

Pond & Garden

September - October 2000 • Volume 2, Issue 3

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Cover: You can grow aquatic plants amidst a perfectly child-safe pond – complete with the sound and sight of water. Photo of pond at Arbordale Nursery in Getzville, New York.

Make it safe for the children....

Our cover story in this issue is in response to a heartbreaking phone call and letter from Ron Farmer in Brentwood, Tennessee. His baby grandson drowned in a neighbor's pond. Because even keeping young children within an enclosed backyard is not always foolproof, we have put together some ideas for pond owners: creating an outdoor living room extension to our homes with a fenced backyard and actually constructing child-safe water features.

Our thoughts and prayers go out to the Farmer family. We are grateful that they have shared their grief to prevent such a tragedy to one of us. ♡



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Dear Readers,

*O*n May 1 our grandson drowned in a neighbor's landscape pond. I wanted to share with you our family's tragedy with the hope that it may prevent the loss of another precious life.

My wife was working in our flower garden and our 20-month-old grandson, Landon, was along side her playing with his plastic shovel. He was at her side as he had been so many days in the past. In just a matter of seconds, she looked up from her work and he was gone.

She immediately ran out of the backyard to the street, searching for him, instinctively thinking this was the place that presented the greatest danger. After she was unable to locate him, she came into the house and got his parents and me to help search the neighborhood for him. We each went in a different direction. Landon's father found him face down in a landscape pond in our neighbor's yard. We tried to revive him as we awaited the arrival of the paramedics. When they arrived, they told us it was too late. Our grandson was dead.

I know that many people have landscape ponds in their yards and enjoy them on a daily basis. They are attractive and becoming more popular. However, like a backyard pool, these beautiful

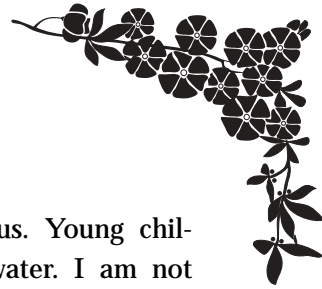
attractions are dangerous. Young children are attracted to water. I am not aware of the different types of protection that are available, but I am sure that there is both attractive and functional protection for landscape ponds that can prevent the kind of tragedy our family is living with on a daily basis.

We hope and pray that all the owners of landscape ponds will realize they have a hazard in their yards that is as dangerous as a swimming pool for young children. In our case, we were not even aware that the danger existed in our neighborhood. We simply cannot describe the pain that we are enduring as a result of our grandson's death. The lives of everyone in our family have been irrevocably changed. A

joy that was here for us every day no longer exists. I have a simple purpose in sharing this with you in that we hope and pray this letter will prevent another family from experiencing a similar tragedy.

If you own a landscape pool, please protect it from children. Life is priceless. We do not want your family to suffer a tragedy of the magnitude that our family is suffering. ❖

Ron Farmer, Brentwood, TN



Fall Garden Cleanup.... WITH WILDLIFE IN MIND

This time of year, urban gardeners are tempted to rake up everything, cut it all down, and leave bags of garden debris at the curb for pickup.

In consideration of wildlife over the harsh months ahead, leave seedhead-forming perennials like coneflowers and black-eyed Susans in place over winter. Leave your ornamental grasses standing, too. As winter comes on, these plant structures provide winter interest in the landscape along with seeds for birds and other wildlife. Wait until spring to cut down your wildflower meadow. Those dried-up flowers and grasses make for great winter wildlife habitat.

Instead of bagging fallen leaves, shred them for composting or weed-smothering, water-conserving mulch. Shredded leaves look natural and decompose into organic enrichment in your garden.

Leave some leaves under shrubs around the garden's perimeter as homes for over-wintering insects that are a food source for many birds and mammals.

Use fallen twigs and limbs to create a small brush pile somewhere that won't be viewed by the neighbors as an eyesore. Your children and dogs will enjoy the bunnies it attracts!

Remember, if you're short on garden debris, you can always ask your neighbors if you can have their bags of leaves perched along the curb.

In the meantime, survey your yard for appropriate places to set up winter feeding stations. You'll want to include hanging positions for suet, thistle feeders for finches, raised platforms, and ground-feeding areas. Don't forget to include a flat pan of coarse sand in the feeding area to provide all-important grit to the birds' diet. Plan to set up a 'heated' water source, too. Because the immune systems of your winter hibernating fish are then ineffective, you'll want to encourage the birds to seek their water away from your pond. (Birds can introduce parasites into the pond.)

As the late summer air begins to crisp, take time out for a country walk-about. Collect dried seedheads of grasses and wildflowers that you can use later in your feeding stations. Large pine cones make wonderful suet holders, too, and maybe you'll stumble across a farmer with a few extra sunflower heads. ❖



Providing a foil to other summer blooms, white coneflower leaves behind seed heads to feed feathery, winter garden visitors.

SEASONAL PONDKEEPING

by Scott Bates



Fall is Upon Us!

With the unusually dry summer we have had up North, we can expect an extra wet fall, which adds up to free water changes and extra nutrient input into our systems during September and October. By reseeding our bio-filters with bacteria, we can maintain good water quality and clarity during the fall. This will also aid the fish in their preparations for their long winter break. Southern water gardeners are merely smiling as they enjoy near-summer conditions with their plants and fish.

Feed your fish a food that is higher in carbohydrates and lower in protein to fatten them up for the winter. Your pond fish do not really 'hibernate,' they just get real relaxed during the winter. Because their metabolisms slow with the chilling water, they cannot properly digest food. Fattening them up before we quit feeding them for the winter gives them stored food to live on through their lazy winter days. As autumn comes upon us, you'll notice the fish dramatically slowing their own feeding. We should adjust our feeding habits to their eating habits. Feed them once a day as much as they will eat in 5-10 minutes, until the water temperature stabilizes below 55 degrees. You won't feed them again until the water warms above that point in the spring, even if the weather turns briefly balmy during winter.

Leaf netting is advised if your pond is near trees. This will protect your fish from fouled

water and alleviate a later cold, wet chore of pond cleaning. As the water temperature dips into the low fifties, you'll want to clean your filter and store any pumps or equipment you won't use during the winter. Remember to store oil-encapsulated pumps in a bucket of water to keep their seals from drying out. If you plan to keep a pump running in the pond, perhaps near the water's surface to aid in keeping a hole open in the ice, move the pump into the top one-third level of water. This will prevent recycling too-cold water down where your fish are relaxing and risking a fully frozen pond.

By September, you are through fertilizing the plants for the season. You might notice slowed growth and more yellowing of foliage as the plants prepare for dormancy. Likewise, transplanting and dividing will now wait until next spring. The plants no longer have the metabolism to heal wounds and re-establish before dormancy sets upon them. If you plan to bring in tropical marginal plants to winter indoors as houseplants, move them indoors *before* the first frost. Plants that have experienced a frost have received the ultimate message to shut down. Chances are, you won't be able to convince them otherwise!☛

Scott Bates and parents, Gary and Rosemary, own Grass Roots Nursery, 24765 Bell Road in New Boston, MI. He can be reached at 734-753-9200.

Tabletop Fountains

by Helen Nash

Bring the relaxing sound of moving water indoors!

After college, my daughter took a high-pressure sales position. Michelle laughed that she and another saleslady would retreat to the bathroom to turn on the water faucet, close their eyes, and relax. I bought them both tabletop fountains for their desks.

The sight and sound of water is relaxing. You can bring that serenity indoors with pre-designed tabletop fountains that are available in a wide variety of styles and prices to suit your room décor.

You can also make your own. The basic need is a watertight container and a small, submersible, recirculating pump. An



80 gallon-per-hour pump works well with most small fountains. Optional treatments include mini-underwater lights and foggers/misters.

Foggers create the look of simmering dry ice, so be prepared to repeatedly respond, “No, it’s not dry ice...it’s a water mister!”



With several misters now on the market, you’ll want to select one that operates with an automatic shut-off if it tips over. Be sure the walls of your container are high enough to fully contain the splash created by the operation, as well as large enough to hold a suitable volume of water.

