Archive for the 'Pond Algae Management' Category

"SPRING SHOWERS BRING MAY FLOWERS—AS WELL AS ALGAE BLOOMS!"

Tuesday, May 19th, 2009

Although that broad statement may not be entirely accurate, the same natural forces which are vital to the emergence of all forms of plant growth every Spring also contribute to the growth of algae.

As has been described in earlier Charles Aquatics' newsletters in our corporate WebSite (to which the reader is referred) algae and probably its most undesirable manifestation as an *algae bloom* occurs in many forms. Since the management of aquatic algae growth is of primary interest to fresh waterway owners, the breezes of Spring which spread the all-too-familiar pine pollen also contribute to the wide and often indiscriminate distribution of "roaming" forms of algae—another factor which adds to the difficulty of controlling the spread of algae.

The growth and proliferation of algae are also encouraged by nutrients primarily consisting of nitrogen and phosphorus which are essential elements to algae growth. Since those nutrients are prevalent in many waterways, the management of algae growth is primarily aimed at the control of those nutrients. Waterway owners can provide a degree of algae growth control by limiting the amount of those nutrients added to waterways. Runoff of fertilizers used for landscaping adjacent ponds is a major source of nitrogen and the addition of residential wastewater laden with household detergents provides phosphorus to waterways.

Algae, a singularly unique form of aquatic plant life, range in size from single cell microscopic forms to multicellular types to the more complicated forms which resemble submersed plants. Algae can also be further divided into (1) the planktonic types, which are the simplest forms and are made up of single cells or small colonies of algae cells; (2) the more complicated filamentous types which consist of chains of algae cells joined together to form thread-like structures and which can attach to waterway sediments where unsightly floating mats may develop; and (3) the macrophytic algae types, the most complex of the aquatic algae, of which some have been confused with aquatic plants since they develop stems and root structures in waterway sediments.

Although pond and lake owners are often preoccupied with some of the negative features of algae growth in waterways (and especially by the familiar eyesore, the "algae bloom"- defined as a rapid, uncontrolled –and frequently harmful–overgrowth of algae), algae like many other aquatic plant life forms provide vital oxygenation to and a reduction in the carbon dioxide content of waterways, as a function of algae life processes. Some algae rid waterways of undesirable nutrients and are also a source of food to many forms of aquatic animal life.

Aquatic managers can also provide a degree of management of algae growth with the use of professionally applied amounts of aquatic chemicals or algaecides specifically formulated to control algae. Among the more cost effective cell toxic algaecides are the liquid and granular copper products (primarily copper sulfate) and the contact acting liquid and granular endothall

products. All chemical algaecide applications must be carefully "customized" to the type algae targeted as well as to the amounts of algaecide applied since large amounts of dead and decomposing algae cells can severely deplete waterway oxygen levels essential for fish and other aquatic life form's survival.

Since sunlight is another essential for algae life processes, certain blue dyes (although not strictly classified as algaecides) have been introduced into deeper waterways with some degree of success to limit algae growth. Another chemical means of algae management is with the use of aluminum sulfate (also not classified as an algaecide) which precipitates phosphorous, one of the listed factors essential for algae growth.

Physical or mechanical removal of algae remains a technique of limited effectiveness because of its relatively high cost and since it is usually limited to the collection and removal of already dead, unsightly algae mats floating on the surface of waterways.

Genetically sterilized aquatic weed eating triploid grass carp have been shown to feed on mat forming algae as have tilapia which are also somewhat effective in algae control and management. Another more "environmentally and esthetically" friendly method of physically managing algae growth is by the installation of mechanical aerators. These bubble producing aeration devices, marketed by Charles Aquatics, Inc., increase oxygenation levels of waterways thereby improving fish habitat and aid in preventing the release of certain forms of phosphorus essential for algae growth.

Another recently developed, environmentally "friendly," and very effective physical method of managing all forms of algae is with the installation of an electrically powered sonic wave producing device into algae infested waterways. LG Sonic algae control units, sold by Charles Aquatics, Inc., operate "24/7" for algae management, are cost effective, have very low energy consumption, require minimal maintenance, provide major reductions in the need for algaecides, and can be energized by solar power. The LG Sonic device has been successfully used to manage algae growth in the Jacksonville area as well as in many other parts of the world.

Although the control of algae and algae blooms can be challenging, Charles Aquatics, Inc. can provide the means to meet all your aquatic management needs.

Posted in Pond Algae Management | No Comments »

ENVIRONMENTALLY "FRIENDLY" CONTROL OF ALGAE

Tuesday, August 12th, 2008

WITH THE LG SONICR ALGAE CONTROL UNIT

Since algae are found worldwide in both fresh and salt water as well as on land, control of or perhaps a more fitting term, "management of algae growth" continues to be a vexing problem for waterway owners who want their ponds, swimming pools and lakes to be pristine and free of unsightly surface and subsurface algae.

