

## Step-by-Step Guide to Building Your Annual Lake Management Plan



Lake and pond maintenance is not just important during the summer months; preserving the longevity of water resources requires an ongoing commitment. It's never too late to start implementing an [Annual Lake Management Plan](#). In six steps, you can build a program that helps maximize the health, beauty, and functionality of your waterbody well into the future.



### STEP 1: ESTABLISH YOUR GOALS & BUDGET WITH YOUR AQUATIC EXPERT & STAKEHOLDERS

The first step in building your plan is to identify your goals and establish a budget. This may require engaging with community residents, board members, local citizens, or other stakeholders to understand their concerns and expectations, whether they involve improving stormwater functionality, enhancing aesthetics, or providing swimming access for the public. Cross-collaboration will help ensure that your plan fulfills a variety of needs.

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

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**SOLITUDE**  
LAKE MANAGEMENT

TOLL FREE: **855-881-1988**  
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Restoring Balance.  
Enhancing Beauty.

## Step-by-Step Guide to Building Your Annual Lake Management Plan *Continued from front cover*

### STEP 2: IDENTIFY & DISCUSS VISUAL ISSUES WITH A LOCAL AQUATIC EXPERT

Consulting with a local aquatic expert is essential to identify any visual issues that may be present such as [weeds](#), [algae](#), [invasive species](#), [erosion](#), or [stormwater infrastructure](#) problems. An expert's insight will help you understand the extent of these issues and determine the appropriate course of action.

### STEP 3: CONDUCT A SCIENTIFIC EVALUATION OF YOUR WATERBODY

To establish a baseline from which to build your program, aquatic experts will conduct a scientific evaluation of your waterbody. This may involve several key procedures, including [water quality testing](#) and [lake mapping](#). Water quality testing helps you understand the current state of health, while lake mapping provides information about depth levels and the rate of sedimentation.

### STEP 4: DETERMINE THE SOLUTIONS NEEDED TO REACH YOUR GOALS

Based on the data collected during the scientific evaluation, your aquatic expert will recommend the appropriate management solutions to address the identified issues. For example, if water quality tests reveal low dissolved oxygen levels, your expert may suggest [installing aeration systems](#) to improve oxygenation. This step ensures that your lake management plan is tailored to your unique waterbody and will help you meet your specific goals.



### STEP 5: CONSIDER TIMING, BUDGETING, AND PERMITTING

Budgeting, permitting, and seasonal timing are essential considerations when prioritizing lake management services. For instance, immediate treatment may be necessary for algae infestations during peak summer months, and proactive measures like aeration can be installed concurrently. On the other hand, larger services like [hydro-raking](#) may be a project that is desired for completion during the off-season. If funding is tight, consider completing projects in phases when possible and budgeting ahead for one-time solutions. Your aquatic expert will help you check if any permits are required and collaborate with regulatory agencies to obtain the necessary approvals at the correct time – something particularly important in [northern states](#).

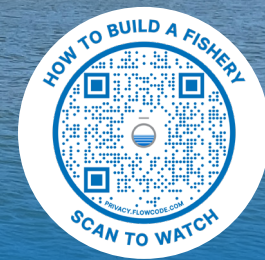


### STEP 6: GET STARTED WITH YOUR ANNUAL MANAGEMENT PLAN

Once you and your lake management partner have discussed and built your lake management plan, it's time to get started! Your aquatic expert will guide you through the implementation phase and ensure smooth execution. You'll also gain access to SOLitude's [Customer Portal](#) to stay up-to-date with program results and invoices, and maintain communication with your local aquatic experts.

Well-managed lakes and ponds not only enhance the beauty of our properties but also provide a thriving ecosystem for all to enjoy. By following this step-by-step guide, you can create a comprehensive annual lake management plan that aligns with your goals and budget, and promotes the long-term health of your waterbody. ■

# A Guide to Fish Stocking for a Trophy Fishery



In the complex world of fisheries management, several variables influence the success of a [trophy fishery](#). Largemouth bass are a popular trophy species among fishing enthusiasts, as well as other predator fish such as [Striped bass](#) or [Catfish](#). Cultivating a robust population of trophy fish requires a consistent supply of prey, which Fisheries Biologists achieve through strategic fish stocking.

There is more to [fish stocking](#) than meets the eye; species type, size, availability, temperature, location, and time of year are important considerations when developing a stocking program. Stocking strategies will also depend on stakeholder goals and budget.

