

Aquatics **in** Brief

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What YOU May Want to Consider Before Heading to Your Local Nursery!

By **Lee Abernathy, Environmental Scientist**

Have you ever walked through a plant nursery and passed by a display of aquatic plants? These are plants that the nursery recommends putting in your backyard garden pond. While there are many plants offered for sale that are very good for your pond, there are just as many that are not good for your pond. Nurseries often offer many different types of plants, many of which are non-native, invasive aquatic plants that could potentially harm your pond or surrounding waters.



Blue Flag Iris



Cardinal Flower



Egeria



Parrot Feather

Plants that are typically offered include parrot feather, fanwort, egeria, hydrilla, water hyacinth, duckweed, and a host of other invasive plants. In a recent internet search I was even able to find the common reed, *Phragmites australis*, for sale. While many of these plants are appealing to the eye, they can all be detrimental to your pond and very destructive to surrounding wetland habitats and ecosystems. Many of the aquatic plants offered at nurseries can be very invasive, overtake your pond, out-compete native species and cause a loss in plant biodiversity.

A lot of the aquatic plants that are offered at nurseries are meant for aquariums and small garden ponds. What often happens is that people grow tired of these plants and decide that their neighborhood pond or local lake is the best place to dispose of them. As mentioned before these are invasive plants that cause large problems in these waterways. Egeria, for example, can overtake a pond in a single growing season. It can cause a multitude of problems in your pond and will out-compete the native species. Once in the pond it is hard to eliminate and may take several seasons to do so.

Plants such as pickerelweed, cardinal flower, blueflag iris, and blue vervain are great options to put around your pond. These are native plants that are a great, aesthetically pleasing addition

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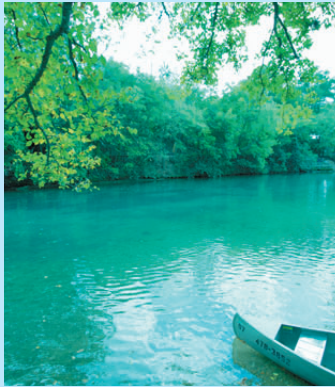


**A Full Service
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My Eyes Glassed Over

By **Ethan Chappell, Aquatic Specialist**

The first time I heard the words Non-point source pollution, NPS, I suffered from a condition known as “MEGO”. In the same vein as “lol” (laughing out loud) and “rofl” (rolling on the floor laughing), “meگو” is text speak for- “my eyes glassed over”. The words do not mesh together well causing a lapse in rational thought that makes most people begin to daydream immediately. As an environmental interpreter I am tasked with explaining the concept of NPS to the general public on a daily basis. What is this nomenclature and where does it come from? Why is it important to discuss it with the general public? Is there anything we can do about it?



Richard Nixon would be the one to bring all of my fellow Texan, Lyndon B. Johnson’s environmental programs under one roof. Nixon did this in 1970 with the creation of the Environmental Protection Agency (E.P.A.). The passing of the Clean Water Act of 1972, based on the previous bills, brought about our modern system of quality standards, Total Maximum Daily Loads (T.M.D.L., the total amount of pollution that can enter a waterway in one day for its designated use. i.e. recreational contact, fishing, agriculture), state lists of impaired water bodies (those places where T.M.D.L. is exceeded), and discharge permits. Strengthened in 1977 it was expanded to combat point source pollution (sources that can be easily identified like factory pipelines draining chemical waste into a river) and to help protect wetlands. The 1987 amendments to the Clean Water Act called for states to adopt volunteer based programs to fight non-point source pollution (Pollution that comes from runoff over feedlots, parking lots, storm sewers, and areas not as easily visible as the factory pipeline).

The federal government has very clear rules in place to combat obvious polluters. A pipe line dumping industrial waste into a river is a source you can point at, hence the term, and it can be regulated accordingly. In the past, these point sources accounted for some 80% of the pollution in our waterways. Under the current system of regulation these occurrences have become the minority rather than the majority. Why then is the Chesapeake Bay area still facing major pollution concerns? How does a government regulate a pollution that it can not point to? Attacking business and corporations is easy, but now we face impaired or polluted water bodies with no single

source to blame. Cleaning up industry standards was not enough. The EPA is now charged with cleaning up the impact of the general public. NPS is the accumulated effect of all of our individual cultural practices. Everything we put on or in the ground gets into our water. Collectively, we are adding all manner of nutrients, chemicals, and waste products to the water system that create a nasty cocktail.