Since aquatic algae exist in many forms ranging from single cell microorganisms to multicellular, filamentous mat forming types to more complicated macrophytic types (of which some of the latter are even beneficial to the underwater environment), many techniques to manage or control algae growth are available.

Before attempts are made to control the growth of the many forms of aquatic algae, waterway owners must understand that despite the reputation of most algae as troublesome eyesores in ponds and lakes, many algae also provide a number of beneficial contributions to waterways. Like most aquatic plants, algae through their life processes employing chlorophyll utilize carbon dioxide from the water and produce oxygen, the element essential to most life forms. In addition many types of algae utilize (and thereby rid) potentially noxious nutrients from waterways; other algae provide food for some animal life.

Probably the most negative aspect of excessive algae growth commonly known as an "algae bloom" which result from a rapid, uncontrolled proliferation of some forms of algae which in turn causes a precipitous depletion of oxygen levels in waterways. Unfavorable outcomes are the ensuing death and decomposition of the "algae bloom" as well as the death of aquatic animal life forms also dependent upon oxygen for survival.

Since sunlight is essential for algae life processes, certain blue dyes have been introduced into waterways with a degree of success in limiting algae growth. Specifically formulated chemicals termed algaecides have provided the main techniques for the management of algae growth. Among the historically more cost effective cell toxic algaecides are the liquid and granular copper products (primarily copper sulfate) and the contact acting liquid and granular endothall products. All chemical algaecide applications must be carefully "customized" to the type algae targeted as well as to the amounts of algaecide applied since dead and decomposing algae cells severely deplete water way oxygen levels essential for fish and other aquatic life form's survival. Another chemical means of algae management is with the use of aluminum sulfate (not classified as an algaecide) which precipitates phosphorous, an element found in waterways which is essential for algae growth.

Physical or mechanical removal of algae remains a technique of limited effectiveness because of its high cost and since it is usually limited to the collection and removal of already dead algae mats floating on the surface of waterways.

More recent research into biological techniques to manage algae growth has centered upon the manipulation and / or reduction of nutrients found in waters (especially the nutrients phosphorous and nitrogen which are essential for algae growth). Young genetically sterilized aquatic weed eating triploid grass carp have also been shown to feed on mat forming algae as have tilapia which are somewhat effective in algae control and management,

While the general public is probably more familiar with the employment of ultrasound instruments in medicine, ultrasonics, a relatively new physical science which arose from the development of echo ranging sound / "SONAR" devices used to locate submarines in World Wars I and II, has also been successfully adapted to the field of algae management. Recent biological research has led to the findings that complex patterns of underwater ultrasonic

vibrations (sound waves beyond human and animal perception and having no harmful effect on humans, animals or plant life other than most forms of algae) can cause the death of many types of algae. The mechanism of destruction of algae cells is by ultrasonic vibrations causing vacuoles within algae cells to tear apart resulting in algae cell death. The ultrasonic vibrations generated by a household 120 volt powered transducer which can travel up to 150 meters are especially effective against "roaming" air and rain transported algae and blue-green / cyanobacteria forms.

Water proof transducers of the LG Sonic algae control units marketed by Charles Aquatics, Inc. were designed and created by KLG Sound, the device's manufacturer, to create resonating sound waves at the optimum frequency to cause alage death. The LG Sonic algae control device's family is made up of a number of models for installation and for applications in lakes and ponds, irrigation reservoirs, swimming pools, drinking water storage impoundments, water works cooling towers, and waste water treatment plants.

LG Sonic algae control units, all of which operate "24/7" for algae management, are cost effective, are environmentally friendly, have very low energy consumption, require minimal maintenance, provide major reductions in the need for algaecides, and can be energized by solar power.

Charles Aquatics, Inc. can provide clients current color brochures and complete information on the cost, as well as the full range of applications of the LG Sonic algae control units upon request at Tool Free 1-866-990-0044.

Tags: Environmentally Friendly
Posted in Environmentally Friendly, Pond Algae Management, Pond Weed Management | No Comments »

ALGAE, ANOTHER AQUATIC ENIGMA

Monday, June 23rd, 2008

What are algae? The term "algae" encompasses a wide range of plant life forms of which some grow on land (terrestrial forms which are found in soil, on trees and even on exposed rocks) and some grow in water. Of the latter some algae are marine forms (saltwater / oceanic types which include minute plankton to huge seaweed masses) and some are freshwater forms. Growth of algae appears in many colors from the common green form to yellow-green, blue-green, brown, black, and even red. Algae may thrive in ponds, lakes and municipal reservoirs, especially where water flows are minimal or quiescent. Since most of us are more familiar with the freshwater forms of algae which are commonly known as pond scum or simply as slime, this article will confine itself to a discussion of the still broad spectrum of freshwater aquatic algae, some of its causes for g growth, and probably most importantly to waterway owners: a description of what can be done to control the growth of algae in a subsequent newsletter?