Take appropriate safety precautions since you are combining electricity and water. Make certain the cord leading from the submersed pump to the electrical outlet is set in such a way as to disallow water dripping down the cord and into the electrical outlet. You may need to coil the cord as an extra precaution. Monitor the water level in your fountain to prevent its evaporation to so low a level as to allow the pump to run dry and burn up.

Especially if your water has a high mineral content, like our well water, you’ll avoid mineral deposits that shorten a pump’s

life by using purified or distilled water. Algae will not grow if the fountain is set up away from direct sunlight. However, if you set it in a sunny window, chlorinated water or enhancement with a small bit of hydrogen peroxide will prevent unsightly algal growth. If you opt for live plants in your tabletop feature, you may resign yourself to regular cleanings.

In future issues, we’ll explore tabletop fountain projects you can make yourself. In the meantime, you might explore Dawn Cusick’s [Tabletop Fountains, 40 Easy and Great-Looking Projects to Make](#), published by Lark Books, A Division of Sterling Publishing Co., Inc. in New York. See pg. 101 for ordering information, if your local bookstore does not carry it.☺



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MAIL ORDER AND ONLINE TIPS FOR BUYING FLOWER BULBS THIS FALL

by Sally Ferguson

Fall is spring bulb-planting time! Here are some tips from the Netherlands Flower Bulb Information Center in New York for buying bulbs by mail.

How do I know when to order?

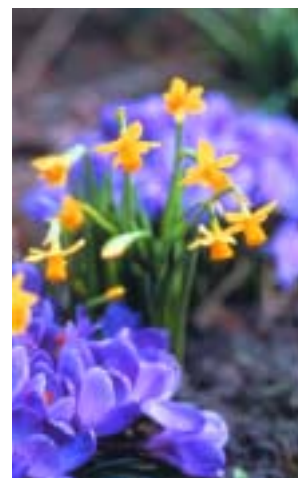
Order early if you really want particular varieties –especially those that are limited in availability or are particularly popular. While limited varieties may sell out by September, most orders can be filled until late in the fall planting season. No matter how early you order, most bulb companies routinely ship at the appropriate time to plant in your area.

What if I can't plant right away?

The best place for your newly arrived spring garden is in the ground. But if you can't plant right away, or if you live in one of the warmer climate zones, store the bulbs in a cool, dry place until planting.

When is it too late to plant?

Ideally, bulbs like 6 weeks to develop roots before the ground freezes.



Daffodils mean spring!

But what if Thanksgiving passes, then New Year's, and you still haven't planted your bulbs? Plant them! What's to lose? Remember, bulbs are dormant, not plastic. They won't last till next fall – it's now or never. And bulbs rarely let you down – they want to grow. They're pre-programmed survivors – give them a chance to surprise you!



'Yellow Dawn' tulip

How do I know if the bulbs I got are good?

Bulbs should be firm, not soft and mushy. They should be free of cuts and visible scars. Some, such as tulips, have a brown papery coating called a tunic, just like onions. Don't worry if the tunic is torn or falling off. Studies have shown that torn tunics are no problem and may even hasten rooting. If you have problems or questions, call the company and ask for customer service.☺

Sally Ferguson handles PR for the Netherlands Flower Bulb Information Center, 30 Midwood St, Brooklyn, NY 11225. For a comprehensive list of flower bulb mail-order catalogues and online sources, visit www.bulb.com at <http://www.bulb.com/basics/wheretoh.html>.

Talking About Koi...

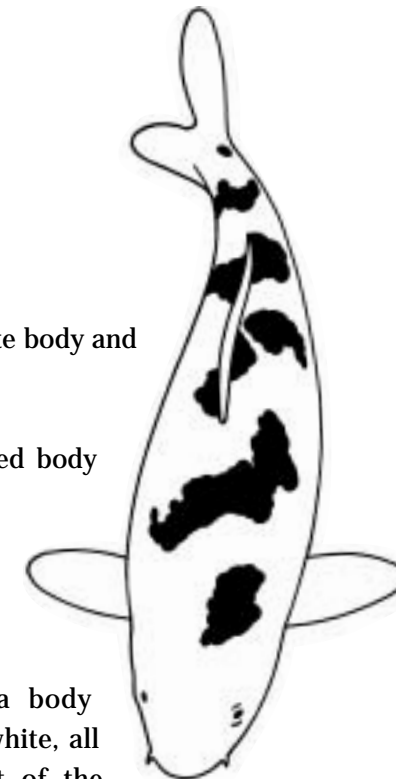
Bekko

The word bekko in Japanese means 'tortoise shell.' A Bekko is a white, red, or yellow fish with black accent marks. The type of Bekko is determined by the body color.

- **Shiro** (sheer-o) = white
- **Aka** (ah-Kah) = red
- **Ki** (key) = yellow

- A Shiro Bekko is a Koi with a white body and black accent marks.
- An Aka Bekko is a Koi with a red body and black accent marks.
- A Ki Bekko is a Koi with a yellow body and black accent marks.

Remember, Bekko Koi have a body color of one solid color, either all white, all red, or all yellow. The placement of the black accent patches is very important. Most of these patches should be on the upper part of the body and can be in any shape while not being wide, thick stripes extending beyond the upper part of the body. A good specimen will not have black markings on its tummy.☺



Winter... WHERE DO THEY GO?



Larger frog species, such as the green frog above, and bullfrogs and leopard frogs are capable of such slowed metabolisms that they can safely winter over buried in mud within the pond's water. Set a pot of garden soil in the bottom of your pond to give your resident frog a secure winter bed.



Yes, some herons and egrets migrate....but many do not. If you've relied on fishing line strung in a grid over your pond, leave it in place for the winter. Even so, your fish, now fully exposed with the plants all dormant, will appreciate the cover provided by overturned empty pots in the pond bottom.



Apple snails are considered tropical. They will die in the temperate pond and must be moved indoors into an aquarium with room temperature water to ensure their survival. Hardy snails such as Trapdoor and Japanese Ramshorn snails will go into hibernation in the mud of plant pots.



Dragonflies lay eggs in your pond. Although the larvae go through several changes, you will often find them wintering over in the gravel toppings of plants or in mulm/debris left in the pond bottom. If you clean the bottom of your pond, watch for your future dragonflies!

KoiVet.com

by Dr. Erik L. Johnson

Disease Prevention – Costia and Salt

A discussion of disease prevention in the fall and winter would not be complete without a discussion of *Costia*. This parasite is the NUMBER ONE fish killer in fall and winter because it can thrive in very cold water. *Costia* or *Ichthyobodo necatrix*, is a ciliated protozoan parasite of freshwater fish that also has the capability to kill fish in great numbers, and in no short time-span. The only good fortune in this is that it perishes readily when salted. *Costia* may be attached or free swimming. Attached *Costia* look like little commas stuck into the skin or gill by the thin end. Free-swimming *Costia* are graceless, wobbly swimmers that look like commas or almost like half-open Conch shells. They are extremely small and hard to photograph.



Costia clears easily with salt, and this infection should be suspected when a lot of fish are dying, when fins are reddened, and when it appears that the fish cannot breathe very well. Spiderweb lesions in rapidly dying fish are also characteristic, as well as is excess mucus production. Parasite control in the spring and fall can be intercepted with routine use of salt. I recommend that salt be applied as you quit feeding in the fall. If the salt is removed by winter water changes or additions, you would also re-apply the salt to 0.3% in the springtime as you resume feeding.

I do not recommend using salt all year round as resistance has been shown in flukes and *Trichodina*.

To apply the salt: Remove submerged plants. Perform a fifty percent water change and clean the pond as well as reasonably possible without causing undue delay in treatment. Apply non-iodized table salt for larger systems, dosing one pound per hundred gallons of water every 12 hours for three treatments (3 pounds per hundred gallons total treatment). As a side note, you would add the salt all at once in the case of epidemic mortality.

Reprinted by permission from Dr. Erik Johnson's website: KoiVet.com. If you are not online, you may wish to refer to Dr. Johnson's book, *Koi Health and Disease*. See page 31 for ordering information.