So how does a federal agency go about changing cultural practices? Short of sending out water police to issue tickets for over fertilizing your lawn or causing erosion, one cost effective solution to the pollution is education. An informed public can make better decisions about what they do in their own backyard and in turn reduce the impact of the cocktail. In a culture where if a little is good, more is better, this could go a long way toward changing things. We all want that perfect lawn. If I add a little more fertilizer this year I can have greener grass than Mr. Jones. The truth is there is only so much fertilizer the lawn can use. The rest, and your money, washes away to the watershed where it fuels the growth of algae and the nuisance aquatic species that plague our waterways. While lawn fertilizer is certainly not the only problem, it provides an example of the holistic picture in a clear cost versus benefit scenario. Truly an ounce of prevention equals a pound of cure and in the current economy cures don’t come cheap.

It seems to all come down to economics. In my experience, when someone starts talking about my wallet, they get my attention. Now, more than ever this is the case. Pollution is expensive. We buy the materials that cause it, pay to create it, and then we pay to clean it up. In the long term, our children will be paying in terms of both money and lost natural resources. There are basically two things we as individuals can do... we can cover our heads and run around with “Chicken Little” or begin to save ourselves money and time by learning about sound practices that provide cost effective solutions. The most positive message with regard to this whole mess is that it is not too late. The sky, as it were, is not falling. We can make simple changes and fix our mistakes: There is time. I urge you to resist the pull to daydream in the face of ridiculous labels and confusing jargon. Instead of grocery lists and day planners imagine the money you can save and the productivity that can come from a bit of sound-minded conservation. ■

What YOU May Want to Consider *Continued from cover*

to your pond. With the addition of these beneficial aquatic plants, and other similar ones, you will achieve the aesthetic improvements you desire while preventing the destruction of your pond and any nearby wetlands or waterways.

Be aware that not everything your local nursery sells is the best

plant for you, and in an aquatic system, some of those plants can be the worst thing for you. Due to the vulnerability of aquatic habitats, please contact your lake management professional today for a list of beneficial plants that can add the most value to your pond. ■

Making Peace with Canada Geese

By **Shannon Junior, Aquatic Ecologist**

As a lake manager, I understand the aesthetic and ecological devastation that Canada geese can cause to our clients' properties. They denude the landscape of vegetation, which can be costly and unsightly. They also leave large amounts of excrement in the areas they inhabit, which impairs enjoyment of common areas and also causes water quality issues for nearby ponds and lakes.

However, as an ecologist and bird enthusiast, I am also sympathetic to the plight of these elegant birds. In the late 1800's and early 1900's, overhunting and habitat loss caused a severe decline in their numbers. And while improved game laws and preservation programs have allowed them to recover throughout most of their native range, they are more often considered pests and "rats with wings" than beautiful wildlife.

Canada geese are a naturally migratory species. They generally spend their summers in the North where they breed and raise their young, and migrate southward during the harsh winters to a milder climate. During the first half of the 20th century, migratory Canada geese were frequently captured and detained in the Eastern United States by wing clipping or leg weights. These new "residents" were utilized as live decoys to attract other geese into ponds and wetlands for market hunting purposes. Since geese are biologically imprinted to nest in the same area where they are born, the descendents of these captive geese do not migrate back to Canada to breed and nest. And once their goslings are born, the protective parent geese will not leave their young. They then molt in June, and are temporarily unable to fly until their flight feathers grow back in August. The result is that many Canada Geese have become non-migratory, and are taking up permanent residence in the Chesapeake Bay and James River areas. Humans have further compounded the resident goose overpopulation problem by providing an abundance of predator-free man-made ponds and lakes with manicured shorelines, which are extremely attractive to the geese.