Aquatic algae range from single cell microscopic forms to multi-cellular forms and to the more complicated forms which resemble submersed plants. Many authorities classify algae into (1) the planktonic types, which are the simplest forms and are made up of single cells or small colonies of algae cells; (2) the more complicated filamentous types which consist of chains of algae cells joined together to form thread-like structures and which can attach to waterway sediments where unsightly floating mats may develop; and (3) the macrophytic algae types, the most complex of the aquatic algae, of which some have been confused with aquatic plants since they develop stems and root structures in waterway sediments. Of the many types of algae, the macrophytic Chara and Nitella forms may provide a favorable submersed environment measures to control these algae forms should be tempered with the possible risk of altering the underwater environment.

It should be emphasized that while mankind and especially waterway owners may view all forms of algae (similar to noxious aquatic weeds) as troublesome, as unappealing eyesores, and potentially toxic to other life forms, algae nevertheless provide a number of otherwise beneficial and significant contributions to waterways. In common with most plant forms, aquatic algae's living processes produce oxygen and utilize carbon dioxide during daylight hours (a process which is "reversed" at night); many types of algae utilize nutrients from within and thereby rid them from waterways; and algae provide food for many forms of animal life.

The negative aspects of excessive algae growth, often referred to by the term algae blooms (primarily attributed to a rapid, uncontrolled proliferation and often harmful overgrowth of both the planktonic and filamentous forms) include the depletion of aquatic oxygen levels in waterways when algae die and decompose. Decreased oxygen levels are detrimental to the survival of other aquatic plant and animal life forms. Some forms of blue-green algae are toxic to animals which drink algae contaminated water; these type algae can also cause public drinking water supplies to become almost non-potable.

Summer in Florida brings Daylight Savings Time along with all the factors required for algae growth and for damaging harmful algae blooms: increased sunlight essential for algae's photosynthetic life processes; longer days; increased temperatures; and sporadic rainfall. With all those conditions currently in existence, it is almost inevitable for increased algae growth and the potential for harmful algae blooms to occur.

As a result of the aging changes of waterways in conjunction with the possible detrimental effects of excessive algae growth and their decomposition products, those water bodies undergo a recently described process known as eutrophication-a unique process which may present difficult problems for many waterway owners and managers to solve.

Algae exist worldwide in all marine and fresh waters and therefore cannot be totally eliminated from those natural water bodies. To illustrate the adaptability of those prolific plants to a broad range of environmental factors, algae have been found in the boiling temperatures of hot springs as well is in the near freezing waters of the Antarctic. Conditions affecting algae growth are multifold hence many of these need to be considered if any degree of algae control is to be successful. Since algae forms are so diverse and so widespread it may also be more appropriate to consider "algae control" in terms of "algae management."

Since algae require sunlight for their photosynthetic life processes, specially formulated blue dyes have been utilized to limit the growth of mat forming algae in deeper waters.

The more "conventional" management of the growth of algae and of "algae blooms" involves chemical herbicides which have been made specifically to target algae and are appropriately termed algaecides. Among the more effective cell toxic algaecides are the liquid and granular copper products as well as the contact acting liquid and granular endothall. Algaecide usage, however, must be carefully customized to the type of targeted algae and to the amounts applied since dead and decomposing algae cells and mat producing algae deplete oxygen levels vital for fish survival in waterways being treated.

Physical management of algae can be effected by the use of aluminum sulfate (alum) to precipitate phosphorus, a vital element for algae growth. Another more "environmentally and esthetically" friendly method of physically managing algae growth is by the installation of mechanical aerators. These bubble producing aeration devices, marketed by Charles Aquatics, Inc., increase oxygenation levels of waterways thereby improving fish habitat and aid in preventing the release of certain forms of phosphorus essential for algae growth from waterway sediments.

A newer, environmentally "friendly," and very effective physical method of managing all forms of algae is with the installation of an electrically powered sonic wave producing device into algae infested waterways ranging in size from lakes, ponds, municipal reservoirs, and swimming pools. The LG Sonic device, also sold by Charles Aquatics, Inc., has been successfully used to manage algae in the Jacksonville area as well as in many other parts of the world.

Mechanical methods to manage algae growth are of limited effectiveness and have been primarily aimed at the collection of dead algae mats which float to the waterway surface.

Of the biological management methods for algae, the manipulation and/or reduction of nutrients essential for algae growth into waterways are currently considered by authorities as the "environmentally ideal approach" for algae control over the long term. While young triploid grass carp may feed on mat forming algae and tilapia have been found to be somewhat effective in algae control, regulation of the amounts of nutrients, particularly phosphorous and to a lesser degree, nitrogen, introduced into waterways have been shown by extensive research to be the most effective means of algae growth management.

Control of algae and algae blooms can be very difficult and requires an aquatic management service which can best be provided by Charles Aquatics, Inc.

Tags: algae, pond management, weeds
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