Earth Ponds: PREDATORS AND PREY

by Tim Matson

I wake up from a nightmare of valkyries swooping down out of the sun. It's an orange summer dawn. Crazy laughter echoes over the cabin, gains pitch, and passes by. Then silence. I jump out of bed. In a moment I'm running barefoot toward the pond through the cold dew, waving my arms and cursing. A blue bird launches from a white birch below the spillway. It flaps away low and fast, cackling with a derisive rattle. I watch it skyline down the valley over the brook and disappear. But the bird will be back. The pond has been discovered by a kingfisher.

The face of the pond is untroubled. No fish scraps beneath the tree, no evidence of plunder. But I've heard that a kingfisher can dive into a pond and pluck up a fish in its beak and swallow it hole. If I lost any trout, how would I know? Counting fish is as hopeless as counting stars.

Earlier in the spring, up the road at Miller Pond, I witnessed my first kingfisher attack. A state hatchery truck rumbling through the valley caught my eye, and I followed. When I pulled in at the boat landing, the truck was backed down to the water's edge. At the back of the truck a biologist was netting trout fingerlings out of a vat and ladling them into the pond. For someone accustomed to watching seining operations where fishermen haul up fish by the net-full and dump them into the truck, it was a strange sight. As the biologist scooped out the last of the trout and the water behind the truck simmered with confused fingerlings, I saw a bright blue flash.

A bird boomeranged off the water and streaked toward the trees across the pond. Then I heard a jubilant shriek, and more laughter from the treetops.

The biologist shrugged.

"I just put in four thousand fingerlings," he said. "There should be plenty for everyone."

Still, it wasn't his nickel. I was feeling protective about my trout crop and asked how the state hatcheries defend against kingfishers.

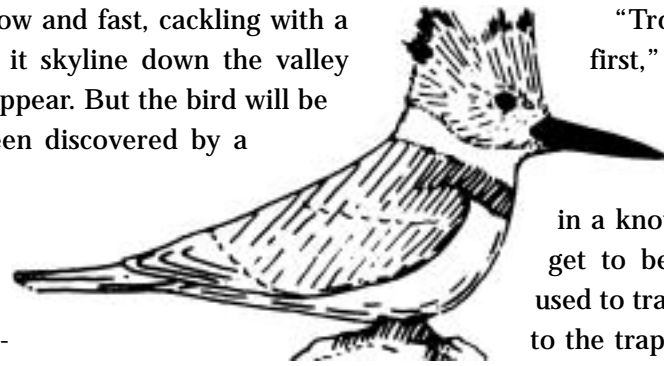
"Trout are pretty vulnerable at first," he admitted. "They're growing so fast that they don't have much intelligence. When a kingfisher hits, they ball up

in a knot and won't feed. Later on they get to be quite smart. In Salisbury we used to trap kingfishers until they got wise to the traps. My boss is a bird lover so he wouldn't let me shoot at them. But when I showed him that the losses for the summer were five thousand fry, he changed his mind."

Shooting kingfishers is not standard pond keeping procedure. The 1918 Migratory Bird Treaty Act makes it a federal crime to kill kingfishers, herons, and gulls. Nonetheless, exceptions are made.

"At some of our hatcheries where birds are very troublesome, we have permits," he said. "If you have a commercial operation that is threatened, perhaps the U.S. Fish and Wildlife Service will issue a permit. But we suggest you use whatever scare tactic will work."

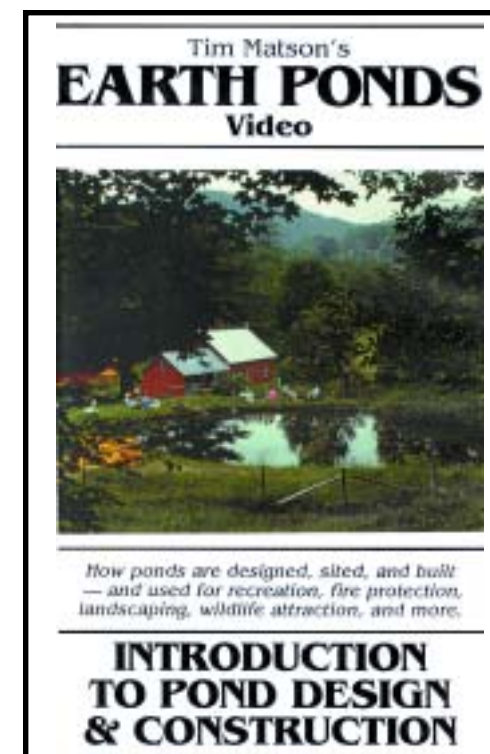
I had no urge to murder kingfishers. Besides, in a couple of months I hoped to have my trout fry nursed up to five or six inches, big enough to defend themselves and too big to slide down a kingfisher's gullet. Meanwhile, with the state doing such a good



job of feeding the birds, I figured that I had a fighting chance to keep kingfishers off the pond.

There are several traditional strategies for fending off flying predators. Some people stock bigger trout, five- to seven-inch fry. But they cost more and diminish the potential reward of the harvest. That's no solution for anyone planning to hatch fry of his own. Tree perches, especially the dead branches that kingfishers favor, can be culled from around the pond. However, clear-cutting the shelter belt around a pond seems impractical; trees often provide pond bank reinforcement, as well as shade and a place to hang a hammock. Automatic noisemakers powered by gas cartridges can be set to explode or screech at different intervals; but the birds, if not the pond keepers, are said to become used to the racket. Hatchery professionals cover raceways with netting or wire mesh, or enclose them in a building. And ponds are sometimes overrun with parallel strings crossing overhead on poles twenty to sixty inches apart, like horizontal barrage balloon wires. ♡

Excerpted by permission from *Earth Ponds, The Country Pond Maker's Guide to Building, Maintenance and Restoration* by Tim Matson, Countryman Press, Woodstock, VT. *Earth Ponds* resulted in Tim's being tagged "the earth pond guru." Countryman Press



has also published Tim's *Earth Pond's Sourcebook*, *The Pond Owner's Manual and Resource Guide*. Both are available at your local bookstore. To order Tim's video, *Earth Ponds, Introduction to Pond Design & Construction*, send \$29.95 + \$3.00 shipping and handling to Tim Matson, RR#1, Box 77, Thetford Center, VT 05075-9601.

Browsing the Web...

**These websites are listed in this issue
of Pond & Garden! New entries are starred.**

www.agritab.com	www.koigarden.com	*www.ponds4u.com
www.americanwpp.com	www.Koiusa.com	www.pondshop.com/catalog
www.anonbay.com/ane	www.KoiVet.com	www.Ponds2go.com
www.aquababies.com	www.Koivilla.com	www.pondvac.com
www.aquagardens.com	www.lilyblooms.com	www.puddlesn pads.com
www.aqualogicpond.com	www.lilypons.com	www.reedsnweeds.com
www.aqua-mart.com	www.linkny.com/barleystraw	www.reliablegarden.com
www.aquariumpharm.com	*www.lonestarkoi.com	www.RichtersGardens.com
www.aquariumservices.com	www.lotussong.com	www.sequencepumps.com
www.aquatecfountains.com	www.louisianairis.com	www.stokestropicals.com
www.aquaticexotics.com	www.marylandaquatic.com	www.suburbanpond.com
www.atlantakoiclub.com	www.mastersons.net	www.SWGReplicraft.com
www.Avongarden.com	*www.mobot.org	www.tcfb.com/perwatg/
www.AZPonds.com	www.microbelift.com	www.tetra-fish.com
www.barsons.com	www.Mystickoi.com	www.thatpetplace.com
www.BigAlsOnline.com	www.nelsonwatergardens.com	www.Thelandscape.com
www.brassbaron.com	www.netjunction.com/solt	www.thepondexperts.com
www.bzli.com	www.nhg.com	www.ThomCpondpumps.com
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www.hozelockcyprio.com	*www.PondClub.com	http://sites.netscape.net/ripplefarms/
www.jimswatergardening.com	www.pondfiltration.com	www.yileen.com.cn/english
www.kcnet.com/~wgskc	www.pondpumps.com	
www.anjonproducts.com/pondliners.htm		www.ccsi.com/-sgray/austin.pond.society/apshome.html
www.geocities.com/TheTropics/Shores/8015/index.html		http://members.xoom.com/WacoPonds/index.html

Building Permits for Ponds?