So, what do we do about the geese? Can we find a way to allow them to live peacefully on the fringe of our communities with minimal human conflict? I feel hopeful that we can. I recently attended a seminar called "Dealing with Geese in the Built Environment" presented by M. David Feld, the National Program Director of GeesePeace (www.geesepeace.org). The GeesePeace program utilizes a comprehensive and humane approach to goose control that includes population stabilization, site aversion, and public education. I was so impressed with Mr. Feld and the GeesePeace program that we are incorporating it into Virginia Lake Management's scope of coordinated goose control services during the 2010 season.

The success of the program hinges on a phenomenon called "molt migration." It has been found that resident Canada geese without goslings will leave their imprinted nesting areas. By preventing the birth of goslings, we may be able to encourage many Canada geese to migrate to alternative molting grounds

during the summer months. Some will fly to rural farm ponds or wildlife refuges where they do not come into conflict with humans. Still others have been tracked all the way to the abundant waters and grasslands of Canada's James Bay.

In order to prevent the birth of goslings, the immature eggs are slathered with a thin coating of corn oil in the early stages of development, and then returned to the nest so the mother goose does not lay more eggs. The oil prevents vapor and gas exchange through the permeable shell shutting down the biological processes. A test is performed prior to oiling to ensure that the egg is in the early stage of incubation. The

adult goose continues to sit on the nest, but eventually abandons it when the eggs fail to hatch. If the mother goose does not abandon her nest the nest is broken up and the dormant eggs are buried.

Site aversion begins in mid May. Various combinations of harassment, repellents, landscaping, no-feeding programs, and other strategies are utilized to reduce the attractiveness of our local ponds and to persuade the geese to participate in a molt migration, possibly joining their migratory cousins in Canada. Since every community is different, the specific strategies will vary between properties. But, the overall objective is the same: To encourage Canada geese without goslings to leave the program sites by early to mid-June before they molt so that we can enjoy our ponds and lakes during the spring, summer and early fall.

Every GeesePeace program begins with community partnerships and education. Late March thru April is when nesting occurs, so please contact Virginia Lake Management as soon as possible if you are interested in learning how we can help establish a GeesePeace program for your community. ■



Nutrient Knowledge:

Phosphorus

By **David Ellison, Aquatic Biologist**

Nutrient loading is a term often used when discussing managing your pond and keeping it healthy. When we describe nutrient levels to customers, they often want to know what nutrients we are referring to and the role nutrients play in maintaining a healthy pond. One major nutrient that influences the overall health of a lake or pond is phosphorus.

Phosphorus is found in organic (plant or animal) or inorganic (not plant or animal) forms in waters. Organic phosphorus is found in aquatic environments by animal waste and other biological processes. Inorganic phosphorus is found in detergents, fertilizers, and industrial waste. Ponds can have phosphorus in the muck layer at the bottom of the pond and it can be released into the water column.

Phosphorus is typically the growth-limiting nutrient; and, if it exists in excessive amounts, large algae blooms and rapid plant growth can occur. Cyanobacteria, or blue-green algae, can be toxic and grows well in bodies of water with high levels of phosphorus. High phosphorus levels and excessive algae and plant growth will lower dissolved oxygen levels. Aerobic (oxygen loving) bacteria will aid in the reduction of nutrient levels in a pond and out-compete algae for the nutrients they want to use for growth. Maintaining adequate levels of dissolved oxygen in your pond will let aerobic bacteria flourish and biological processes occur with ease.

Installation of a submersed aeration system can increase dissolved oxygen levels and aid in reduction of phosphorus. Biological products that contain bacteria will utilize the nutrients algae and plants use for growth and these products are often added to ponds. Eliminating waste and debris from entering the pond, reducing the amount of fertilizer applied and keeping any fertilizer from entering storm drains will lower the amount of phosphorus in the water. A buffer of beneficial plants around the edge of the pond will allow for phosphorus uptake by the plants before the nutrient can enter the water.

The key is prevention. There are many preventive measures, including the ones discussed above, that can significantly lower the amount of algae that grows in your pond and keep it looking good throughout the season. ■

My Pond is Bleeding!

By **Greg Blackham, Aquatic Specialist**

It's late August and it's hot. You look out the window towards the pond and are immediately baffled. The pond is red! Your instincts tell you this cannot be good. If you have seen this happen to your pond before you know it will eventually go away, but in the meantime you wonder if it is harmful and if you should report it to someone.

