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# Do You Have an Aquarium?

By Carolyn Weise

When I think of **MICROBE-LIFT**, I think about PL or TheraP, or even Sludge-Away first. Then I think about the Legacy foods that have done wonders for my koi (and goldfish). Then when I was in Holland for the big Koi and Pond show last year, I was impressed with the notoriety Clean & Clear is enjoying throughout the European scenery. With our product in Asia (AquaClean ACF-32), incredible remediation results were achieved in the River Xiba, China's waters which have been long polluted by industrial waste so that not even plant life could exist. By the end of the trial period, even marine life (fish) had returned to the tributaries, proof positive of **MICROBE-LIFT's** capacity to clean up the environment.

In my own pond, I had hit on the answer when I began using the combination of bacterial products. My friends never failed to remark on the clarity of my water. It was exactly the same filter, the same pond, and the same fish, even bigger than they were last year. The difference? **MICROBE-LIFT/PL**, **ML/TheraP**, **ML/Ensure**, **ML/Calcium Montmorillonite Clay** and **ML/Legacy Foods** made the noticeable difference. Never underestimate what the little microbe "bugs" can do.

Now, do you have an aquarium in your house?

**MICROBE-LIFT** is branching out even further, to the Home Aquarium industry. What is being done in all other areas, fish farming, aquaculture, ornamental ponds, household and lagoons, is ready for the aquarium fancier. **ML/Special Blend** and **TheraP** have already been in use available through aquarium stores, but now the hobbyist will have the specific Nitrifiers too, **ML/Nite-Out II**. We have test strips for ease of maintenance. These **MICROBE-LIFT** Test Strips contain 50 test strips in each container, twice as many as you will find in other brands. Test for ammonia, nitrites, nitrates, chlorine, chloramine and phosphates in your tank and save the lives of your prized fish. Use the test strips as your "first line of defense" and see that **KNOWLEDGE** is **POWER**.

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GRAVEL &  
SUBSTRATE  
CLEANER

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While it is our goal to provide an open forum to express the various opinions and ideas for water gardening, the views expressed in the articles are the opinions of the articles' authors and not necessarily the views of Ecological Laboratories, Inc.

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## about the editor

Carolyn is the Consumer Relationship Manager of Ecological Laboratories, Inc. and liaison to koi and water garden clubs in the USA and Canada. A retired social worker and long-time hobbyist, Carolyn has authored many articles for well-known magazines on all phases of the art of pond keeping and has three times been awarded "Koi Person of the Year". She has been a regular columnist for "Water Gardening Magazine" and "Pond & Garden Magazine", writes the Q&A column for "MacArthur Water Gardens", Boca Raton, FL, and is the articles editor for Mid-Atlantic Koi Club Magazine. In her spare time, she is settling into her new Florida home and building a 5,000 gallon koi pond.

## editor's letter



Spring is the time to put our creative energies to work. We've had all winter to think about what we liked and did not like about our pond, what changes we'd like to make, and what we think would guarantee success for another year. You've had time to consider the food you are feeding, stocking density, filtration, and planting schemes. Perhaps this year you will add the vegetable filter. Perhaps you will install the larger Bubblebead system rather than cull a few fish. Or maybe you have already decided which fish will have new homes and have found homes for them. It's time to add start-up bacteria and clean out any leftover leaves. Maybe this month you'll plan something different for next year, and not have any leaves in the pond in spring, 2008.

Seeing new life begin, birds return, and squirrels' chase each other tells me summer isn't far away. For those of you in the southern regions, summer may not be something you look forward to, but in the north, it's everything for a pond owner. For me, it's the beginning of a new life, a life in Florida. I am building my new pond while my koi wait patiently in New York. I am going to be swimming in my pool, overlooking the pond. Life is good! I just have to remember to which of these to add the PL and which gets the chemicals.

In this issue we have a really great collection of articles for you. It's all about ponds, and a lot of ideas to stir your imagination into shaping your water garden into a place of incomparable beauty and peace... a special Shangri-La for each of you. We have also included building materials and other hard goods to make your pond installation (or upgrade) even better! Find out how to care for your water plants, pests in the water garden, and care for fish in the pond.