The subject of a building permit for a pond may not arise at all if your pond is less than 18 inches deep and smaller than 400 square feet. That pond, of course, would probably not be a dedicated Koi pond – it would be a water garden, complete with glorious water lilies and sparkling goldfish. Because no universal standard exists across the country, you'll want to check on your local building ordinances. This is particularly advisable if your area does require a building permit. Discovering after the fact could result in, at worst, having to fill in the hole, or, at least, going through a major hassle to obtain the requisite permit.

Building permits, where required, are intended to assure that construction is done properly. For the do-it-yourselfer, the assistance can be invaluable. For the hired construction, it assures you that the job is being done properly...and fairly. Unfortunately, the building permit process can sometimes involve a political morass. Before digging the hole (and jumping into it), it's always best to thoroughly check your area's requirements and procedures.

Often, you may find that your area does not have its own code, instead resorting to the Universal Building Code. (UBC) In fact, many states mandate the use of the UBC.

In any case, in your pond planning stage, find out who handles building permits, whether one is needed for your project, and what

section of the code applies to you. It may well be that you must comply with the code as it addresses swimming pools.

Completing an application for a

permit usually involves several pages, complete with a plot plan, a diagram of the project, and information relating to utilities, pond specifics, and safety ordinances. ▶

Ask the Plant Man



by Steve Stroupe

Q: I grew two pots of lotus in their own container ponds this year. They did well, but with fall coming on, I don't know what to do with them – help!

A: If you live in a climate with freezing, winter weather, you'll want to take precautions to save your lotuses before the cold hits. If they're grown in pots within the pond, it's a simple matter of moving the pots to the deepest, ice-free part of the pond along with your hardy water lilies. Lotuses grown in container tubs like yours, however, will need to be stored in a cool, non-freezing place, since they are actually perennial plants that need a dormant period. This allows you a perfect opportunity to divide the plant, which it probably needs.

Lotus propagates from rhizomes, the swollen terminal sections of which are commonly referred to as 'tubers.' Dividing in late winter, before the plant starts actively growing, minimizes chances for damage to the tubers and delicate growing tips, which can cause the lotus to die.

Make a 12-18" high pile of hay or straw on the ground somewhat larger than the pot diameter. Turn the lotus pot upside down so that the root mass falls squarely on the hay. This method minimizes damage to the tubers even when they've started growing.

You should be able to view most, if not all, of the tubers at this point. Spray the root mass with a garden hose to more fully expose the tubers to view. Trace the rhizomes until the sections ter-

minate into swollen, elongated sections with growing tips. Now work your way backwards until the swollen sections change back into elongated runners. Cut the runner behind the last node (joint) of the swollen sections. Work the severed section of rhizome gently away from the root ball, being careful not to break any growing tips. Do not attempt to divide rhizomes any further than this.

If it's still too early to repot your lotus, you can store the bare tubers wrapped in barely damp sphagnum peat moss inside a plastic bag in a cool, non-freezing place until your last frost date.

When repotting, use a no-hole Lerio pot at least 24 inches in diameter. 36 inches is even better! Scatter 1/2 cup of slow-release granular fertilizer such as Aquatic Tabs Pond Pearls in the pot. Place 4-5 inches of heavy topsoil (with no organic amendments) in the pot. Place 1-3 tubers in the pot with the growing tips up. Lay a flat rock on the tubers to hold them down and fill the pot with water using a breaker so as not to turn the dirt into a slurry. Once the lotus has begun significant growth, you can add a shallow layer of soil or flat rocks, so long as the growing points are kept free. It won't need any more soil than this. Your lotus will grow faster if you do not place it in the pond until it starts forming aerial leaves.☛

Steve Stroupe owns Davis Creek Nursery, a wholesale aquatic plant nursery, in McCalla, Alabama. He is co-author of [Water Plants for Ponds](#), published by Sterling Publishing Company in New York. Due to the volume of questions, Steve asks that plant questions be sent to P & G at 1670 S 900 E, Zionsville, IN 46077; ph: 317-769-3278; fax: 317-769-3149; or e-mailed to us at www.pondandgarden.com. Please include your phone number if urgent information is required!

Winterizing Your Bio-Filter TO JUMP-START IT IN SPRING

by Bob BonGiorno

You can winterize your bio-filter and use this year's bio-filter to jump-start next year's!

Once the pond's water temperature has stabilized below 50°F, remove the bio-media from your bio-filter and gently clean it with pond water pumped through your pump. Although the bacterial colony is barely functioning, bacteria go into hibernation in cold but not freezing water. As long as they have not frozen, they are still alive. Too strong a hosing can wash away the bacterial colony. Clean the rest of the bio-filter with a strong hosing.

The cleaned bio-media with its colony of sluggish aerobic bacteria is used to create a "jump-start soup." You will need to maintain your bacterial starter at 65°F. If you cannot keep the setup in such a warm place, use a thermostatically controlled aquarium heater. Because these bacteria are aerobic, supply oxygen with an aquarium air pump and air stone placed in the bottom of the starter container.

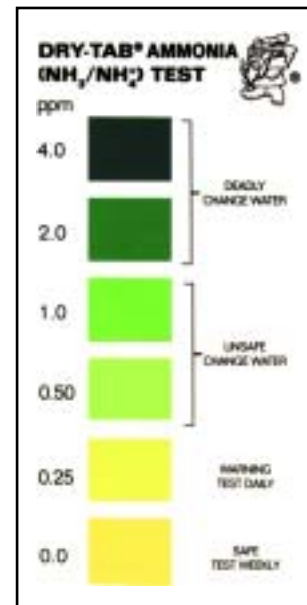
Place the bio-media into a clean container or garbage pail (equipped with the heater, if necessary). Fill the container with enough water to cover the media and set up the aerator device. To help control evaporation and to keep the media clean, cover the container. Drill a hole in the lid for the air tubing to prevent the cover from crimping it. Set a thermometer in the water to be sure the water remains at the desired 65°F. Add

a few drops of ammonia to the container's water. Do not use detergent-enhanced ammonia!

Throughout the winter, check the container once or twice a week, verifying the temperature and that the water has not evaporated to expose the media. Use an ammonia test kit to be sure to maintain a reading of 1 to 3 ppm. When the test reading drops below that level, add several more drops of ammonia to "feed" the bacteria. After the first several weeks of operation, your bacteria will have revived in the warmer temperature and be oxidizing the ammonia food.

In the spring, once the water temperature has warmed above 50°F, you can set up your bio-filter with the media and bacterial colony you have kept established through the winter. Your bio-filter is immediately up and running a full three to four weeks before it would be if started from scratch.

Bob BonGiorno owns Suburban Water Gardens in Dix Hills, NY. Call 516-643-3418 to request a free catalog or visit their website at www.suburbanpond.com.



An ammonia test kit ensures your bacteria colony has enough 'food' to maintain itself.

Is It Worth It?

by Shelly L. Klinger,
Central Illinois Water Gardeners

I am the founder and President of Central Illinois Water Gardeners. Oftentimes I'm asked, "Is going to the trouble of having a pond really worth it?" by discouraged pond club members who are suffering from their first bout of pea soup water...

Our house went on the market on Saturday, June 10 at 11:00 a.m. On Tuesday, June 13, Coldwell Banker had a walk-through for their entire company. While our home is considered nice by many standards, it is not spectacular and would not stand out to most.

One of the realtors that saw the house that morning decided that it would be perfect for her client. I had forgotten to close the garage door that morning when I left, and when the realtor and her client arrived, they were able to see directly through the garage and screened-in porch and into the back yard. The opened porch door acted like a picture frame for the 2 small water gardens. The gentleman took one look and said, "Yes!" without even taking one step inside of the house! He brought his wife



through at 3:30 and by 5:30 that evening, our house was SOLD.