The majority of reddish algal blooms you will see on a freshwater or storm water pond are of the planktonic variety. The planktonic kingdom encompasses a vast array of microscopic plants and animals that generally have no means of self propulsion. They serve as the beginnings of food chains for every ecosystem. There are thousands of species of red pigmented plankton, but the majority of these occur in the ocean and other salt water habitats. Two classifications of planktonic algae: raphidophytes and dinoflagellates have many species that are toxic. The raphidophyte group in particular has a large number of ichthyotoxic species, which kill fish.



The farther your pond is from the coast, the most likely cause of the red color can be attributed to *Euglena*. *Euglena* are microscopic protozoa that have both animal and plant characteristics. *Euglena* have large eyespots that turn red in response to ultraviolet radiation. The eyespots protect *Euglena* from radiation, so on long days of sunlight, it has the most pigment change. Wind, water clarity, and the amount of nutrients also play a huge factor in the production of *Euglena*. Wind and poor light penetration will slow growth down dramatically. If the pond had a green film prior to a stretch of calm, hot, sunny days, *Euglena* is a very likely culprit in the color change. *Euglena* pose no threat to fish, human or any other organism and the eventual shift in weather will reduce the redness.

Planktonic growth is a very good indicator of your pond's health. It is almost a perfect indicator of the amount of nutrients in your pond. If you are seeing a lot of algae, filamentous or planktonic, green or red, your system has far more than its share of nutrients. You already know that most of these nutrients flood the pond at high levels during rain events as the runoff picks up everything in its path. Decomposing leaves and other organic matter will continually release nutrients into the pond for as long as they are present. This can be particularly frustrating, especially since a lot of ponds are designed to catch nutrients in the first place, filtering them out as the water travels onward towards larger systems. Hopefully you've been informed of the practices in minimizing these pollutants from

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Oxygen in Ponds

By David Beasley, Fisheries Biologist

Environmental conditions in ponds are far less stable than the terrestrial environment we know. We take oxygen for granted, but life within ponds can face the depletion of this vital parameter many times throughout life. Sufficient Oxygen levels are required by the majority of aquatic life including fish, invertebrates and bacteria. Unfortunately Oxygen's high demand can cripple entire ecosystems.

Although plants are a primary producer of Oxygen, they are also to blame for oxygen depletion in many ponds. Plants require proper temperature, nutrients and sunlight to grow. Often times these parameters are readily available during warm months, resulting in an abundance of algae, phytoplankton and/or vegetation. As favorable weather conditions allow plant matter to thrive, ponds increasingly become more and more unstable.

DO (dissolved oxygen) is measured in milligrams per liter (mg/l) or parts per million (ppm). Most fish species prefer a DO of 4-5mg/l or higher. As oxygen levels drop below 4 mg/l most fish begin to focus on survival opposed to growth. Gradual fluctuations in available oxygen levels can allow fish to sustain DO levels lower than 4 mg/l, but quick drops can cause immediate death.

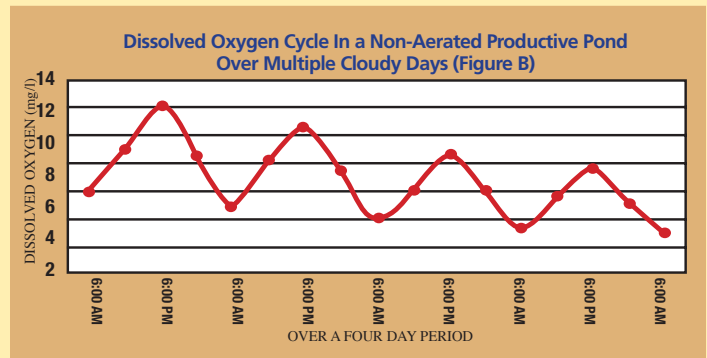
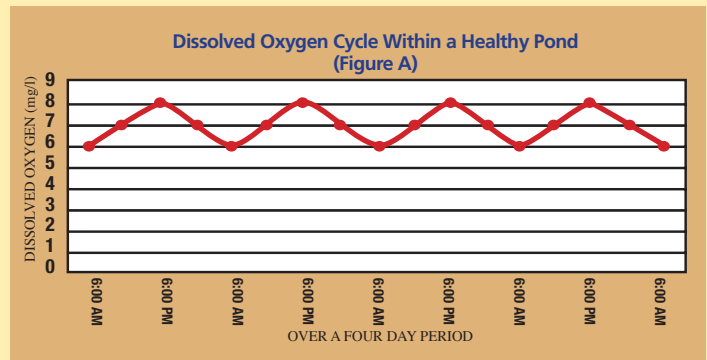
Biological Oxygen Demand (BOD) is the leading cause of fish kills in the Mid Atlantic. Biological Oxygen Demand is the demand for Oxygen used during the process of decomposing organic matter. The most common organics involved with BOD are dying vegetation, leaf litter and dead plankton. In this process, bacteria use Oxygen as they break down the organics.

