



The Lily Pad

The Topeka Area Water Garden Society

Published Monthly – February to November

The objective of the society is to encourage a greater appreciation and interest in water gardening and aquatic plants, to disseminate information about those interests and to help our members stimulate the study and culture of water gardens.

Volume 8, Issue 6

August 1, 2005

The O of H₂O

By Randall Tate, Chief Manager, The Water Garden
Reprinted from The Water Garden News 8-05

We all know that our ponds need oxygen in the water, but we may not know how much and how to get it there. A still pond is only able to exchange gasses at the water surface. A still pond will support only a very small fish population.

A pond not only needs to absorb oxygen from the air but it also needs to release carbon dioxide and maybe hydrogen sulfide among other gases. Hydrogen sulfide is produced by anaerobic (without oxygen) bacteria breaking down organic matter in the bottom of the pond. The pond bottom has less oxygen than the upper layers of the pond, especially if you have stone or gravel in the bottom of your pond. Anaerobic bacteria work in the absence of oxygen and causes a septic condition in the bottom of the pond.

When we spray water through a fountain or when we run water through a stream or over a waterfall we are increasing this surface that is exposed to the atmosphere many times. Harmful gasses can be released to the atmosphere and oxygen absorbed very easily.

We want to circulate the water in the deep part of the pond in order to help with the break down of organics therefore providing better water quality. During warm weather draw water from the bottom of the pond to expose it to the atmosphere. When you expose the bottom of the pond to oxygen rich water you will have aerobic (uses oxygen) bacteria breaking down the organics. This will reduce foul odors in the pond, which are caused by anaerobic bacteria action.

Since oxygen is absorbed only through the surface of water it is possible to have too many plants in a pond. If the entire surface is covered with water lilies or other surface plants very little gas exchange can take place unless there is a large fountain or waterfall.

You may think that adding more underwater plants will add oxygen to the water. While underwater plants will help add oxygen to the pond during the daylight it will use up the available oxygen at night the same as other life in the pond. As such, it is possible to have too much anacharis or other underwater plants in a pond. Underwater plants, such as anacharis, are important to the pond but their function is to use up nutrients to starve out the algae.

Monthly Meeting
7:00 p.m., Wed., Aug. 17, 2005
Ward Meade Park

More than you ever wanted to know about Algae
Deb Spencer, Waters Edge, Lawrence

There is a limit to the number of fish that you can keep in a pond. When you exceed this number you start having problem with water quality and fish health.

The hotter the water the less oxygen it can hold. Therefore cold water holds much more oxygen and coupled with the slow respiration of fish in the wintertime you should not need additional aeration in the pond.

If your fish spend a lot of time at the surface sometimes gulping air or you have noxious odors coming from your pond, then you most likely do not have enough circulation. What steps can you take to insure an ample amount of oxygen in the water? We have already mentioned that it may be necessary to remove plants and fish when these become excessive. If your waterfall or fountain is not adding enough circulation then you may want to consider a larger pump. You may also want to consider adding an additional fountain or waterfall. By simply adding a pump with a piece of pipe going up to within a couple of inches of water surface creating a plume you can greatly increase the gas exchange with the water.

In very hot weather a pump failure can lead to a fish kill very quickly. By having a second pump running you greatly decrease the chance of having a major loss of fish. Even if you don't keep it in operation, having a backup pump available in case your main pump fails can save your fish. If your pump fails in hot weather you may only have a few hours if your pond is heavily stocked with fish.

Another option is Microbe-Lift OX. This is a chemical that you can put in your pond that will release oxygen slowly over a few weeks. This is a good product to have on hand during hot weather or just in case your pump should go out unexpectedly.



Bacteria and enzyme products clarified

*By Randall Tate, Chief Manager, The Water Garden
Reprinted from The Water Garden News 8-05*

When one goes to choose a bacteria and enzyme product for their pond they are often bewildered. There are several brands as well as several types within brands to choose from. I am often asked which one to use.

These products are not chemicals; they are an assortment of live organisms (variety of bacteria and enzymes) that work to keep your pond healthier. Since we are dealing with live organisms, results generally take time. I do have customers who can see results over night and I have seen results like this first hand, but usually you can expect from one to four weeks for most ponds. All ponds are different and not everyone will see major changes to their pond. Anytime that you can increase the aeration of the pond water the efficiency of these products multiply.

What can you expect from using these products? Bacteria and enzymes can stop algae growth, reduce organic sludge and help with water clarity. The amount of sludge in the pond can be cut in half. This means that your filters will only need cleaning about half as often. Fish and plants are healthier. Bad odors can be eliminated as well.

Algae growth in the pond is caused by an excess of nutrients, which are released from the dead organic debris (sludge) in the pond. The nutrients are used by the bacteria therefore starving the algae of its food source. When the sludge is broken down carbon dioxide and nitrogen gas are released and escape into the atmosphere.