Dr. Bortell and his wife have always wanted a water garden, and they both love gardening. Any trepidation that I had about leaving my pride and joy behind were quickly dispelled by their obvious passion for gardening. Dr. Bortell also happens to be my Siberian Husky's veterinarian. In addition, he is an exotic animal vet, which makes me feel even better about leaving some of my precious Koi and goldfish.

My husband, daughter, and myself are looking forward to getting out of the city and into a new way of life. Our future home is in the middle of two acres of woods. I will have many challenges to overcome, including learning how to deal with wildlife, full shade, and many, many roots. But I look forward to my challenges and will dig my first shovel of dirt before any of the boxes are unpacked.

When my frustrated club members ask that ever-important question after their first algae bloom, I must respond with more than the usual adjectives of *beautiful*, *serene*, *relaxing*, *harmonious*, and *educational*...I must say that, from an unemotional point of view, having a pond is *profitable!*☺

DIRT DIGGER

by Bruce Zaretsky



Bright Idea – Did You Spot That?

Spotlighting can be used for many things in the landscape. You can highlight a tree or a shrub. You can light a walkway from above. You can light a waterfall.

There are a myriad of fixtures available to create these effects. But, if you follow the 'keep it simple' theory, it becomes much easier. Let's talk about bulbs. There are three bulbs used for spotlighting, with different uses for each.

The *MR-16* bulb is a parabolic mirror bulb. It is also called a halogen bulb, but it is not a true halogen. *MR-16*'s are used for precise lighting. They are available in various wattages and beam spreads, so you can spotlight a tall, thin tree, for example, or you can use these sharp beams for shadowing shrubs or trees on a wall. They also have a truer white light so they show plant colors more realistically.

Par-36 bulbs are what your car

headlights are. They throw a wide, far beam, making them ideal for lighting short, wide trees or tall trees. Their light is a little softer and more yellow than the *MR-16* bulb, but they are extremely versatile. *Par-36* bulbs can get wet, while *MR-16* bulbs need to be sealed in a watertight fixture.

Bayonet bulbs are what used to be in car taillights, and they are still used in trailer lights. They are used for path lighting, as well. As a spot light, use them for highlighting small garden statuary and sculpture. Hanging in a low tree, these bulbs throw a soft light onto plants, as well as providing a low-impact path light.☺



Bruce Zaretsky and partner, Sharon Coates, own Bruce Zaretsky Landscaping, Inc., 1787 Rte 250, Penfield, NY 14526. Bruce has gained national recognition with the Grand Award for Special Events from the Associated Landscape Contractors of America. They can be reached at 716-377-8330, or you can visit their website at www.bzli.com.

ASK CHUCK: PONDKEEPING Q&A

by Chuck Rush



Two questions about ground water – one answer!

Q: I have thought for a year that I had a leak in my pond liner. Occasionally, I would go out to inspect my ponds and would find one half empty. The other morning when I went outside after an overnight rainstorm, half of the liner was at ground level. This pond is 10 feet long, 5 feet wide, and 2 feet deep. It has a drain pipe 3 inches below ground level. The ground has a slight slope. It appears that after a very heavy rain that the ground water pushes the liner up allowing the water to flow out of the drain pipe. When the ground water level drops, the liner returns to the bottom of the hole. How do I fix this?

Q: I'm in the thinking stage of a pond. Probably like all newbies, I would like it in a low area on our property. I live out in the country on forty acres with no close neighbors and we don't use chemicals – would that make a difference?

A: Dealing with ground water and high water tables entails more digging. You'll need to bury some 4- or 6-inch drain pipe around your pond at least at the same depth or, preferably, slightly deeper than the deepest point of your pond. Depending on your site, you can then route the pipe to a nearby street or

ditch, or dig a sump with a sump pump in it. Your drainage ditch line should deepen by an inch for every ten linear feet it is directed away from your pond area. Some professional landscapers line the drainage trench with geo-thermal textile fabric and fill in over the drainage tile with crushed rock. This prevents soil from clogging up the holes in the drainage tile.

Ideally, before you ever dig the hole for your pond, you will have observed the water table in the area for a full season. You can dig a narrow hole to the depth of your proposed pond and observe whether water collects in it...and if it does, how long it takes for it to drain away. Your county extension agent may have information about the type of soil and water table in your area, too.

If you determine even before you dig your pond that you have a high water table, at least as high as your pond will be deep, you'll want to plan those drainage tile trenches to crisscross across the bottom of your pond in the soil *beneath* your pond liner. A worst-case scenario would also involve drainage provisions *around* the pond. Better to do more digging now than to find your pond liner floating at ground level and your fish flopping around in the grass after torrential rains or heavy snow-melts.☺

Many of Chuck's Q & A appear courtesy of the North Texas Water Garden Society. You can reach Chuck by E-mail at Crush@dallas.net.

Victoria Update



by Kit Knotts

Second Season?

Though *Victoria* has always been considered an annual, we are not convinced this is necessarily so. Since they still can be so hard to start, why should we not look at ways they can be grown for several years instead of just one summer?

We have successfully grown an *amazonica* for nearly two full years; Dr. Slearmarp Wasuwat in Thailand did this before we even tried; and William Phillips in Memphis, Tennessee, is currently growing one started in the fall, bloomed through the winter, and again through the summer. His temperature-controlled greenhouse pond may just be the Fountain of Youth, helping us to learn more about perpetuating *Victoria* plants.

So far it is *amazonica* that has been grown longer, perhaps because the climate in its natural habitat is so even, providing no 'clock' to tell it to quit. We know the hybrids take more temperature variation as young plants than was previously thought, so why not the older ones as well?

The best candidates for over-wintering are probably plants that have been started late or those that have remained small for other reasons. Overgrowth of big plants presents a whole different set of things to deal with and can be very difficult to move or repot. The best places to try over-wintering are frost-free, either naturally or with a greenhouse available. Water of 65°F seems about the minimum, though brief periods lower don't seem to do damage.

The main thing the plants seem to require is being firmly anchored in their pots. The normal upward growth gradually raises the crowns and feeder roots above the soil, not a big problem when growth is active. When the seasonal slow-down comes, the roots need to be in soil and the crown at soil level. Pushing the whole plant down, adding soil and continuing fertilizer should allow the plants to grow on.

We hope many will try this and let us know how

they do. The more we test the limits of *Victoria*, the more amazed we are at its adaptability to varying environments. ♡



A late July visit by Joe and Tonya Summers with darling Lily allowed Kit to continue Lily's tradition of being photographed on a *Victoria* leaf. Remember Lily's first *Victoria* picture on the cover of Issue 6 last year? Lily just celebrated her first birthday and will someday, no doubt, be very happy Mom and Dad let her keep her clothes on for this picture!

Pond Splash



Colder Zone Winterization

by Steve Katona

When the water temperature lowers to 50°F or when the leaves begin to fall, it's time to winterize your pond. Discard all water hyacinth and water lettuce before rotting occurs. Remove other tropicals when their growth stops or begins to yellow. If you will not winter them as houseplants or otherwise store them for next year, discard them. Hardy plants remain in the pond. Trim them down to the soil-line and sink them to the bottom of your pond. Parrot's feather may remain in place to take advantage of necessary sunlight. Thin or cut back submersed aquatics if they have grown out-of-bounds or have grown up into what will be the ice layer. Anacharis and other submersed plants can be killed by freezing. Their decomposition, along with that of fallen leaves and organic debris on the pond bottom adds to the pond's bio-load and may foul the water. Net the pond to keep out the leaves and remove any excess accumulation of organic mulm from the pond bottom.