Chemical Oxygen Demand (COD) is another process in ponds that requires Oxygen. COD is the measure of Oxygen needed to oxidize all compounds in water, both organic and inorganic. In this process, Oxygen is required as different bonds are made between compounds. An example of COD is the process of Nitrification. Nitrification is when toxic Ammonia (waste) is broken down by bacteria into Nitrite, then into less toxic Nitrate. The more productive a pond is, the higher the COD. As productivity in ponds increase, both BOD and COD increase. These processes can lead to DO levels dropping into lethal conditions for fish and other aquatic life.

Routine ups and downs in DO levels are customary in the daily life of ponds. DO is at its lowest just before and during sunrise and at its highest in the afternoon/evening prior to sunset. As photosynthesis occurs Oxygen levels increase throughout the day. Once night falls Photosynthesis stops and plant matter respire (using oxygen). At this point all aquatic life in the pond is using Oxygen, causing DO levels to drop until the next morning when daylight induces the process of photosynthesis. Looking at the Oxygen cycle within pond on paper will help one understand this cycle better. (See Figure A)

As water temperatures increase, pond life becomes more active and requires more Oxygen, but unfortunately warm water holds less DO than cold water. Ponds in the Mid Atlantic are at the highest risk of fish kills when water temperatures reach into the 80's. In the 80's, Oxygen demand is at its highest, but the waters ability to hold Oxygen is at its lowest.

When dealing with ponds at high risk of an Oxygen crash, the crash is often the result of two common BOD scenarios. The first



scenario is when an abrupt environmental change occurs, resulting in the death of most of the plant matter. This creates a large BOD that may not last long, but long enough to remove all of the available DO from the water and kill the fish. The second scenario is when the pond has a dense amount of Phytoplankton, algae or vegetation. Since plant matter needs sunlight to produce Oxygen, cloudy weather causes plants to respire (using oxygen). Several cloudy days back to back in ponds with dense plant matter can result in DO levels dropping lower and lower each day. With plants respiring and not photosynthesizing, Oxygen production can not keep up with the demand and the pond slowly slips into lethal DO levels. (See Figure B). The Oxygen may only dip into lethal levels for 20 minutes in the early morning, but this short period will result in a fish kill. When Oxygen levels are crashing, larger fish are often the first to die due to their higher demand for Oxygen.

When ponds are experiencing fish kills, often times the fish die in phases over the course of several days. The reason why fish kills occur over several days is illustrated in Figure B. To prevent fish kills in ponds under these conditions, replace water within the pond if at all possible and use surface aeration. Often times pumping water from a nearby pond is the best solution teamed with surface aeration. It is most important to pump water during the later parts of the night and early morning when DO levels are likely lethal. Many fish will find the fresh water and ride out the deadly hours of the DO cycle.

