

BUFFER ZONES: NUTRIENT AND SEDIMENT TRAPS

-Dave Ellison, Virginia Lake Management Company

Keeping some high vegetation around your pond can be extremely beneficial to the water quality. This area is commonly referred to as a buffer zone. Plants in this area take up nutrients from fertilized lawns directly adjacent to the pond, and help filter the nutrient rich rainfall runoff that flows into the pond or lake from the surrounding watershed. Buffer zone vegetation does not need to be excessively high and occasional cutting is a good idea to maintain the aesthetic appeal of the pond. However, too much clearing of the vegetation can cause nutrient loading of the water and lead to future algae blooms.

In addition to acting as a natural filter for runoff, a buffer zone can

also help prevent shoreline erosion. The plants along the shoreline help stabilize the soil and prevent large amounts of sediment from flowing into the pond. Over time the excessive inflow of sediment could greatly reduce the depth of your pond or lake and produce significant problems. The cost to correct these problems through dredging and other similar measures can be quite costly.

Winter is an excellent time to consider cutting back or clearing any unwanted shoreline vegetation. Water temperatures are very low and shoreline growth has ceased for the time being, thus debris that may fall into your pond or lake would have limited adverse effect. However, even in the winter, every

effort should be made to keep cuttings from falling into the pond and sinking to the bottom. This influx of organic matter will result in the potential for future algae blooms as it breaks down and releases utilizable nutrients into the water column. It is these nutrients that are the primary fuel for algae growth.

Buffer zones can go a long way in helping to prevent problems for your pond. The best part of all, establishing these buffer zones around the edge of your pond takes very little effort, requires little maintenance, will likely reduce the costs associated with mowing and trimming along the edge of the pond on a weekly basis, and will produce significant beneficial results for your pond.

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AQUATICS UPDATE

Winter 2008

PLANNING FOR YOUR POND'S FUTURE

-Kevin Tucker, Virginia Lake Management Company

Many homeowners, association managers, and even pond management professionals spend time and resources each year maintaining their storm water retention ponds and dealing with the im-



mediate problems such as algae, nuisance aquatic weeds, poor water quality, etc. It seems that far fewer people allocate time or resources to the future planning and budgeting necessary to deal with potentially more significant issues that might arise with these ponds.

One of the "scariest" and most costly expenses that may ever be faced by a homeowner association is that of dredging. Typically, pond owners are told that they should expect to dredge a pond every 20 years. This rule of thumb is OK, but often not accurate enough to be counted on for budgeting purposes.

Have you started to budget for the cost of dredging? Do you have any idea what it will cost you to dredge when that fateful day arrives? Will your pond need to be dredged in 20 years? Maybe it will only be 10 years or maybe you will do better than average

and your pond will not need to be dredged for 30 years.

The point is, unless you do some research, evaluate the condition of your pond, and start the planning, you will never know the answer to any of these questions.

The good news for all pond owners is there are some simple steps that can be undertaken to begin the planning process.

The most important first step is to perform a bathymetric study of your pond. This is a process by which we use GPS technology combined with depth scanning technology to map the surface of the pond and associated depths of the pond to determine the current bottom contour and depth. This will give you the actual wet storage capacity of your pond at the current time.

Once you have obtained this information, you can then compare this to the original "as built" plans and see how much sediment and debris has accumulated in the pond since original construction. After making this comparison, you can figure what the average yearly sedimentation rate for the pond has been since it was first constructed, and project into the future how much longer you will have before the pond will need to be dredged.

This information is also crucial

to your budgeting process. Once you can quantify the amount of sediment that is in your pond to date and how much is anticipated to accumulate in your pond in the future, you will then be able to obtain exact quotations from qualified dredging contractors for removing this sediment. This will take all of the guess work out of your budgeting process, and help to insure that you are prepared for the future.

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POND BLUES

-Gregory Blackham, Virginia Lake Management Company

Keeping up the appearance of your pond or lake and maintaining a healthy ecological balance can be frustrating at times. Far too often it may seem as if reactive management is being applied to control arising problems. One simple, yet highly productive proactive practice, is controlling the amount of sunlight entering your pond. Lake dye is an extremely cost-efficient way to achieve this goal.



Whether the lake/pond was man-made or created by Mother Nature, there are probably shallow areas somewhere in the body of water, especially around the perimeter. These zones are the most susceptible to algae and aquatic weed growth.

Most plants and algae require sunlight for growth through photosynthesis. In the electromagnetic spectrum, some wavelengths are more valuable than others. The strongest inhibitor of these UV penetrations is the color blue, hence the most common lake dyes used are blue, although black and other colors have been successful under the right conditions. Even if the lake or pond is not particularly shallow, one may be surprised how far down the column of water UV penetration can occur.

The key to implementing this strategy in your lake management program is maintaining a constant UV screen, not just in the spring, when the majority of growth begins. We accomplish this by applying the dye regularly throughout the year, even in the winter months. This also creates a constant color for your lake or pond that is pleasing to the eye year round. Who would have thought the most effective color in the management of sunlight in your lake or pond would look great too!