In general, the optimal range for stocking most fish species is 55 to 75 degrees Fahrenheit. This temperature range allows fish to comfortably acclimate to their surroundings and find sufficient food and refuge. In most areas of the country, this means stocking usually takes place in the fall or spring.

Before choosing the proper species, a Fisheries Biologist will likely conduct an [electrofishing survey](#) to evaluate current predator-prey relationships and remove fish if the dynamics are imbalanced. They will then design a stocking program, choosing from several staple prey fish species based on the needs of the waterbody and the stakeholder's budget and goals.

[Bluegill](#), for example, are popular prey fish that mature quickly and have a 5 to 6 year lifespan – providing long-term forage. Redear Sunfish are also commonly stocked as they support the food chain and have a unique diet of mollusks which helps prevent the spread of parasites to other fish. [Golden Shiners](#) are another species that serve as excellent forage for predator fish.

[Threadfin shad](#) are a favorite among Fisheries Biologists for their abundant prey status and reproductive capacity; however, they die when water temperatures drop into the low 40s, so they typically need to be restocked

every spring. Although this seems inefficient, they make up for it by producing significant biomass to fuel predator fish throughout the summer.

In certain regions, trout may also be suitable candidates for stocking. In the fall or early winter, they can be stocked at smaller sizes to serve as forage for large predator fish during the cooler months, or stocked at larger sizes to create fun cold-weather fishing opportunities.

When it comes to trophy fish, stocking also tends to take place in the spring and fall, aside from fingerling [Largemouth bass](#), which are typically stocked mid-summer. Stocking predator fish should only be done when necessary so as to not interfere with growth goals.

It is important to note that each state has its own stocking regulations. Before introducing any fish species, familiarize yourself with your state's regulations, obtain the necessary permits, and consult with a Fisheries Biologist for guidance.

Stocking is just one part of a successful [fisheries management program](#). Fish stocking should be accompanied by other solutions, including [supplemental feeding](#), [water quality](#) testing and improvements, plankton bloom management, and [fish cover](#). Consistent maintenance and monitoring will help ensure your trophy fishery continues to entertain and impress all year long. ■





## Small Stormwater Ponds vs. Large Lakes: Are They Managed Differently?

When it comes to managing lakes and ponds, there is no one-size-fits-all approach. Each waterbody is different, with its own set of challenges and needs. Just as no two waterbodies are alike, no two management programs should be exactly the same.

Lakes and ponds are commonly confused due to their varying sizes, depths, and uses. There is no official distinction and naming conventions are often used interchangeably from region to region.

At SOLitude, we use the term “pond” to refer to smaller, shallower waterbodies designed to retain water during rainstorms. We use “lake” to describe larger deeper waterbodies. While both types experience water quality issues, management needs can vary significantly between lakes and ponds.

SOLitude understands the importance

of tailoring maintenance programs to suit the specific characteristics of a waterbody, whether it's a [stormwater pond](#) in a neighborhood, a [large lake](#) in a public park, or a reservoir for drinking water. The size and depth of the waterbody should be considered when developing a management plan.

Stormwater ponds require [consistent maintenance](#) and monitoring to ensure they function as intended. Solutions such as [floating fountains](#) and [surface aerators](#) can help correct dissolved oxygen deficiencies by creating turbulence that promotes oxygen transfer at the surface. Because of this, they are only recommended for shallower ponds less than six feet deep. Deeper, larger lakes can benefit from [submersed aerators](#), which pump air to the bottom through tubing. As air bubbles rise, they circulate and oxygenate the water column.

Elevated nutrient levels in stormwater ponds may require nutrient remediation services using products like [Phoslock](#)<sup>1</sup> and [EutroSORB](#)<sup>2</sup>, which physically bind with and remove excess nutrients to help prevent the likelihood of [weeds and algae](#). Phosflow and EutroSORB F, which are absorbent media contained in small permeable bags, are most effective at capturing nutrients when placed around pond inlets and outlets.

[Aluminum sulfate](#) (alum) is another nutrient remediation product recommended for lakes, usually larger than 10 acres. Using specialized barges, alum can be applied rapidly and uniformly across vast areas to bind with nutrients. Then, the nutrients sink with the alum floc and become trapped and inactivated in the bottom sediments, helping to [improve water clarity](#) and limit future water quality issues.



*Alum Application*

[Shoreline management](#) plays a crucial role in nutrient control. Planting [vegetative buffers](#) around stormwater ponds can help limit nutrient pollution and slow the flow of water during storms. While maintaining a buffer around a larger lake may not be realistic, vegetation can be planted around recreational areas or specific spots with heavy nutrient loading.