Properly managed ponds limit and prevent the BOD and COD from building up to the point where they become lethal. Managing ponds throughout the entire year allows the ecosystem to process organics efficiently. Ecosystems with a healthy balance will not have wide swings in the oxygen levels but will have a stable DO level with little fluctuation as seen in Figure A. When it comes to fish production, fish will not grow when they are trying to survive poor Oxygen levels. Keeping water conditions healthy will pay off in many ways for you and the environment, especially if you're trying to produce larger fish. ■

When Accuracy Matters: GPS Lake Mapping

GPS Bathymetric Lake Mapping by Virginia Lake Management and The Mapping Network

By **Tyler VanMeeteren, Director of Mapping Operations for The Mapping Network**

A lake or pond seems serene and effortless to maintain, but under the surface is a dynamic organism requiring expert knowledge to produce a perfect balance. To fully enjoy your lake or pond it is essential to know the facts for making the best management decisions: exact acreage, depths, chemistry, etc. Armed with this knowledge you will be able to properly place structure, deliver appropriate stocking densities, select the correct fish species, apply the right amount of weed control product, and of course gain a better idea where those bass may be hiding! An accurate GPS lake map provides the information needed to make the most of your aquatic resource.

A Nationwide Team of GPS and Lake Management Experts

The Mapping Network is a nationwide group of professionals providing the highest quality and most affordable bathymetric and asset mapping products on the market today. A local expert aquatic service provider understands the dynamics of a lake to determine the best transect paths to precisely model the lake's bathymetry. The

Fusing the latest technology trends in GIS and GPS mapping along with highly trained graphical professionals, our bathymetric map of your body of water will be amazingly accurate and also aesthetically enjoyable.

Mapping Network has partners located throughout the Country working directly with recreational property owners, lake associations, golf courses, marinas, developers, governmental organizations, and fishing clubs. Virginia Lake Management Company is the certified Lake Mapping Partner in the region containing Virginia, North Carolina, Maryland, Delaware, and Pennsylvania. Fusing the latest technology trends in GIS and GPS mapping along with highly trained graphical professionals, our bathymetric map of your body of water will be amazingly accurate and also aesthetically enjoyable.

On Site GPS Data Collection

Mapping methods developed by The Mapping Network combine the most accurate GPS mapping and Sonar technology. Our mapping system collects a 3-dimensional point every two seconds over any body of water with sub-foot accurate location equipment and depth

accuracies of up to 1/10th of a foot. Once the data is collected in the field it is processed with customized software programs to craft the most advanced bathymetric maps available today.

Data Output Options

Contour Map: With unmatched detail, a contour map custom-created by Virginia Lake Management Company and The Mapping Network will provide you with the information needed to fully understand volume and the characteristics of your lake or pond.

3D Bathymetric Map: A 3D bathymetric map created using The Mapping Network technology provides the ability to easily visualize the environment beneath the water line.

Sedimentation Map: Sediment buildup in lakes and ponds is inevitable and the costs associated with removing this material are extensive. Knowing where pockets of high sedimentation are located and the thickness of these deposits allows decision-makers to make educated assessments and plan for the future. Lake maps created by Virginia Lake Management utilizing The Mapping Network technology provide managers/owners the ability to more precisely locate problem areas, estimate sediment volume and accumulation, and monitor sedimentation levels over a given amount of time to determine if dredging is needed.

Printing Options: Each map project is individually produced with attention to detail and excellent customer service. Clients have several options for the final map including hard copies, digital data, .PDFs, and web applications for viewing. Our custom printed maps range from letter size to large format wall maps. We also provide several options for the final printing including standard paper, waterproof tough paper, glossy photo-based paper and lamination. No matter the mapping project, Virginia Lake Management and The Mapping Network provide the expertise to provide you with the final product best suited for your needs.

Virtual Media: Utilizing unmatched detail, a virtual Swim-Through of your lake or pond created utilizing The Mapping Network technology will convey a new way of understanding your resource. These videos provide our clients an amazing 3D visualization of their asset - the ability to reveal this unseen, underwater world.

The Time to Map is Now!

Lakes can be mapped throughout the entire year. An accurate lake map provides the information needed to make the most of your aquatic resource. If you are serious about maintaining a high-quality lake or pond, be sure you have the ability to make the best decisions, get your lake mapped by the professionals with Virginia Lake Management and The Mapping Network. ■

Buffer Species Wanted: Dead or Alive

By **Brian Misener, Fisheries and Wildlife Biologist**

In this article, we will continue our discussion from the last issue about specific species of plants to watch for in your pond's buffer. As a reminder, the "buffer" is the Riparian buffer or vegetated area next to the water that protects the water resources from nonpoint source pollution and provides bank stabilization. The species of plants that we will discuss in this article are beneficial for a number of reasons. Not only are they aesthetically pleasing, but they also help filter out nutrients from ending up in the pond, help stabilize the bank, and they can provide an aquatic and wildlife habitat. Other species may be detrimental to your pond or buffer and should be removed.