Your editor,

*Carolyn Weise*

PHOTOGRAPH BY  
CAROLYN WEISE



this issue's  
*featured* **AUTHORS**

the **MICROBE-LIFT®** water gardener



**MARK KRUPKA**  
Vice President and  
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Mark received his Bachelor's Degree in Microbiology in 1975 and completed graduate work in Marine Microbiology and Bio-chemical Engineering at Rutgers University. His experience includes over 26 years performing pilot and full-scale studies to assess the treatability of organic waste streams, lagoons, ponds, and fish farms. Mark has extensive experience in the design, operation, and control of biological systems as well as the function of microbes in natural aquatic environments.

Mark has published numerous articles and technical papers on environmental microbiology, aquatic ecosystems, pond ecosystems, biological wastewater treatment processes, strain selection, bioaugmentation and bioremediation. Mark serves on the board of directors of the NAPP.



**BOB PASSOVOY**  
President Mid-West  
Pond & Koi Society

Bob Passovoy stumbled innocently into ponding eleven years ago when his wife decided she wanted a water lily. He now operates a 4400 gallon koi pond with 28 koi, a 550 gallon swamp with fancy goldfish, a filtration system that'll give you nightmares, and (because he left the room at the wrong time) is president of the largest water gardening club in the Midwest, namely the Midwest Pond and Koi Society, Illinois. Bob is a part-time dental surgeon and full-time water gardening family man, and a highly-respected member of the community. When not setting up shows, he is writing for club magazines and sharing his knowledge with newcomers.



**TOM BURTON**  
Veteran Mid-Atlantic  
Koi Club Member

Tom Burton has been active on the Mid-Atlantic Koi Club Advisory Board, was '92 Koi Person of the Year, Northern Chapter VP for many years, and following training at the University of Georgia's fish-vet course, founded MAKC's Health Hot Line, now featured in the Mid-Atlantic Koi magazine. A frequent speaker on the subject of pond building, and a sought out pond building consultant, he has been well received at the International Water Lily Symposium, Longwood Gardens, the New York Botanical Gardens and Hofstra University as well as a guest speaker at Canadian events. He is the second most published author in the well-received book From the Pages of MAKC News and is renowned for his design and building of one of the most admired ponds and gardens in the country.



**ROWENA BURNS, CMA**  
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Rowena Burns, head aquatic horticulturalist and co-owner at Burns Water Gardens has over 30 years experience. She conducts ongoing research into developing and introducing newer and better varieties of marginals, bog plants and water plants, which will be successful in the Canadian climate with over 130 varieties, including rare and unusual kinds. Rowena was a featured speaker at LO Congress, the large International Trade Show held every January in Toronto. Rowena's articles and photos have appeared in publications such as Ontario Gardener, the Limestone Gardener and Pondkeeper and she writes a regular column for the International Water Garden Journal. She is the first Canadian director of the International Waterlily & Water Gardening Society (on the board since 1995) and was President from 1999 to 2001.



**PETER PONZIO**  
Goldfish Judge

Peter has been a goldfish judge for a number of years, and led a committee which wrote the standards on judging goldfish in the U.S. and were adopted by the GFSA in 1995. In addition,

Peter has been past Chairman, Membership Chair, Treasurer, Secretary, and a contributor of articles to the GFSA. Peter's articles on goldfish have appeared in the Midwest Pond & Koi Society, Louisville Koi and Goldfish Society, the Northwest Koi & Goldfish Society, the Goldfish Report, and MAKC magazine. Peter currently writes and maintains the site [www.goldfishpages.com](http://www.goldfishpages.com).



**DAN PHILLIPS**  
North Carolina  
Koi & Water  
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Dan has been in the koi hobby for ten years. He served as an officer in North Carolina Koi and Water Garden Society the last five years. He was KHA certified in 2004 and is a regular health advisor article contributor for prominent hobbyist magazines. He is working on his third (dream) koi pond, 23,400-gallons + filtration at his home, and planning his first trip to Japan in the fall to celebrate his and his wife's 25th wedding anniversary. He enjoys attending, working and showing at koi shows. He is totally "Koi Kichi". He is an Electrical Engineer and writes telecommunications software.



**BETSY ABELES KRAVITZ**  
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Home Magazine,  
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Betsy Abeles Kravitz is a wife and mother of two teenage daughters in bucolic Jefferson, Ma., and has been in publishing for nearly 30 years. Currently she is thrilled to be doing marketing and advertising sales for New England Home, a regional magazine which celebrates fine design and architecture in New England.

