Natural Lake Biosciences

MetaFloc

BIOLOGICAL CLARIFIER AND PHOSPHORUS BINDER

MetaFloc is a complete water quality and clarity restoration tool. This advanced probiotic and flocculant combines scientific research in bioengineering, phosphorus binding, and coagulation/flocculation, resulting in a product that will improve all aspects of water quality.

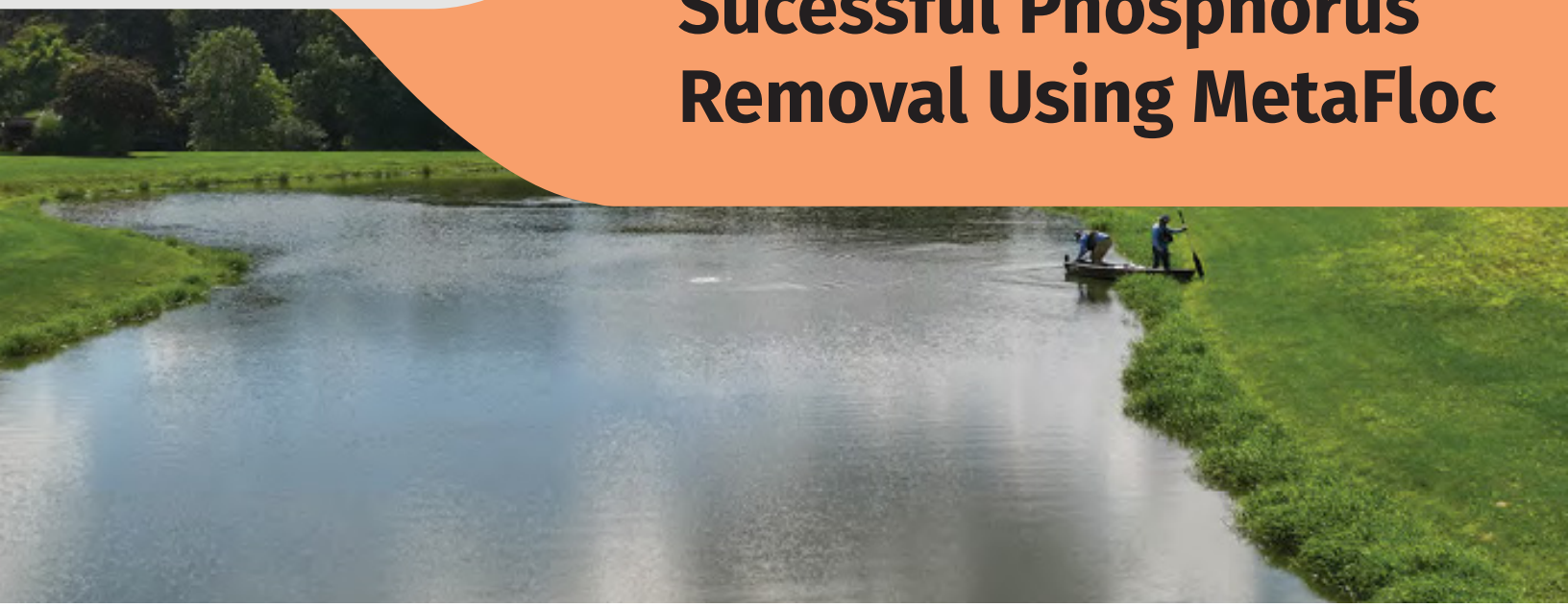
MetaFloc provides a natural way to stop lake eutrophication and restores your lake to a more pristine state. MetaFloc is applied evenly over the surface of the targeted area. This proprietary blend of probiotics and phosphorus binding materials removes phosphorus and clarifies water within hours. It continues to remove phosphorus from the sediments, preventing water quality issues in the future. MetaFloc provides the most flocculation and phosphorus binding per gallon of any product in the market. MetaFloc does not kill aquatic plants or algae.

MetaFloc is recommended for use in lakes, ponds, water gardens, reservoirs, and similar water bodies. This product is nontoxic and will not harm fish or other aquatic organisms.

KEY BENEFITS & HIGHLIGHTS

- Breaks down organics and binds phosphorus in the water column
- Improves water quality and clarity within hours
- Eliminates internal phosphorus re-cycling from the sediment
- Safe for fish and other aquatic life
- Does not impact water pH or alkalinity

Sucessful Phosphorus Removal Using MetaFloc



Overview

The initial environmental assessments at Memorial Park uncovered alarming levels of Total Nitrogen (5.8-6.1 ppm) and Total Phosphorus (2.18-2.22 ppm), indicating hypereutrophic conditions conducive to ongoing algae proliferation. The resulting decline in water clarity, measured at < 10 inches, underscored the significant loss in water quality due to the combined effects of excessive nutrients and dense algae populations.

