www.trymarineglobal.com/water-remediation

How to Know When to Replace an **Aging Pond Fountain** or **Aeration System**



Floating fountains, surface aerators, and submersed aerators are vital tools for improving water quality in lakes and stormwater ponds. They help maintain healthy water conditions by preventing stagnation and circulating dissolved oxygen (DO) throughout the ecosystem which allows aquatic life to thrive.

Floating fountains provide two-fold benefits; they create turbulence on the water that facilitates the transfer of DO below the surface while serving as beautiful focal points. They are most effective in waterbodies between 4-6 feet deep.

Also designed for waterbodies between 4-6 feet deep, surface aerators create a strong, boil-like movement that mixes surface water into the water column below, providing 10x the oxygenation benefits of traditional fountains.

Submersed aerators are used in waterbodies over 6 feet deep. They pump surface air to the bottom of the waterbody and release it through diffusers, circulating and oxygenating the water column as they rise.

While each of these systems are highly efficient and reliable when they receive proper maintenance—typically lasting 5-10 years—there comes a time when replacement will be necessary. Here are some signs to look out for:

Your system keeps failing

The most obvious sign is frequent breakdowns or outages. Even if your system is still operational, it may be functioning at a significantly lower capacity than when it was new. Failure to provide the circulation and oxygenation that your waterbody needs could signal that the equipment has started to wear. Submersed aeration air compressors lose air pressure over time, so it is important to service these at least every couple of years.

You're frequently requesting costly "band-aid" repairs

Continuing to repair an aging system can be tempting due to the perceived cost of replacement. However, small repairs often accumulate and can exceed the price of a new system. Replacing one failed part on an aging system runs the risk of other parts failing soon after. Furthermore, if equipment is not working optimally, water quality imbalances could reemerge, leading to additional management costs.

The model is outdated

The age of your equipment is an additional consideration. If your system is nearing the end of its lifespan, investing in a new model may be wiser than saving money for future repairs.

New fountains and aerators come with numerous advantages, such as improved energy efficiency, and enhanced components, leading to lower operating costs and better performance. Additionally, many new systems come with better warranties, anywhere between 2-5 years, offering more extensive coverage than older models. Typically, repair or replacement parts only come with limited-year or less warranties.

Aging fountains and aeration systems can last for years with regular inspections, obstruction removal, and timely oils and seals changes, but eventually, there comes a time when maintenance can no longer keep them running at peak efficiency. By recognizing the signs that it may be time to replace your system, you can help avoid recurring repair costs and maintain a healthy, beautiful waterbody all year long. ■

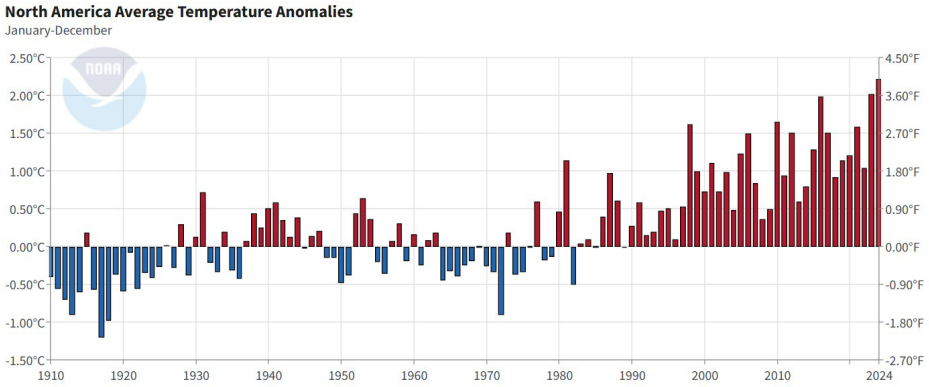
DISCOVER THE BENEFITS OF OXYGENATION

The Effects of Rising Water Temperatures

Warm weather signals longer days and endless possibilities to enjoy the recreational and aesthetic benefits of our waterbodies. However, research[1] from the National Oceanic and Atmospheric Administration (NOAA) reveals that global surface temperatures are steadily rising. Regions across the country, whether in the north, south, east, or west, are experiencing warmer climates and longer growing seasons than ever before. As a property owner or manager, it's important to understand how rising water temperatures may be impacting your waterbody and what you can do about it.

In 2024, data from NOAA's annual climate report revealed that North America had its warmest year on record, with an annual temperature 4.00°F above the 1910-2000 average[1]. A few degrees may not seem significant, but rising average temperatures are shifting the country's hardiness zones[2], redefining where plants can thrive and how long the growing season lasts. As the climate warms and excess nutrients continue to enter our waterbodies, regions that were once too cool for certain aquatic weeds and algae are now becoming more hospitable—and for longer periods of the year.

In addition to being unsightly, nuisance and invasive weeds are known to destroy natural habitats, deplete resources, and outcompete beneficial species. Likewise, some algal species, like blue-green algae, can produce toxins that threaten the health of humans and animals. A core mission of many Aquatic Experts is to manage and prevent harmful algal blooms. However, rising average temperatures are complicating this effort. Therefore, it is essential to address excess nutrients and other water quality issues to help mitigate the effects of increasing water temperatures.