Finding the correct amount of dye to add initially and in subsequent applications throughout the year can be tricky at first. Generally starting with the manufacturer's recommendations per acre foot are best. From there, track and monitor further applications on a regular basis. If the lake or pond has few or no outflows, less will be needed to maintain a constant color. Also, various shades of blue and black dye can be mixed to achieve just the right color for each individual body of water.

Most dyes registered for aquatic use are rated non-toxic and environmentally friendly. They will not harm fish, birds, mammals, reptiles, or turfgrass. Swimming and irrigation are also safe, during and after dye treatment. If you have any doubts or concerns about the safety of these products, it never hurts to check the product label or place a phone call.

This simple proactive step may save you lots of money on algae and aquatic weed treatments in

the future. Your lake or pond will also have more aesthetic appeal if dyed properly. It isn't the only preventative step to take, but one that could eventually cure your "pond blues".

MISS UNDERSTOOD

-Dustin Kennedy,
Virginia Lake Management Company



BMPs (Best Management Practices) are effective, practical, structural or nonstructural methods which prevent or reduce the movement of sediment, nutrients, pesticides and other pollutants that would run off the terrestrial environment. These are the steps used to keep our down stream water clean. These practices are developed to achieve a balance between water quality and the humans that impact our environment.

A thorough understanding of BMP is very important. This acronym is usually misunderstood. BMP is usually referred to as a pond or lake, but they are only part of the practice. The practice is usually set into motion by the surrounding environment. How are the nutrients being controlled? Is there lots of rain run off, heavy nutrient and sediment loading, or even heavy fertilization? Controlling these issues is the BMP.

MISS UNDERSTOOD

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What are the best practices that can be put into place to control pollutants, fertilizers, and nutrient loading? These can be structures such as ponds, dry-ponds, wetlands, and swales. They also can be non structure methods like picking up your leaves, picking up grass after cutting, and even cleaning up after your pets . All will help in controlling pollutants and excessive fertilizers.

Just remember that ponds and lakes are just part of the system. We as people need to put responsible practices into place. BMP stands for Best Management Practice. What are you doing to be part of the best management practices for your community?

AQUATIC PESTICIDES: MEDICINE FOR YOUR POND

-Kyle Finerfrock, Virginia Lake Management Company

So your pond looks green and scummy with foul odors emitting from it, or maybe your pond is choked out with so many weeds that you can no longer get your boat to your favorite fishing hole. You are witnessing the symptoms of an unhealthy pond and immediate actions need to be taken. When a person is sick, generally they would go to the doctor so he or she can diagnose your sickness and treat you with the proper medicine. Much like you would treat a cold with medicine, there are products designed to control algae and aquatic weeds. The general terms for these products are algaecides and herbicides.

The Environmental Protection Agency (EPA) has registered algaecides and herbicides to be used in aquatic ecosystems. These products

LET'S IMPROVE THE BAY IN 2008

-Randy Bolin, Virginia Lake Management Company



The Chesapeake Bay Foundation measures the state of the Bay each year, "Scoring" the Bay's health based on the best available scientific information.

Since 1998 the Bay has improved each year with a small victory in restoring a balanced ecosystem. But this year, 2007, the Bay's health dropped due to significantly increased levels of phosphorus pollution flowing into the Bay from our rivers and streams.

Recent studies show that the majority of high levels of phosphorus and nutrients flowing into the Bay are a direct result of poor Best Management Practices (BMP). As a result, the Bay will continue to struggle with pollution, loss of habitat, stressed fish, and declining crab and oyster populations.

To restore the health of the nation's largest estuary, we as homeowners, property managers and commercial developers need to be more cognizant and responsible for the part we play within our local communities. Once we are aware of the impact on our most precious resource, our water, we can take the proper steps known and necessary to restore a living, thriving Chesapeake Bay.

can be very effective but must be applied properly. Licensed applicators have been trained to handle and apply pesticides safely. Using pesticides safely means identifying the target species accurately then using appropriate concentrations of the correct product in order to obtain the desired results. Over the years pesticides have developed a negative image to the public eye. Today's pesticides have been heavily tested to ensure a low environmental impact, and if used correctly they can help restore a pond to a healthy state.

Algae and aquatic weeds left to grow uncontrolled can lead to a severe decline in the health of the ponds ecosystem. To return your pond to a healthy state you should consult your lake management specialist to prescribe a treatment for

your "sick" pond.

Something to think about!

Pesticides generally get a bad rap. Unfortunately, in most cases this negative stigma assigned to pesticides is highly undeserved. The vast majority of pesticides go a long way towards improving the quality of our lives, and are environmentally friendly if used properly.

Trivia Question: What known carcinogen is the most widely used pesticide in the world?

Answer: Chlorine (Amongst many other uses, it is found in most of the drinking water in the United States and throughout the developed world. Where would we be without it?)