Okay, I need to use bacteria and enzyme products. Which one do I use? Any of these products can be used singly or together. Most of these products can be used anytime. There are a few that are formulated for a specific task. Microbe-Lift Spring/Summer Cleaner and Microbe-Life Autumn/Winter Prep work in colder water and work on breaking down cellulose, which is what tree leaves are made of. Microbe-Lift TheraP is formulated specifically to promote fish health by helping their immune system. Microbe-Life Ensure is formulated to promote plant health by helping the plants use nutrients more efficiently.

Specific bacteria called nitrifiers break down ammonia and nitrates. These two types of bacteria will colonize a filter naturally but the process can take many weeks or months. They must be stored in a liquid environment and are not in dry forms of bacteria. If you are starting up a new pond or a new filter then you can speed up this process by introducing them to the pond in large numbers. Microbe-Lift PL, Pond Care Bio-Filter Booster and Winston Crystal Clear Nitrifier contain these bacteria.

We have customers who always go for a particular brand because it works for them. Since these products are live organisms they will thrive in some ponds better than others. Choose one and use it on a regular basis and if you don't get the results you want, try another brand the next time. The more types of beneficial bacteria that you have in your pond the better your pond will be.

Personally I use Microbe Lift products fall through spring and switch to Eco Fix and GreenEx through the summer. I get good results this way. Because of pH differences and other water chemistry differences you may find one product works better than another. Once introduced to the pond some of this bacteria should stay but by adding this product on a regular basis you can keep the concentrations of the most beneficial bacteria high and gain the most benefit from the product.

When Good Ponds Go Bad

*by Randall Tate, Chief Manager, The Water Garden
Reprinted from The Water Garden News 6-05*

From feedback that we receive from many of you it seems that a common problem resulting in algae and water quality issues is showing up. We hear frequently "my pond was working great for years and now I am having algae problems." After much discussion we discover that the only significant change to the pond is more fish. By "more fish," we mean more fish weight added to your pond. This can be larger fish especially koi or lots more numbers of fish, usually the case with goldfish.

Besides the fact that "more" fish means more waste added to the pond, fish excrete most of the ammonia that enters the pond through their gills. Ammonia has to be broken down by your biological filter and the result is nitrates, which are used by your plants or the algae (ammonia test kit).

What is the solution? There are a few options for you depending on the severity of the problem. If you are only over populated by a small amount then adding more plants and more frequent use of bacteria and enzyme products may be the answer. Most likely you may need to take more drastic measures. Removing some of the fish is an option but the question is what to do with them. It is not only illegal but also damaging to our environment to release not native fish in natural waterways. One option is to give some fish away.

Two more options are to increase the size of your biological filter or to enlarge or build another pond. Replacing a filter is easy. Just buy a larger filter and plumb it in. If you choose this method remove some of the old filter media and lay this in the new filter to help colonize the new filter with bacteria faster. Enlarging a pond is more work, as you not only have to construct but you also have to tear down. Many people are choosing to add another pond. This time make it larger and avoid some of the mistakes that were made on the first one.

If you want to make a new pond appear to be part of the existing pond then this can be accomplished visually by building the new pond close enough to the old one that you can place a bridge or stream section tying the two together. This can be done in such a way that the two ponds only appear to be connected or you can actually connect the two together so that they function as one pond.

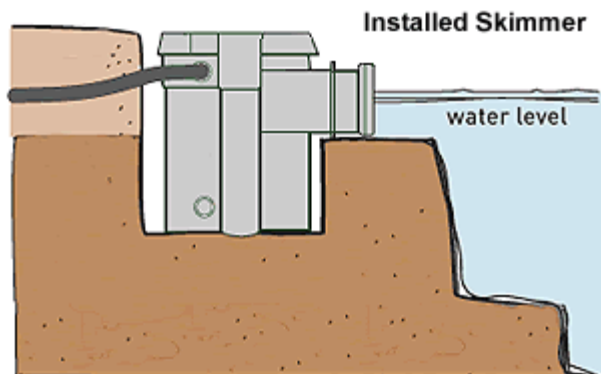
Whatever methods you choose take the time to do the research.

Does my pond need a skimmer

by RANDALL TATE, Chief Manager, The Water Garden
Reprinted The Water Garden News 6-05

Folks new to water gardening sometimes are confused by pond skimmers. I hear "Do all ponds need a skimmer?" and "What exactly does a skimmer do?" Pond skimmers are not essential but they do a lot of things that are beneficial for our ponds.

Some type of pre-filtration is recommended prior to pumping water. One of the two more common methods of doing this is by using an in-pond filter that will either hook up to the inlet of your pump or contain your pump. An in-pond filter that contains the pump also hides the pump but the in-pond filter and the tubing are still visible in the pond. The other method of pre-filtration is by the use of a pond skimmer. Most pond skimmers are installed in the ground outside the pond and there is an opening made through the liner where the water passes through. A pond skimmer will have a floating weir to cause movement of the water at the surface and this will carry floating debris to keep the pond surface clean. The water then passes through a leaf basket that catches any large debris like leaves and twigs. Fiber filter media catches the finer debris before the water enters the pump chamber. If an external pump is hooked up to the skimmer then it pulls water from this chamber before pumping to your biological filter and or waterfall. If you use a submersible pump then it sits in the pump chamber and pushes the water from the skimmer. Since the skimmer, pump, and plumbing are outside the pond you end up with a more aesthetically pleasing pond and one that is easier to maintain.



