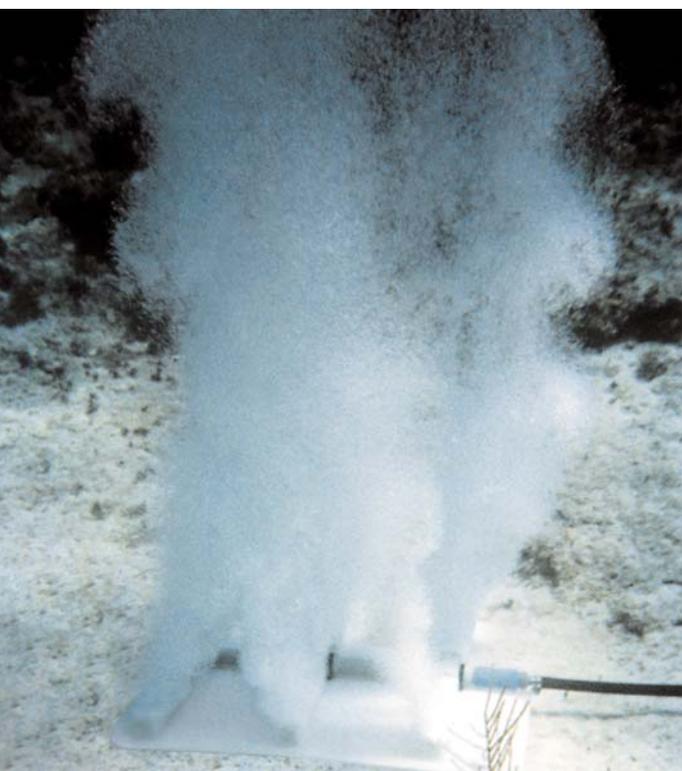


# GREAT LAKES™

POND, LAKE & RESERVOIR AERATION SYSTEMS  
FEATURING UNCONFINED SYNERGISTIC AIRLIFT TECHNOLOGY

Over  
**250,000**  
Acres  
**Aerated!**



## Does your lake or pond have...

- Foul odors and fishkills?
- Frequent algae blooms and green water?
- No oxygen near the bottom?
- High nutrient levels?
- Lack of benthic organisms such as mussels and snails?
- An accumulating layer of muck?
- Stagnant, inadequate mixing?

## The Problem

A great need for oxygen exists at the bottom of a eutrophic (nutrient rich) lake. Oxygen is absorbed at the surface but fails to reach the lake bottom due to thermal stratification, poor circulation and/or rapid consumption. During the summer months when the water is warm, oxygen can be consumed faster than it can be replenished, killing aquatic animals in the lower levels.

Without bottom oxygen, a lake's self-purification capability is reversed. Nutrients that would normally be unavailable or "locked" in the sediment get recycled into the water column. These excess nutrients are just as harmful to the lake as those that come from the surrounding watershed. Fertilizers, animal droppings, septic tank seepage and nutrients recycled from the sediment all increase a lake's need for oxygen.

*Don't wait until you experience a fishkill to realize that you have a problem!*

## The Cause

A self-perpetuating cycle of nutrient enrichment, plant growth and accumulation of muck depletes oxygen. Eventually, the rate at which oxygen is consumed in the lake exceeds the rate at which it is absorbed and produced, resulting in nutrient release from sediments and a potential fishkill. Only after a fishkill is it apparent that the lake needs an aeration system.

## The Solution

A Great Lakes™ synergistic airlift diffuser assembly will deliver up to 10 pounds of dissolved oxygen per horsepower per hour! Our Sweetwater® compressor, in conjunction with our Great Lakes™ synergistic airlift diffuser assemblies, delivers 8,000 gpm/hp of circulation—by far the highest in the industry—guaranteed!

## The Results

A Great Lakes™ aeration/destratification system will:

- Eliminate fishkills and improve fishing.
- Reduce algae growth and improve water clarity.
- Restore life-giving oxygen to the bottom.
- Reduce internal nutrient cycling.
- Increase bottom redox potential.
- Reduce sedimentation rate (muck accumulation).
- Eliminate stratification.
- Not suspend bottom sediments—guaranteed!