Although colder temperatures occur at the pond bottom during summer, the reverse is true in winter. A pump left running on the pond bottom mixes the colder upper layer of water with the warmer layer down below, chilling the lower water to potential freezing. In extreme cold, this could be fatal to fish. While you would not run a waterfall during winter, you can continue running your pump through a shallow marsh-pond area so long as the pump is pulling water from

the upper water level. The gentle water movement acts as a de-icer in all but the coldest weather. Because cold water holds more oxygen, you are not concerned with oxygenation but rather in creating a vent-hole for gas exchanges. The vent hole lets bad or harmful gases escape so they don't poison the fish. A pond should never be without a vent hole in the winter for more than approximately three days.

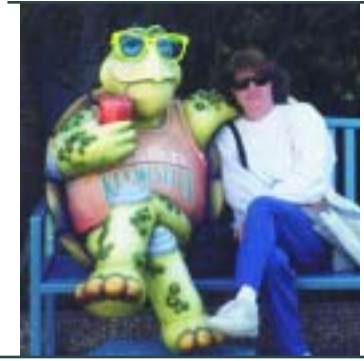
Without a pump agitating the water's surface to prevent icing, an air pump can be plugged directly into your GFCI outlet. House the unit itself within a protected structure such as a waterproof box. An air pump will keep an open vent hole in the ice layer under normal conditions.

A de-icing unit with a protected heating element can also be used and should be set into place before the pond's surface freezes. This unit operates through extreme weather by floating on the pond's surface. A built-in thermostat controls the on/off operation. Thermostats are usually pre-set around 32 degrees. De-icing units range from approximately 1200 watts to 1500 watts when operating.

If you choose to remove your pump from you pond, take it out when the water temperature stabilizes below 50 degrees. Another option would be to 'store' your pump at the bottom of your pond, but turn it off. Do not let your pump freeze. ❖

Steve Katona can be reached at North Hills Water Gardens in Pittsburgh, PA, at 412-821-6525.

Travels with Helen & Marilyn



This year's annual Seminar for the Associated Koi Clubs of America (AKCA) was held in Springfield, Missouri, where it was hosted by the Springfield Water Garden Society. Chief Financial Officer of the AKCA, Carl Caddies, finished up his duties in time to enjoy the weekend.



A short trek to Dayton, Ohio, in June allowed me to get a shot of Pat Laukhart's cast that she decoupage with pictures of koi and water lilies. She cut out her pictures, glued them to the blue-painted cast, and modge-podged the whole thing! Pat is known as "The Pond Lady" to members of the Miami Valley Water Garden Society.



The computer ate the caption to this photo in our last issue! Apologies to Gordon and Mila Powell who are pictured at a Japanese restaurant in Springfield, Missouri, where we joined them for a sumptuous meal following their program on bamboo for the Springfield Water Garden Society in March.

The highlight of a trip to St. Louis in mid-May to speak to the St. Louis Water Garden Society was a tour with Linda Dollard to visit members' ponds. Maureen and Vance Halterman, shown above, have created a virtual paradise out of nothing since their recent marriage. See more of their pond on page 82.



On the pond tour, the final day of the AKCA 2000 Seminar weekend, Paula Biles (center) talks with Pat Ware (left) about the Wares' many ponds.

by Dr. Erik Johnson

WINTERizing KOI

This is the time of year that we consider our Koi as being “dead asleep” and we do not worry too much about them because water temperatures are so cool that parasites and bacteria are almost as dormant as the fish themselves.

Indeed, this is an important time of year because what you do now, or do *not* do, sets the stage for your springtime season in March, April and May, which traditionally marks the “Disease Season.”

At this time of year, we should examine the water quality, the pond’s cleanliness, and disease prevention (see page 15). Water quality at this time of year is usually very good. Cold water carries much more oxygen than does warmer water. Even with the filters off, oxygen tensions remain high and very satisfactory for fish, partially because their metabolism is so slow!

Ammonia can still be a problem in some ponds if the owners are feeding every warm day they get. I saw another pond that was made with a liner which was installed and seamed in two parts and was positioned over some septic tank field lines. The ammonia-rich ground water welled up through the seam in the liner, giving the owner a nice 2ppm ammonia reading, even in the dead of winter! Ammonia testing is very satisfactory in the winter, if you only *warm* the water in your hand to at least room temperature before testing it. You see, the reagents give falsely low readings in cold water.

Nitrites should not be a problem because *Nitrosomonas* is very sensitive and will be inactive in the wintertime. If you ‘freeze’ these bacte-

ria in a block of ice, they will be killed, but if you merely chill them to near freezing, they will remain in a state of suspended animation until conditions return to more suitable temperatures.

pH is never a sure bet unless your pond is concrete lined, in which case it’s a sure bet that the pH will be high...<grin> Still, for those reason that apply in the summer, periodic checking of the pH will avoid a ‘crash’ in the pH which can kill fish.

One other area of water quality for your consideration is the formation of ice on your pond, which will trap gases and other toxins underneath to the detriment of your fish. It has been said that ice can be permitted to form for a few days without hazard, and I substantially agree. Folks who have left their traditional backyard ponds covered with ice for weeks have lost entire collections of fish. It’s hard to believe that there could be that much gas formation in the dead of winter, but the proof is in the experiences of hundreds of people every winter. They reason that in nature, ponds freeze over. However, they do not realize that natural ponds are usually larger, less crowded, and may have an inflow of spring water or stream feeds. I urge you to keep a place in the ice clear for gas exchange and observation of the fish. Cattle water trough heaters (caged heaters) are cheap (about 30-50\$) and can keep a patch of ice clear all winter for a small investment in electricity. Air blowers and stones may fail to keep ice from forming in the harsh Northeastern climes. I have seen a regular stalagmite of ice form over the air-cap there, and the benefit is then lost. Do not break the ice with a concussive blow in the event that you are caught unprepared and you find your pond frozen. The blow to the ice is supposedly transmitted through the water



and will shock and possibly deafen your fish, ruining their appreciation of fine music. I wouldn't worry too much about deafening the fish; this ice-whack-and-shock-phenomena has not been seen in real life recently. Take your time, you have days, even a week, to open a hole in the ice. Use a hot teakettle set directly on the ice. Some folks use coffee heaters, but I wonder if the heater could melt through and fall in?

Pond cleanliness is an important area of fish health and husbandry all year around, but especially in the early spring or late wintertime. Many ponds feature an autumn's worth of leaves on the bottom and the water may be murky and dark from the tannins as they are leached from the leaves. Ponds which are filthy and laden with mulm and dead leaves are a serious threat to springtime fish because of the organic fuel which the dead leaves and detritus provide to pathogenic bacteria and certain parasites. Specific pathogens, including *Pseudomonas* and *Aeromonas*, depend upon fouled water to attack fish. There are parasites, as well, which cannot flourish

[C-deficiency](#)
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RESOURCES

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[Koi Health & Disease Links](#)
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GOLDFISH SECTION

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without a significant biological load. *Epistylis*, *Scyphidia*, *Trichophyra*, and even *Trichodina*, are all examples of parasites that seem to do better with a thick mulm layer on the pond's bottom.

The best recommendation would be to clean out the pond just as the frosty weather approaches, and then string a leaf net to prevent leaves even getting into the pond. If it's too late for your pond, then my recommendation is that you clean out the pond sometime before the fish resume feeding. It is not irrational or improper to clean out the pond in mid-January if you get a balmy day. I personally will be cleaning my ponds in late January or early February. I'll scoop the pond bottoms until they are essentially free of particulate debris and leaves; then I will resume limited mechanical filtration to remove micro-fines that would remain suspended in the water. Within two days, the water will be sparkling clear and the fish will not be any worse for the wear. They will then face a springtime thaw with clean, clear water, and the parasites and pathogenic bacteria will not have any reasonable fuel.

If you are using a submerged media filter full of gravel aggregates, it is wise to distribute the media on the driveway and clean it thoroughly before the start of the year to be sure the filter is optimally cleaned before the

demands of fish wastes are put upon it in the spring. One common denominator in years past, when visiting ponds with ulcerating fish, has been an almost universal propensity to face spring-time with filthy ponds and filters. This inhibits good filtration which causes high ammonias and nitrites during springtime, and provides fuel and a haven for pathogenic bacteria and parasites. Regardless of the filter type you have, it should be in a lean, clean fighting condition by the time it's re-started in the spring.

