

How does LLMO Work? AWT deals with stressed aquatic environments by providing/replacing the bacterial populations that naturally maintain the nutrient balance and cycling in aquatic systems. The bacterial populations contained in LLMO (Live Liquid Micro-organisms) are all natural and are regularly applied to stressed aquatic systems in order to replace, or boost their potential to maintain a healthy balance.

What are Stressed Aquatic Systems? There are all kinds of events and activities that can upset water quality and cause stress to aquatic environments. The signs of stress displayed in these aquatic systems often include imbalances in aquatic life, unpleasant smells and odors, and a reduction in the aesthetic qualities which we most desire to experience when being on a water body. With regards to small lakes systems such as storm water retention ponds, farm dugouts, golf course ponds and community lakes, the most frequent problems experienced are associated with algae and vegetation. Overgrowth of either of these aquatic components can quickly lead to some rather foul odors being emitted from the water, inability to swim or carry on any aquatic activities. In the case of algae this is often referred to as a bloom.

What is an algal bloom? An algal bloom is a rapid increase in the number of algal cells such that the algae dominate the aquatic system.

What causes an algal bloom? This is often not a simple problem to answer. Aquatic systems are very dynamic so of course, it is a little more complicated than just getting sunlight and nutrients. Winds and currents can physically concentrate or disperse algal cells, and many algal species thrive under only certain temperatures and within a narrow range of water chemistry. Also, for algae to bloom successfully, there must be a limited number of grazers in the area. Grazers are the aquatic organisms that feed off of the algae, organisms as large as the grass carp or as small as zooplankton. After all, if there were enough grazers to keep the algal population under control, there wouldn't be a bloom. With regards to the AWT product LLMO, the bacterial species applied compete with the algae populations for the available nutrients, essentially making it difficult for the algae to continue its prolific growth and reproduction. LLMO also begins to decompose the buildup of organic matter on the bottom, which often acts as an internal source of nutrients for these algae. These are the first steps in regaining the aquatic equilibrium and integrity which make healthy aquatic systems so enjoyable to experience.

Who are the Main Algal Culprits? There are many different kinds and species of algae, but for simplicity's sake, we can group some of the most common ones into scum forming, mat forming, attached and/or suspended. Actually some algae can be of more than one type depending on the species or intensity of growth (eg. Some suspended algae can form scums on the water surface and some attached algae can detach and become floating mats).

The following images of algae are some of the most common examples of the problem algae encountered in lakes and ponds.

Suspended and/or Scum Forming

Anacystis

Aphanizomenon

Microcystis

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Anabaena

Filamentous and/or Mat Forming

Cladophora

Oscillatoria

Spirogyra