Vines are something that you do not want to see in your buffer. These plants will climb to the top of the plants already in the buffer, grow sideways over top of large areas, and then begin to choke out the plants beneath them. One particular common species is *Lonicera japonica*, also known as Japanese Honeysuckle. Almost everyone recalls this scent from their childhood; however, trying to get rid of this plant can leave you with a bad memory.

Shrubs are usually acceptable to leave in your buffer, but some can get out of control and cause problems when they become too large or when they out compete the other plants around them. One such plant is *Rosa multiflora*, otherwise known as Multiflora Rose. This plant can grow upwards of 15 ft. tall and will sprawl out in a wide pattern, displacing other plants in the buffer. Multiflora Rose grows very thick and prickly, making it very hard to enjoy your pond if it is growing in the buffer. Typically, it is best to keep your buffer full of grasses and low growing flowering plants, not trees and shrubs.

What about those plants growing just along the edge of the water? Since sunlight can reach the pond floor around the edges, something will inevitably be able to grow in this area. Therefore, it might as well be a beneficial plant. *Scirpus spp.*, or



Bull Rush



Japanese Honeysuckle



Rosa Multiflora

Bull Rush, is a beneficial plant that grows in water around the edges of ponds. It filters out nutrients that reach the water and provides a great habitat for fish and other species that flourish in this environment.

Hopefully you will find some of this information helpful in understanding your buffer. Feel free to give us a call with further questions, as there are many strategies that can be used to maintain and encourage a healthy buffer. ■

My Pond is Bleeding Continued from page 4

entering your pond, but if not, there is a lot of information out there that can help.

Without taking a microscope to your pond, it will be very difficult to determine if your pond is at risk. The closer you live to the coast, the greater the chance the bloom is toxic, but regardless of that, if the bloom dies off quickly, you are at risk for a fish kill due to oxygen depletion. With adequate aeration, the fish stand a much greater chance of survival, but with a large

enough die off, it may not be enough. Sending a water sample to the lab is a very good idea, but the redness may be gone by the time you get the lab results. At the very least, you will have an idea of what action to take, if any, the next time your pond is red. Since it is so tough to know what to do when your pond turns red, prevention is paramount! Keep the nutrients to a minimum, darken the water, and let the aeration systems run as long as is economical. ■

"Pond"er These Thoughts

Virginia Lake Management wants you to be prepared for the approaching warm weather. With this in mind, we recommend you consider the following tips as you start the spring season:

- During this growth season, limit mowing around your lake or pond to help establish a protective vegetative buffer. This will stabilize the bank and help act as a filter to reduce the amount of nutrient build-up in the water.
- Spring is a great time to "green up" your lawn. Just make sure this doesn't mean "greening up" your lake. Ensure correct fertilizer rates are observed and limit usage in areas directly adjacent to a lake or pond. Avoid pavement and concrete and use products that are low in Nitrogen and Phosphorus.
- As the weather warms, mosquitoes will invade. Ask us about stocking your lake with minnows to naturally and effectively control mosquitoes.
- Thinking about your impact on the environment? Virginia Lake Management has a new line of Environmentally Friendly Products that are safe, effective and easy on your budget. ■

Check Us Out...

Virginia Lake Management will be participating in the following events over the next couple of months. We encourage you to come see us! If you need information on attending any of these events, please call our office.

April 28 – May 1 Community Associations Institute National Conference – Las Vegas, Nevada

May 5 – May 6 Hampton Roads Industrial & Facility Maintenance Show, *Kevin Tucker, Speaker*, Virginia Beach Convention Center, Virginia Beach, VA

May 13 The Pennsylvania and Delaware Valley Chapter of Community Associations Institute Annual Conference and Expo, Citizens Bank Park, Philadelphia, PA

July 29 – August 1 Virginia Leadership Retreat, The Homestead, Hot Springs, VA



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