If shorelines are severely eroded, restoration may be necessary using [bioengineering techniques](#) to create “living shorelines”. These efforts are generally easier and more cost-effective around smaller ponds, but large lakes can be repaired in phases or only in high-traffic areas.

All waterbodies naturally lose depth over time, which means they all require a form of depth restoration to maintain functionality. [Dredging services](#) can restore a stormwater pond’s water-holding capacity and increase the depth of lake coves and recreational areas. [Hydro-raking](#) is a cost-friendly alternative for spot removal of [muck build-up](#), prolonging the need for dredging. Bathymetric mapping services help assess sediment build-up and predict future dredging needs.

Regardless of size, proper planning and budgeting are essential for the consistent management of waterbodies. Understanding the differences between small stormwater ponds and large lakes, and implementing appropriate management practices will ensure they meet the needs of those who rely on them. ■



*Surface Aerator*



# The SOLution

creating a better world

## SOLitude Colleagues Celebrate The 5th Annual Heart and SOL Day

On Heart and SOL Day, SOLitude's team members throughout the country are encouraged to spend up to four hours during the workday supporting their local communities through service. On April 21st, colleagues came together to observe the fifth annual [Heart and SOL Day](#) by cleaning up trash in nature preserves, beaches, and neighborhoods, restoring ponds, assembling food donations, painting buildings, and more.

Colleagues across 40 offices partnered with various organizations, including Gladiolus Food Pantry, ECHO Global Farm, Keep Lee County Beautiful, Great Smoky Mountains National Park, and Friends of Whitehall Park. By the end of the day, team members had generated over 319 volunteer hours and cleaned up 25 neighborhoods!

"Heart and SOL Day is about creating a better world by cleaning the one we have," Hannah Gentry, SOLitude's Community Outreach and Communications Specialist said. "It's an opportunity for colleagues to take a break from daily tasks and focus on the well-being of our local communities and the planet."

Heart and SOL Day is just one of several initiatives hosted under the charitable arm of the company, [The SOLution](#). This program was created to help foster our commitment to environmental stewardship and community involvement. Through volunteerism, activism, outreach, and fundraising, our colleagues help make a positive difference in each of the communities we serve. ■



# BEFORE & AFTER SHOWCASE

## EXOTIC VEGETATION MANAGEMENT

*Property type:*  
Country Club Lake

*Location:* Fort Myers, FL

**Luis Eguia**  
Aquatic Specialist



## PHRAGMITES REMOVAL VIA HYDRO-RAKING

*Property type:*  
Business Pond

*Location:* Suffield, CT

**Josh Hall**  
Mechanical Specialist



## HYDRODICTYON ALGAE MANAGEMENT

*Property type:*  
Community Lake

*Location:* Jacksonville, FL

**Kyle Follansbee**  
Aquatic Specialist



## DUCKWEED & FILAMENTOUS ALGAE CONTROL

*Property type:*  
Community Lake

*Location:* Conroe, TX

**Rafe Dean**  
Operations Manager



## 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](https://solitudelakemanagement.com/social)



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## Pond Buffers: Which Plants Are Native to Your Region?

Shoreline grasses and plants may appear insignificant or purely decorative at first glance, but they serve a crucial purpose. Shoreline plants create a beneficial vegetative buffer that protects and enhances aquatic ecosystems. It's important to utilize plants that are [native to the region](#) to maximize the benefits that a buffer provides.

Lake and pond owners and managers should cultivate their buffer to extend approximately 3-5 feet around their waterbody.

[Vegetative buffers](#) serve as a natural filter that prevents sediment, excess nutrients, and pollutants from washing into the water during rainstorms. This, in turn, helps maintain a balanced ecosystem that is less susceptible to the growth of [weeds and algae](#).

Buffer plants also help prevent erosion by forming deep, complex root systems that hold soil in place. Slowing the process of erosion may help preserve the health and depth of the waterbody, while reducing the risk of potential accidents around the perimeter.

Furthermore, vegetative buffers can improve the aesthetic appearance of a lake or pond. A 1-2 foot wall of native, flowering plants creates a beautiful focal point that may add value and visual interest to a property.

Vegetative buffers promote a healthy and diverse aquatic ecosystem, but it's essential to choose plants that are naturally suited to the unique environmental conditions in your region. Scan now to discover which native plants can enhance your waterbody. ■

