

*Did you know that a micro and macroscopic battle
is going on in your lake or pond between the Algae?*

***Is Algae a friend or foe
when a beneficial productive and buffered ecosystem is your goal?***

If you learn more about Algae you will find that the answer is both!



ALGAE, FRIEND OR FOE?

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With excerpts from The Water Weeds and Algae Handbook

Algae are primitive plants closely related to bacteria and fungi. They exhibit no true leaves, stems or root systems and reproduce by means of spores, cell division or fragmentation. At least 17,400 species of algae have been identified and thousands more probably exist.

Over millions of years these organisms have adapted to changing diverse habitats and exhibit a wide range of characteristics. They can be found in many places from hot springs to glaciers, fresh water to salt water and sandy beaches to rice paddies. In the aquatic environment; they are the first plants to show up and usually the last to exit with the water. As a result, algae build the base of the *Food Chain* in the aquatic world and are the key to maintaining balance and productivity. This balance is different for every water body and water quality. We know now that algae are a very important part of the aquatic community; but how do you label friend or foe?

First step is to identify what organisms live in your lake or pond. For simplicity sake, algae can be divided into three basic categories: Planktonic, Filamentous and Attached Plant-Like forms.

Planktonic Algae

Planktonic algae are often suspended at different depths in the water; many times in the upper 4 to 6 feet. At high densities, their presence will cause the water to appear pea soup green or tan to brown. Many species are usually friends; seasonal populations of diatoms, single-celled Green Algae and Blue Green Algae provide oxygen and are important food sources to fuel the food chain.

Planktonic algae species usually thought to be friends; can become foe, when the battle shifts. Shifting can be caused by multiple factors, sometimes by the algae itself (to rule its world, if you will). Often in mid to late summer, this shift or *bloom* results in high concentrations of algae. When the water color changes, often there are thousands of algal cells in one milliliter. And often after the bloom, comes the crash. A crash may result in a summer fish kill due to oxygen depletion. Algae species must often be identified by microscope, and depending on the species, your algae may be toxic to livestock, wildlife or even man. Some can produce taste and odor compounds and release them into the water.



Filamentous Algae

Often called “String Algae” or “Moss”, filamentous algae form dense mats that start at the bottom edges of a water body. As the mats form they produce oxygen that buoys the algal colony to the surface. The buoy effect can result in the visual appearance that the algae grew overnight. The individual filaments that make up the colony; are cells joined end to end which give a thread like appearance. The texture of these growths may be slimy, cottony or coarse like steel wool. Some forms can be identified with the naked eye, others you need a microscope.



In low densities many forms of filamentous algae have little adverse effect on the ecosystem balance in a lake or pond; they can produce oxygen and provide a food source for aquatic organisms. This form of algae, as many management professionals know; can quickly bloom into foe if not managed before bloom conditions exist. When extensive mats form and are not proactively managed; they shade out beneficial aquatic flowering plants and algae. The dying mats can deplete oxygen when they die and degrade. Dense filaments have little value on providing habitat for fish. The commonly named “water net” and “Steel Wool” algae may require intensive management techniques.

Attached “Plant-Like” Forms

These advanced forms of algae, which are green to yellow green in appearance, are often mistaken for higher flowering plants. A good way to help identify them is by the musky odor and the gritty, sandpaper-like texture resulting from the calcium deposits on the surface. Leaf-like structures are whorled around the stem. This form of algae when it grows close to the bottom can produce beneficial oxygen and help filter and clear the water. As with filamentous algae, attached bottom-growing forms can form dense growths and have similar adverse effects; switching from friend to foe. This is especially true for the invasive plant in this category “Starry Stonewort”.



Friend or Foe?, The answer is both

Algae are an important component of all aquatic ecosystems. When balance shifts to bloom conditions many adverse effects can result, it then becomes a foe. The good news is tools are available to selectively manage blooms before they have these adverse effects. Algaecides are one of the most common tools to target the foe without eliminating the friends. Lake and pond managers with experience and skill in identification use specific algaecide formulations and rates to match the form and density of the bloom. Early identification and proactive management will reduce the amount of product needed and maximize results. Multiple tools including aeration, biological augmentation and nutrient reduction are often employed to assist in changing optimal conditions when blooms happen. Multiple techniques are often required to recover from blooms effects on ecosystems.