Excess nutrients from stormwater runoff and low dissolved oxygen (DO) levels can further complicate matters. The combination of rising water temperatures, abundant nutrients, and low DO creates the perfect conditions for algae and weeds to thrive. This can lead to significant repercussions like explosive plant growth, increased flood risks, shoreline deterioration, unpleasant odors, and potential loss of property value.

Healthy, functional waterbodies are vital for sustaining our communities and natural ecosystems. While climate change is introducing new challenges, proactive strategies like water quality testing, aeration, nutrient remediation, and shoreline buffers can help safeguard our valuable aquatic resources by combating excess nutrients.

Although no single individual can prevent climate change, embracing a flexible, forward-thinking management approach can help ensure your waterbody remains healthy and provides value for years to come. ■

SOURCE

1 NOAA Global Climate Report 2024

2 USA Plant Hardiness Zone Map

The SOLution
creating a better world

2024 Accomplishments

Our volunteering and community outreach program, The SOLution, encourages colleagues to make a difference in the communities we serve. In 2024, our colleagues went above and beyond to give back to their communities through volunteerism and service.

Heart and SOL DAY

Our 6th annual Heart & SOL Day encouraged colleagues to give back to their communities through service. In 2024, over 100 colleagues dedicated 412 hours to improving 32 organizations and communities through trash clean-ups and volunteering at food banks.

KIND SOLS
FOOD DRIVE

Founded in 2023, Kind SOLs is a company-wide food drive and volunteering initiative that supports families in need during the Thanksgiving holiday through food donations and volunteer work at food banks. In 2024, over 40 colleagues participated, donating over 135 volunteer hours and 500 pounds of food. This effort directly impacted over 1,500 individuals and families during the Thanksgiving season.

DONATIONS INCLUDING IN-KIND SERVICES AND GOODS

$551,855

DONATED SINCE 2012

27,086

HOURS VOLUNTEERED SINCE 2012

1,705

HOURS VOLUNTEERED IN 2024

Top 3 Volunteers:

We'd like to give a special shout-out to these team members who generated the most volunteer hours company-wide!

- Raquel Mason (FL), Accounts Receivable (559 hours)
- Flo Paterno (FL), Customer Service Representative (426 hours)
- Jim Kannenberg (WI), District Manager (157 hours)

Volunteer Highlights

- Food Bank meal programs
- Park, beach, river and community trash clean-ups
- Animal sanctuary clean-ups and enhancements
- Hand-made cards for children, seniors, and veterans

BEFORE & AFTER SHOWCASE

CONTROLLING DUCKWEED

Property type:
Private Landowner

Location: Alba, TX

Ray Doty
Aquatic Project Manager

MANAGING WATER PRIMROSE VEGETATION

Property type:
Community Pond

Location: Bossier City, LA

Rease Patrick
Senior Aquatic Specialist

HYDRILLA AND DUCKWEED CONTROL & SHORELINE VEGETATION

Property type:
Golf Club

Location: Apopka, FL

Stephen Amrhein
Business Development Consultant

BLUE-GREEN FILAMENTOUS ALGAE CONTROL

Property type:
Community Lake

Location: West Hartford, CT

Jeff Schulz
Aquatic Biologist

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TOLL FREE: 855.881.1988
solitudelakemanagement.com
inquiries@solitudelake.com

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SERVICES AND CONSULTATION OFFERED NATIONWIDE

- Annual Lake & Pond Management
- Water Quality Restoration
- 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

3 Ways to Reduce & Repair Shoreline Erosion Damage

A stable, secure shoreline is vital for maintaining a healthy waterbody. Erosion gradually wears down the shoreline over time, leading to compromised water quality, safety hazards, loss of land, and decreased property values. Luckily, three approaches can help minimize the effects of shoreline erosion and repair erosion damage:

1. Establish a Vegetative Buffer:

Establish a vegetative buffer along your shoreline using native plants like grasses, sedges, and flowering species. These plants' deep root systems help stabilize soil and absorb excess nutrients, improving water quality. Planting in both the bank and the littoral zone (shallow water area) can help minimize erosion and enhance water quality.

2. Control Runoff Flow:

Without proper drainage pipes or stormwater inlets, runoff can create indentations in your shoreline over time and accelerate the erosion process. It's essential to redirect runoff to suitable drainage structures to minimize erosion damage to your shoreline.

3. Repair Damage with Bioengineered Shorelines:

If a shoreline has extensive or even minor erosion damage, there are effective methods to repair and even restore the lost land. Bioengineered living shorelines utilize a mesh system that is anchored to the stable shoreline and filled with organic material. Once sealed, native grasses or plants can be installed over or through the system, creating a durable and natural-looking shoreline.

By conducting regular shoreline inspections, you can proactively spot problem areas and implement solutions to help mitigate or repair erosion damage. Contact our shoreline management experts today to safeguard your shoreline. ■