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# A Water Garden

## and What it Takes to Make One

by Tom Burton

A water garden is really a lovely feature in a garden and can give endless hours of pleasure as a visual experience, a source of pride for the selection and arrangement of a vast array of water plants, and an aural source of stress relief by just the right sounds of water flowing or trickling or gently tumbling over a waterfall. For those who have planned this as a part of the total garden concept and combined it with a proper koi pond, the effect is truly dramatic. Part of the water from the koi pond filter systems is directed through the water garden providing mutual benefit by giving nourishment for the plant life from the nitrate rich water (from koi waste) while aiding in elimination of ammonia (that's why its often called a plant filter). So here are the basics:

**LINER:** Same 45 mil EPDM. If its part of the same piece there won't be any need to bond the water garden piece to the Koi pond piece.

**DEPTH:** Two feet. If you want to excavate the hole so that there's a shelf for plant pots to sit on, that's fine. Make it 12 inches below water level (as an example, lots of water lilies only need a six inch covering of water over the pot). Angle the sides no more than 20 degrees so that you can put plants right up against the side so the vegetation can spread out and cover some of the pond perimeter making it look more natural.



**SIZE:** Less than the koi pond I think is best but as big as you want it, really.

**BOTTOM DRAIN:** You'll be glad you did, but it will only be used when you want to clean out the crud that will accumulate in the bottom over time. It makes it so much easier than getting in there and mucking the thing out. I'd suggest a minimum of a three inch, and preferably a four inch bulkhead fitting in a depression in the center of the water garden with the same size pipe running to waste, controlled by a gate valve buried below the frost line. Access to the "T" handle to open and close it when you want is through a four or six inch piece of PVC from ground level. A simple "two finger" hook on a stick is all you need to operate it.

**PUMPS:** Not necessary if this is part

of the recirculation from the koi pond. If this is a stand alone without a koi pond, the only pump you need is to operate your waterfall and or streams (or fountains).

**SKIMMER:** Very nice to have in pollen season especially but useful all the time to keep the surface cleared of debris and dust.

**FILTERS?** Not necessary. For the few goldfish in the water garden, there's plenty of surface area for the good guy bacteria to live on and, the water plants will take up ammonia as well.

**ULTRA VIOLET STERILIZER?**  
Not really necessary



# Local Distributors—Providing Service Beyond the Sale

When in the market for pond liners, two important things to look for are the product type and availability. Many contractors turn to their local liner distributor for this information, and with good reason. Distributors can offer contractors many benefits, such as installation instructions, jobsite delivery, training and troubleshooting.

“With more than 17 years of experience, we are able to provide contractors with helpful product insight, handling and technology support,” said Rob Beausoleil, president, Aquarius Irrigation Supply of Norristown, Penn. “Contractors can come to us and receive their order same day, which saves them time, and they won’t have to worry about the damage that is associated with shipment.”

There are many lining products available in the industry today, but distributors have

been providing Firestone PondGard Rubber Liner to contractors for years. Based on EPDM (ethylene propylene diene terpolymer), PondGard is a high-quality, durable, user-friendly option for landscaping professionals. Safe for plants and fish, PondGard can be used for decorative ponds, streams, waterfalls, and other water feature applications.

“We’ve used PondGard exclusively for the last five years because it offers superior quality and Firestone provides excellent field support,” said Clinton Elms, specialty products manager, Ewing Irrigation of Katy, Texas. “It is an ideal lining product because there are no special tools required for installation, and it is available in a variety of sizes for different project scales.”

PondGard is also highly flexible for shaping around unique pond contours and its high tensile strength and exceptional puncture resistance allow for design features such as rough-edged rocks along the banks of a pond or stream. PondGard will not crack or split in cold weather conditions down to minus 40 degrees Fahrenheit.

“No other lining product compares to PondGard, because it offers easy seaming, excellent flexibility and it is so simple to use,” said Beausoleil.

Firestone PondGard is available at your local distributor. For more information about Firestone Specialty Products, please visit our web site at [www.firestonesp.com/ml1](http://www.firestonesp.com/ml1).



...continued from page 6

except perhaps in early Spring before the plants are fully developed and competing and eventually winning the contest for nourishment with the algae.