Review of June and July TAWGS meetings

By Mary Ann Bechtold

June meeting was held at Pat & Dick Rokey's as a social event. We finalized pond assignments.

The July meeting was a Pot Luck. We shared pictures and the Gruver's looked like they were having a great time in Alaska. Comments about the pond tour were shared. The tour for all of the competition went well. The Ensley Garden Project is expanding and we discussed our observations on the project. A person is wanted to coordinate with the park staff to share plants, workdays, etc. More discussion on that at the next meeting. The next meeting is scheduled at Ward Meade Park. Good finger foods were enjoyed by all.

Things to do for the pond in late August

Reprinted from Splash 8-26-01

Summer is nearing its end in some parts of the country, and at this time there are a few things that should be done to make sure the pond goes into winter in good shape:

- Check your fish for injuries, parasites and other problems. Generally, all these things are easier to treat while the water is fairly warm. The best time to give your fish a good "examination" is while they are eating.
- Use a skimmer or fish net to get most of the organic debris out of the bottom of the pond. Things like decomposing leaves can really be harmful to the fish once the weather gets cold, because the process of decomposition uses up valuable oxygen in addition to changing the water chemistry.
- Make sure all equipment needed to over-winter the pond (such as nets to cover it to keep leaves out and predators from stealing your fish and a de-icer to keep an ice free hole) is available and in good condition and working order.
- Check for new arrivals (babies) and be sure the pond is not over-populated. If necessary give some fish to neighbors with ponds or see if a pet or pond store will take the extra ones. The pond is likely to suffer from lack of oxygen at some point during the winter and an over-abundance of fish just compounds the problem.

In Sympathy

Condolences go to Jim Green who recently lost his friend and social secretary, Norma Elliott to cancer.

We are sorry for your loss Jim.

John Mirgon, founder of the Colorado Water Garden Society died July 7 of emphysema at his Denver home. He was 79. John was also instrumental in founding the International Waterlily and Water Gardening Society. John helped many water garden societies get started across the United States and provided informative articles for their newsletters (including the Lilly Pad).

"In my estimation he will be remembered as one of the premier water gardeners of our time," says Joe Tomocik, water gardens curator at the Denver Botanic Gardens. "He found a place working with the nurseries and those in academics."

John will be missed by many water gardeners across the United States. We extend our sympathy to his wife Mary and family.

Topeka Area Water Garden Society
9900 SW K-4 Highway
Topeka, KS 66614

Calendar of Events

August 17	TAWGS monthly meeting
September 21	TAWGS monthly meeting
October 19	TAWGS monthly meeting
November 16	TAWGS Pot Luck Supper

Water Garden Tips

*Do not over-clean your biological filter.
The media in your filter is home for
beneficial bacteria. To clean a filter, all
you need do is lightly rinse the media
(preferably with non-chlorinated water).*

*To prevent a large sludge build-up in your
pond, remove dying foliage from plants
before it has a chance to fall into the
water and decay.*

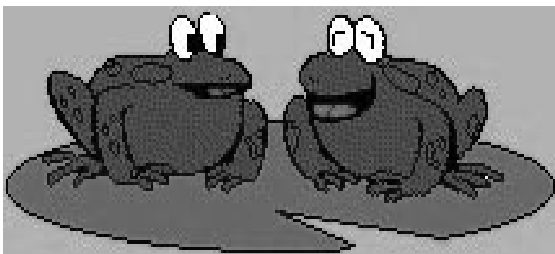
**Your Dues are Due if your label
reads 8-05 or anything in 05
prior to August**

**Please renew as soon as possible to continue
receiving the newsletter.**

THE TOPEKA AREA WATER GARDEN SOCIETY OFFICERS:

Tom Platis	President
Topeka	785-478-9514
Floyd Gruver	Vice President
Holton	785-364-3046
Diane Gruver	Secretary
Holton	785-364-3046
Jim Green	Treasurer
Topeka	785-272-7139

Meetings are held the third Wednesday of each month at Ward Meade Park unless otherwise publicized. Dues are \$15 per single or \$20 per family and can be sent to Jim Green, 5701 SW Arrowhead CT, Topeka, KS 66614.



Check it out - www.tawgs.org

The Lily Pad

Published Monthly, February to November by the Topeka Area Water Garden Society (TAWGS), a non-profit organization. TAWGS does not warrant the information in this newsletter. The opinions expressed are solely those of the authors and do not necessarily represent those of the Topeka Area Water Garden Society.

The Lily Pad encourages submission of articles pertaining to water gardening from the membership and other interested parties. Deadline is the third weekend of each month. Address input and/or questions to:

Diane Gruver, The Lily Pad Editor
408 Emerald, Holton, KS 66436
785 364-3046

fdgruver@earthlink.net

We reserve the right to edit input to meet publishing requirements. Copy cannot be returned.