Fall Pond Cleaning Summary

- Pond salted to 0.3% (see page 12)
- No fish feeding after 55°F water temperatures are achieved.
- No leaf litter or mulm in the pond filter.
- Caged cattle trough heater floating in the pond.

As we enter a critical time of year for our ponds and fish, you'll find all of the information available at KoiVet.com especially valuable. Doc Johnson's website section on winterizing Koi ponds also includes critical information relating to early spring koi keeping. You'll appreciate, too, the unbiased results of product tests that Doc Johnson performs without benefit of paid advertisement. This column is reprinted by permission from KoiVet.com.

Adopt-A-Pond's Wetland Curriculum Resource

A Toadally Awesome Wetland Guide for Educators

To date, 80-90% of Canada's urban wetlands have been destroyed. In southern Ontario alone, it is estimated that over 75% of the pre-settlement wetland base has been lost due to drainage, filling, or habitat alteration. This is a huge loss, as Canada has 24% of all wetlands on earth. Established in 1991, Adopt-A-Pond's mission is to conserve wetland biodiversity. Specifically, Adopt-A-Pond strives to accomplish these goals:

- restore, protect, and create local wetlands, emphasizing local hydrology, ecological function and bioregional constraints
- provide opportunity for individual action at the community level
- educate community members of all ages about the importance of wetlands and the species that depend upon them.

In response to the request by educators and their students involved in the Toronto Zoo's Adopt-A-Pond Programme, the Toronto Zoo and Picov's Water Garden Center and Fisheries joined forces to create the *Toadally Awesome Wetland Guide for Educators*. With the assistance and inspiration of many educators and the financial backing of generous donations and grants, the curriculum guide was designed to provide plans and resources for education and personal and collective action.

The Guide includes four basic study modules: Water, Wetland Ecology, Amphibians, and Environmental Issues. Each module outlines the Expected Learning Outcomes for that unit and

provides Background Information for Educators, a variety of student activities geared to different levels and Answers to the questions posed in the activities. A fifth unit highlights one of the most significant creators of natural wetlands in Ontario, The Beaver. Unit 9, Frogs and Friends: Fun for Pre-Schoolers and other Polliwogs provides learning opportunities for primary level students. Further out-of-classroom learning opportunities include Unit 7, Get Wet – Field Study Ideas, and Unit 8, a specially designed Zoo Experience. Also included are Amphibian Case Studies, a glossary, sources for hard-to-find materials, an outline of the outcomes specified by the Ontario Schools' Common Curriculum, other resources, and an index.

Each module outlines activities that relate to the topic. The purpose, appropriate level, curriculum links, and required materials appear in a box on the first page of each activity outline. Outcomes are broad based, practical life skills that may be adapted to any formal curriculum. Grade/age level activities are keyed to primary (4-8), junior (8-11), intermediate (12-14) and senior (14+).

Many pages are provided to copy as worksheets for student use. The 350-page Toadally Awesome Wetland Guide for Educators can serve as a format and resource for educators in any region of the continent.☛

This comprehensive curriculum guide is a publication of the Toronto Zoo and Picov's Water Garden Center and Fisheries and is available to educators at cost. Call P&G at 317-769-3278 or visit www.PondClub.com for more information.

Add-A-Sphere

By Jody Spence

One of the most enjoyable aspects of my pond is watching the fish as they swim playfully through the water garden. After fighting traffic for the hour-drive home, it is very relaxing to be greeted by all my little friends who come rushing toward me at first sight. It would be wonderful if I could see them...

Some friends came for a visit and showed me pictures of their pond with a new feature. I was amazed by the photographs of their fish. The fish were suspended above the pond in a large bubble of water, sitting on the surface of the pond. The fish floated in space, looking right at me. I was so intrigued I knew I had to have one.

Our newest pond accessory is the Add-A-Sphere™. The Add-A-Sphere™ is a globe that holds water above the surface of the pond. The globe allows the fish, tadpoles, frogs, and water bugs to swim above the surface of the pond, see-



ing the world around them, even as we can see them from a distance. I no longer have to be at the side of my pond to see my wonderful friends, my fish.

Installing the Add-A-Sphere™ was very easy. The stand is set into the water garden, and the globe rests on top of the stand. Once the stand and globe are in place, the air is removed from the globe. Naturally, I had several questions: Will the fish actually go into the globe? Will they suffocate? Will they overheat? How much maintenance is required?

Well, the Add-A-Sphere™ comes with a feeding pole which allows food to be added to the globe without getting in the pond. It was

amazing how fast the fish followed the food into the globe. No, they won't suffocate or overheat. They don't remain locked up inside the globe...they swim in and out at will. Maintenance-wise, the inside of the globe will grow algae, so the globe has to be cleaned periodically.



(Aquarium shops have wonderful sponges just for the removal of algae from glass!) But that little maintenance is well worth the enjoyment at the end of the day as I drive home from work knowing my little friends will be waiting, watching for me, greeting me from their sphere as I come home for a relaxing evening.☺

A special thanks to Dan Robinson of the Lone Star ZNA Koi Club in Houston for responding to our relayed request from so many read-

ers as to where to find the Add-A-Sphere™ that was shown in Grady and Virginia Joiner's pond in the Houston Pond Tour article in our last issue. (Visit their website at <http://www.lonestarkoi.com/>)

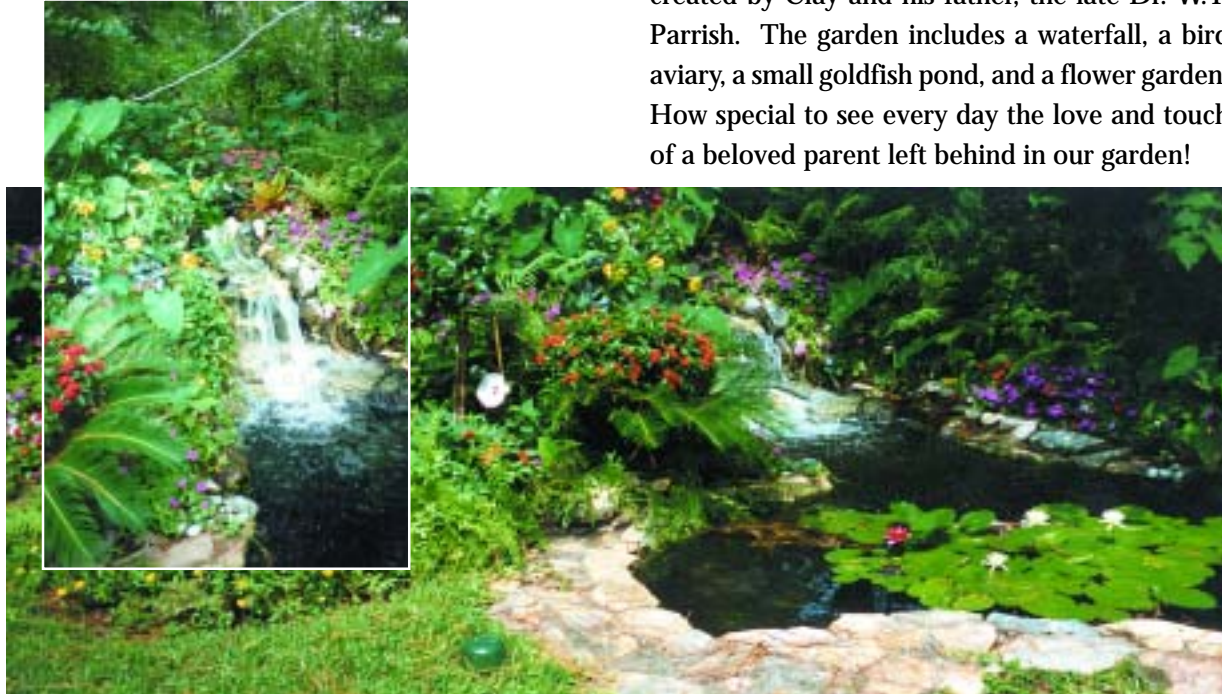
Thanks, also, to Jody Spence, who holds the distribution rights, for his quick response. You can reach Jody at Creative Water Gardens, 2725 W Kingsley, Garland, TX 75041 at 972-271-1411. Readers, you might want to leave your magazine 'lying around' with this page open...along with a Santa hint!