A sediment dose of MetaFloc, along with monthly MuckBitoics, has completely restored Memorial Park. Average water quality conditions post-treatment:

- Total Phosphorus (< 0.01 ppm, 98% reduction)
- Total Nitrogen (< 1.5 ppm, 81% reduction)
- Turbidity (< 5 NTU, 84% reduction)
- Secchi (> 40”, 75% Improvement)

Lake conditions have been maintained (>320 DAT) despite incoming nutrient loading.

MetaFloc

reduced

Phosphate

by

93%

Nitrate

by

86%

and

Ammonia

by

56%

Dose Rate

For best results, broadcast spray across the targeted surface area. Avoid mixing lake sediments during application. If an algae bloom is present, it is best to treat it beforehand using an algaecide, tank rinse, and then apply MetaFloc.

Available Sizes

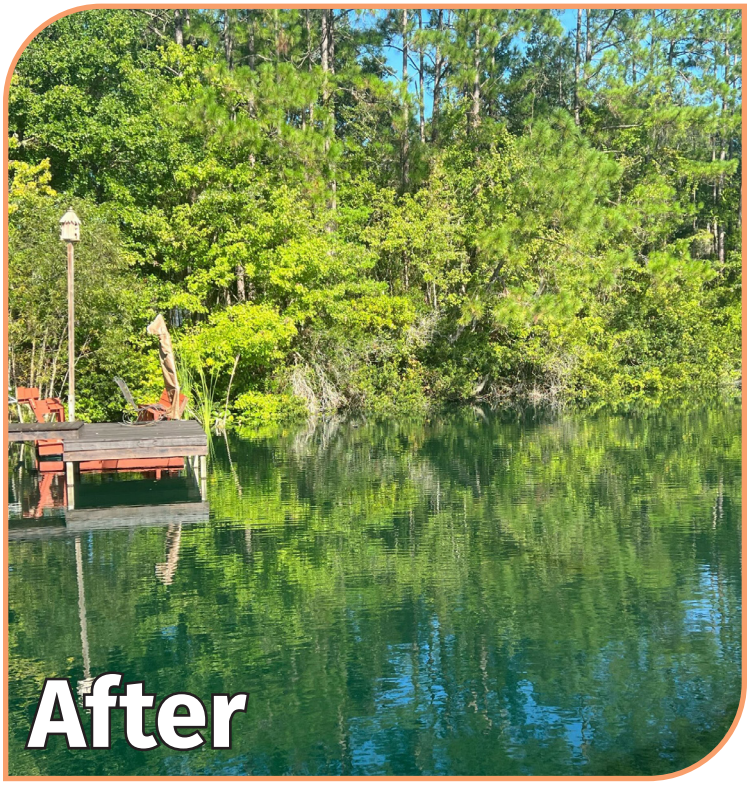
- 2.5 gallon jug
- 55 gallon drum
- 275 gallon tote

FOR WATER COLUMN NUTRIENTS & CLARITY

Mildly Eutrophic *(30 – 50 µg/L Phosphorus 4-3 ft. Secchi)*	**Eutrophic** *(50 – 100 µg/L Phosphorus 3-2 ft. Secchi)*	**Hypereutrophic** *(>100 µg/L Phosphorus <2 ft. Secchi)*
.2-.6 gal / ac. ft	.6-.8 gal / ac. ft	>1.2 gal / ac. ft

FOR SEDIMENT NUTRIENT REMOVAL

Mildly Eutrophic *250 mg/kg sediment P*	**Eutrophic** *550 mg/kg sediment P*	**Hypereutrophic** *750 mg/kg sediment P*
50 gal per acre	100 gal per acre	140 gal per acre