# Great Lakes™ Aeration Systems

## Guaranteed the most efficient!

The Great Lakes™ superior aeration system is an effective low-cost method of inducing gentle lake circulation to eliminate stratification and add oxygen. These systems feature the Great Lakes™ synergistic air diffusers that have proven their effectiveness in over 250,000 acres of lakes worldwide. Great Lakes™ synergistic air diffusers have been designed to break the thermocline and reduce stratification by upwelling water (8,000 gpm per hp) and exposing the lake's bottom water to the atmosphere to exchange gases. Install a low-cost destratification system with Great Lakes™ synergistic air diffusers and you can be confident that you have purchased the most efficient and cost-effective system available.

Great Lakes™ aeration/destratification systems feature Sweetwater® oil-free rotary vane compressors. Each compressor includes a muffler, inlet check valve and control valves for each diffuser. Also standard are 0-30 psi liquid-filled pressure gauges and pressure relief valves, factory-set to ensure that your system always runs efficiently.

The compressors come factory wired at either 115V or 230V single-phase (3-phase models are available) and are factory tested before shipping. The compressors can be mounted in an optional vandalproof lockable cabinet that will also keep out the weather. The cabinet is made of 1/8" thick steel (14-gauge) and powder-coated avocado green to blend into the surrounding landscape. Cabinets include built-in cooling fan(s), lock(s) and soundproofing that keeps the noise level below 55 dB at 10' (normal conversation) and virtually inaudible at 50'. Cabinets also come mounted on a durable, plastic equipment pad that is suitable for private property, or the pad can be removed to attach the cabinet to a poured concrete base (recommended for public installations). Tubing sold separately due to the variation in lake sizes.

To ensure proper application and system sizing, please request a lakes questionnaire.

For estimating purposes use the two sizing guides below. A newer or cleaner lake will need less aeration and an older lake with poor water quality will need more aeration.



Four-Diffuser Manifold			
Average Sizing Guide			
Surface Acres	Depth*	Number of Manifolds	Recommended System
Less than 1/2	4 to 6 feet	2	4GL32
Less than 3/4		3	4GL53
Less than 1		4	4GL54
Less than 1 1/2		5	4GL75
Less than 2		6	4GL96
Less than 1		6 to 9 feet	2
Less than 1 1/2	3		4GL53
Less than 2	4		4GL54
Less than 2 1/2	5		4GL75
Less than 3 1/2	6		4GL96
Less than 1 1/2	9 to 12 feet		2
Less than 2		3	4GL53
Less than 3		4	4GL54
Less than 4		5	4GL75
Less than 5		6	4GL96
Less than 2		12 to 15 feet	2
Less than 3	3		4GL53
Less than 4	4		4GL54
Less than 5	5		4GL75
Less than 6	6		4GL96

Six-Diffuser Manifold			
Average Sizing Guide			
Surface Acres	Depth*	Number of Manifolds	Recommended System
Less than 1	8 to 10 feet	1	SL3
Less than 5		3	SL7
Less than 8		4	SL9
Less than 2	10 to 12 feet	1	SL3
Less than 4		2	SL5
Less than 7		3	SL7
Less than 10	12 to 15 feet	4	SL9
Less than 3		1	SL3
Less than 6		2	SL5
Less than 9	15 to 18 feet	3	SL7
Less than 13		4	SL9
Less than 5		1	SL3
Less than 13	15 to 20 feet	3	SL7
Less than 17		4	SL9
Less than 8	20 to 28 feet	2	SL5
Less than 10		2	SL5

\*Depth is the water depth at the diffuser manifold locations. We strongly recommend you fax us a sketch of your lake showing size, depths and compressor location for assistance before ordering.

## Park Lake

A 10-acre lake, located in Orlando, Florida, was plagued with some of the poorest water quality in the area. The lake generated many complaints involving hydrilla, algae blooms, low dissolved oxygen, high nutrient levels and fishkills. The herbicides that were used offered some relief of the blooms but were an expensive, ongoing cost.