READERS' Pond Album

Clay & Allyson Parrish, Dothan, AL

Allyson's mother, Carol Goodman, sent us these photos of the Parrishes' garden that was created by Clay and his father, the late Dr. W.T. Parrish. The garden includes a waterfall, a bird aviary, a small goldfish pond, and a flower garden. How special to see every day the love and touch of a beloved parent left behind in our garden!



Clifford & Ruth Ann Huff, Warren, OH

Built in 1999, our pond is located in our back yard just off our deck. We have Koi, butterfly Koi, red cap orandas, fantails, shubunkins and tadpoles, ('presents from visiting bullfrogs'). We also have lilies, water lettuce, water hyacinths, and a variety of other plants. We enjoy listening to the sound of the waterfalls and feeding and watching the fish. This year we added ground lights and also an underwater light in the pond.



Growing Plants Indoors

by Helen Nash

The two primary factors to consider in growing plants indoors are light intensity and light duration or day length. Tropical plants, especially, are considered 'day-dependent.'

While you can get really serious about growing plants under lights, most of us just want to know how to keep the plant going through the winter. We need only know how to provide enough light so that the plant maintains its green leaves. If the plant's leaves begin to yellow and the stems turn weak and spindly, we know that insufficient light is forcing the plant to burn its stored food. Plants thrown into such stress need more light...now.

Where do we put our tropical plants indoors? By a sunny window! South-facing windows offer the brightest and longest duration of light in northern latitudes. East- and west-facing windows provide an intermediate amount of light, although in the western U.S., west-facing windows are comparable to south-facing windows. North-facing windows receive no direct light. Tropical plants, naturally requiring bright light, should be placed no further than 3 feet from a southern window or no more than 2 feet from an east or west window.

The other part of the equation is duration of light. Plants growing happily during the summer in northern latitudes experience as much as 15 hours of daylight. In winter, this may be reduced to only nine hours. You will need to supplement that nine hours with supplemental grow lights. A homemade light fixture can be created with a shop light fixture containing two tubes and a built-in reflector. Mount the fixture on a metal stand or in a shelving unit and use a lamp timer to

regulate operation.

Both the distance from the light tubes and the number of hours per day they are used determine the success of your efforts. For 40-watt household tubes, blooming plants should be about 2 inches from the bulbs. With higher wattage bulbs, you can increase the distance up to 6 inches. Foliage plants can be grown as much as 2 feet from the lights.

Not all light is created equal. Incandescent lights, the ones commonly used in our homes, emit light in wavelengths of orange-red but low in blue-violet. Besides producing heat that can easily burn plant foliage, the lack of blue-violet light causes the plants to consume their stored carbohydrates, weaken, and literally burn themselves out. Cool white fluorescent lights are less expensive with a longer life-span than incandescents and are used most often with foliage plants. However, being low in the orange-red range of the light spectrum, they must often be combined with incandescents. Special plant lights are more expensive but can be relied upon to supply necessary light in small setups.

Aquatic plants add yet another factor to the equation: water temperature. If you are tending tropical plants, maintain the water temperature in the seventies for the best results. Even with warm enough water, you'll want to withdraw feeding for 8 weeks to give the plants a chance to 'rest.'

Finally, be selective about which plants you will winter indoors. Remember that 'hardy' aquatics are true perennials that require a dormant period. Even though some may show a touch of green growth through the winter, do not force them to spend energy they really must conserve for their true growing period ahead.♣

Cleaning Up for Winter – AUTUMN LEAVES

You don't have to have trees in your own yard to have autumn leaves blowing into your pond. Even light winds provide music and transport to dancing leaves. A skimmer system, unhampered by surface aquatic growth such as floating plants and water lily leaves, greatly aids in sweeping the surface clear of falling leaves. You'll want to clean the skimmer basket or bag at least once a day to prevent blockage. Remember, too, leaves float on the surface but a brief time before settling to the pond bottom...and leaves fall all night long, too. Leaves collecting on the bottom can clog submersible pumps, even burning them up. Bacterial action begins very quickly, too, on those leaves, using up vital oxygen needed by your fish. Any depth of organic matter accumulation may not have contact with oxygenated water and therefore be subject to anaerobic bacterial decomposition – the by-product, of course, being deadly, fish-toxic hydrogen sulfide. (Lesson learned the hard way!)

Netting the pond is always advisable. Plastic bird netting

is readily available at most garden centers. If the netting is not large enough to cover your pond, use garbage bag twist-ties to connect enough pieces. Inserting a garden rake or broad-topped fixture in the soil of a potted plant within the pond gives you a higher point, like a tent, that allows the leaves to be swept from the netting. Do not allow the netting to drape into the pond water. Even if you remove the leaves every day or two, those that rest within the water can release brown tannic acid that discolors your water. Frogs, fish, and birds can also become entangled in the netting. Leave an area of the netting with access to the pond for any maintenance.

You'll make your autumn pond maintenance much easier if you keep your yard's leaves raked and bagged regularly. If you have used organic mulch around the pond's edge, pull it back as your plants begin to go dormant. This will keep mulch-dust from blowing into the pond where it adds to the sedimentary buildup on the bottom.♣

Pond Dialogue

– POND SAFETY

by Helen Nash

Share your thoughts!

I have friends here in the Indianapolis area who have a “farm-type” pond. A picture of Tina and Clyde Riley’s grandson appeared in my book, The Complete Pond Builder. Sitting on the end of the dock, the young child fished, bundled within a life-jacket. Along that same line, I have met pondowners who keep life jackets handy for every child visitor to their yards.

Ron Farmer’s letter of the loss of his grandson shares an unbearable tragedy. Sadly, he and his family are not alone. Last year in Flint, Michigan, a 15-month-old baby drowned in an abandoned, neighborhood pond that held only six inches of water, and here in Indianapolis an 8-year-old boy drowned this July in a subdivision retaining pond.

I remember too well the panic when my own 2-year-old escaped our fenced back yard. I rushed up and down the street frantically searching for her. In checking the backyard again, I discovered a hole in the fence. On the other side, seated with a cat in her lap, Michelle exclaimed, “Mommy! Wookit da kitty!” My sister Marilyn followed 2-year-old Heather from the yard and literally snatched her from a neighborhood pond and two feet of water over twenty years ago.

As parents of young children, a fence around our own yards seems more than prudent. Young children do have short attention spans. They will wander off...after a kitty or a butterfly, or just to move those little legs. The most diligent of parents cannot keep a child under observation every minute of the day, and it only takes a second for the child to disappear around the corner.

As a pond owner, a locked fence around the yard seems to me a necessity. Fencing our yards provides not only safety, but it also enhances our backyards as outdoor living rooms, private extensions of our homes.

Because no standard regulations exist within the industry, guidelines vary from community to community. Even the insurance industry as yet offers no set guidelines. One attorney spoke to me of repercussions – with no guidelines in place, over-reaction can occur. Unrealistic and impractical guidelines could become the standard. We need a dialogue about pond safety to aid our communities and insurance carriers in establishing appropriate guidelines.

I’ve often said that the backyard pond offers a wealth of science fair projects for our children. There are many lessons of nature, life, and responsibility to be learned from these small bodies of water. These same ponds offer us adults an aesthetic peace and tranquility at the beginnings and at the ends of our busy days.

As property owners, we have basic rights to use our property as we wish, so long as those uses do not contradict existing laws and ordinances. If we don’t entertain a serious dialogue about those rights in accommodation of safety responsibilities, we may find our personal property rights hampered beyond reason.

What do you think? What community or industry guidelines do you consider to be reasonable? What safety tips can you share with other pond owners?👉

Please send your thoughts to P&G at 1670 S 900 E, Zionsville, IN 46077; fax them to 317-769-3149, or E-mail them to www.pondandgarden.com.