Professional Tip

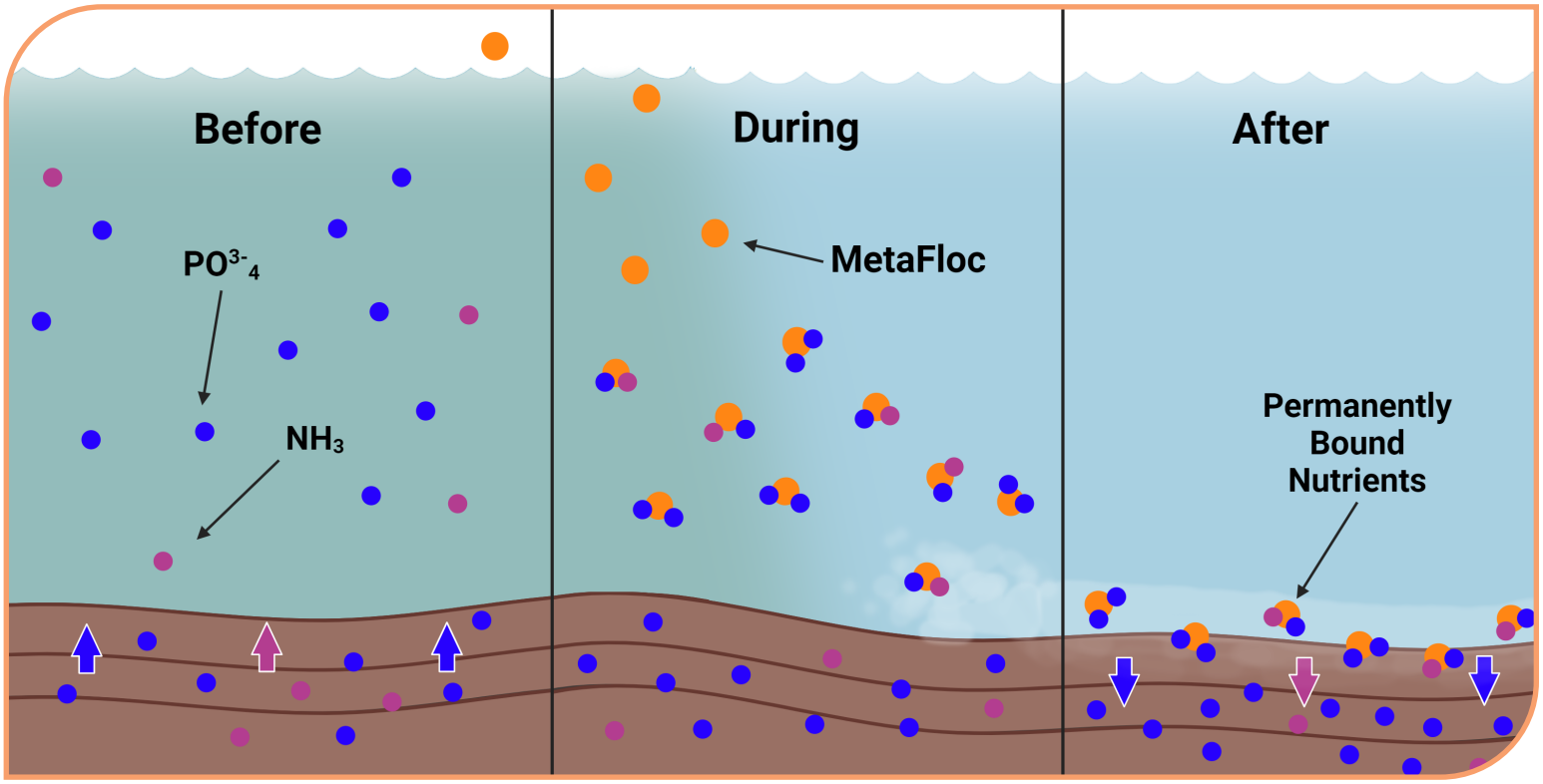
MetaFloc works great for immediately removing nutrients from the water column or blanketing the sediments to prevent nutrient release.

888.757.9575 | www.NaturalLake.com | orders@NaturalLake.com

The Science Behind It

Eutrophication is when a lake receives excess nutrients (phosphorus and nitrogen) from the watershed and from deposited sediments, called internal nutrient loading. These excess nutrients lead to poor water clarity, harmful algal blooms (HABs), low oxygen levels, and an imbalanced food web, stunting a lake's fishery. Nutrients need to be maintained in lower amounts with good water clarity to promote a naturally balanced ecosystem where aquatic life thrives, and fish growth is optimal.

MetaFloc completely reverses eutrophication and lake aging by removing excess nutrients and turbidity. This one-of-a-kind proprietary formula of select bacterial cultures, flocculant, and phosphorus binders works in synergy to provide a complete restoration solution that permanently binds phosphorus, reduces nitrogen, and improves clarity.



P-INACTIVATION

Sediment P inactivation is the process of inactivating or changing the P fraction(s) into forms that cannot be re-released for algae uptake. Cost, toxicity, specific gravity, P binding efficacy, and the P fraction that the product will address should be evaluated in the selection process. MetaFloc is not toxic to aquatic life and will address all iron bound phosphorus while helping break down and inactivate the organic-bound P. All P-inactivation products have zero ongoing maintenance costs and are often less expensive than the above-mentioned approaches. However, these products do not solve any other oxygen-related issue, and repeat applications are necessary once new material has settled on top of the capping layer.