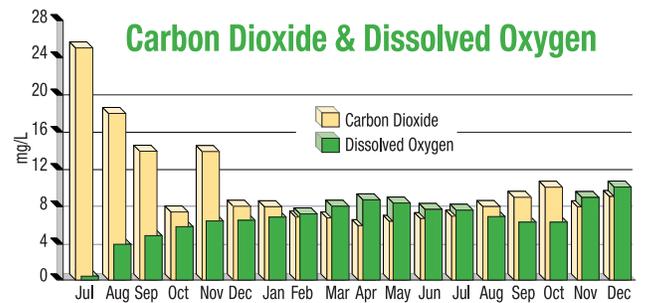
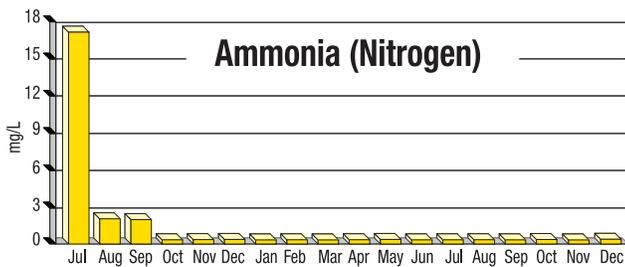
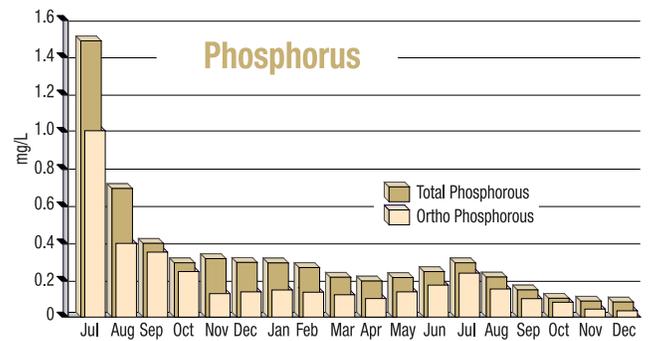
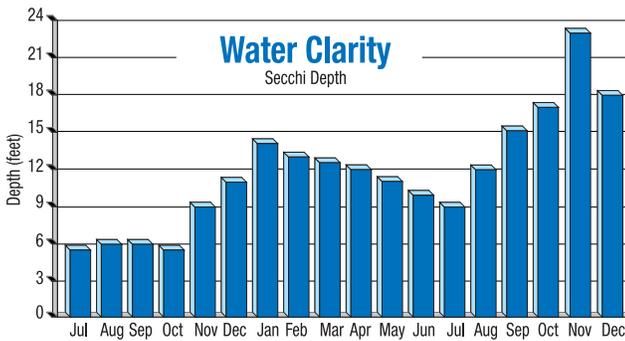
The urban run-off added nutrients to the 24-foot deep lake, and internal nutrient cycling compounded the problem. The lake remained stratified (stratification occurs when a layer of warmer, less dense water settles on top of cooler, denser water). When this occurs, the lower water cannot exchange gases. Oxygen becomes depleted and toxic gases, such as ammonia, carbon dioxide and hydrogen sulfide, accumulate. Most of the lake's bottom remained devoid of organisms. Without the mussels, snails, aerobic bacteria and other organisms that feed on the detritus, the lake's water quality could only get worse. Nutrient levels would increase from the internal nutrient cycling.

The City of Orlando installed an aeration system designed to aerate the lake by turning over the water every six days. Within weeks, dissolved oxygen levels in the lake increased and the toxic gases dispersed. Phosphorus and other nutrient levels decreased and water quality improved. Within one year, the lake supported largemouth bass and hundreds of waterfowl. The diversity and



quantity of other species increased. The ability of the lake to assimilate nutrients into the food web has been vastly improved. Park Lake is now considered a jewel to the city and the surrounding neighborhood and to have some of the best water quality in this city of 90 lakes. Over the years, the City of Orlando has purchased thirty additional systems for other city lakes.

## Lake Study: Park Lake



Return a design questionnaire, and we will size and quote the perfect Great Lakes™ system.



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