**HEATERS, AIR PUMPS, FLOW METERS, VALVES?** Except for maybe a couple of valves, none of these are necessary in a water garden.

**FISH:** Goldfish of one sex is the way to go. If you have both sexes living there you're a population explosion just waiting to happen. Goldfish are the rabbits of the fish world and in three to four years you'll have them coming out your ears. But NEVER!!! put koi in a water garden. Not only will they eat your plants when they get big enough but they'll root in the dirt and make a mess, tip the pots over, have babies, and with all those pots in there (spelled o-b-s-t-a-c-l-e-s) you can't catch them when you need to (and I've never known anyone who didn't need to at some time or another). Just don't do it. 🐟

## The Independent Retail Store Near You!

With the influx of box stores, the independent retail garden shop can easily be overlooked, but don't be so easily fooled. I have been browsing both the box stores and the independent garden stores. There is no way to describe the difference without experience, as I always say.

When I entered the first store which will remain nameless, but everybody knows it quite well, I immediately felt disoriented by its size. It was more like an old-fashioned department store (am I dating myself here?) and the entrance was right in the middle. I could not tell whether to go to the right or the left without directions. I wanted specific garden and pond products, not electrical wiring or a refrigerator. I didn't need any paint today. As far as the eye could see, there was nothing green and growing. But the most significant thing was that nobody asked if they could help me. I had to interrupt the checkout person to ask where the garden center was located in order to get my bearings. They sent me through the myriad of other things that I did not need, to finally locate, another door which opened into a dark and musty garden department in the rear of the store. Still, nobody asked if I needed help. That was the **BIG BOX STORE**.

Next, I drove to the local open-air Lawn & Garden Center. No sooner had I parked the car and opened my door than a man with a smile approached me, asking if he could help. Wow! What a major difference, and these two stores were only about one mile from each other, in the same community. Not only did I receive direction to the plants I had on my list, and the other pond implements, I was given a full description of what to expect when using it. And they were very helpful when I asked a few questions. That was the **INDEPENDENT RETAILER**. Now, I will ask you, in which type of store do you like to shop? 🐟

# Q. ARE YOUR KOI HEALTHY?



Are your koi healthy? How do you know? They can't tell you when something is wrong! Or can they? By being observant and knowing what the appearance & behavior of a healthy koi should be, you will be able to recognize early signs of a potential health issue.

The first step in recognizing a diseased fish is to understand the normal appearance and behavior of fish so that deviations from normal can be recognized. A "technical" term for this is ADR ("ain't doing right")! Behavior can be the first clue to a sick fish, lead to further examination of the particular fish and discovery of lesions or other signs of an infectious disease. Understanding the normal feeding response of fish is important, as one of the initial reactions of a diseased fish is that they go "off feed". Lethargic swimming, swimming at the surface and erratic swimming can all be indications of disease. A diseased fish may also swim very little and lie listlessly on the bottom with little or no response to prodding, or fish may congregate at a water inlet. It is important to recognize that these behavioral characteristics can indicate bacterial disease, but are also common behaviors fish exhibit when stressed by other infectious diseases, toxicants, or more often than not due to poor water quality.

Behavioral abnormalities, physical changes, and evidence of lesions are all important in making a diagnosis; however, clinical signs are seldom unique identifiers of a single disease. Clinical signs refer to a collection of observations made on an animal to assist in the process of diagnosing disease. Symptom is a term used only in human medicine and is what the patient can describe about his condition. Clinical signs are characteristics or conditions associated with disease and can be seen during an external examination of a sick animal, including behavioral and gross morphological (i.e. appearance,

form) changes.

External clinical signs can be good indications of the progression of infectious disease in fish and are important components of a clinical diagnosis. Again, the starting point is to have a good idea of the normal appearance and behavior of fish, ability to describe observed abnormalities and to realize that there may be many causes (primary, secondary/opportunistic pathogens) for observed signs.

The normal appearance of koi includes a healthy, shiny slime coat, nice healthy looking red gills, no reddish sores (ulcers, abrasions, predatory injuries), no raised scales and no frayed or split fins.

The normal behavior of koi depends on water temperature and time of year. When water temps are above 50°F, your koi should appear hungry (more so

as the temperatures rise, up to about 85°F). It is not normal for koi to isolate themselves from the rest of the herd. It is not normal for koi to always hang out under the water fall or be gasping/piping at the surface. It is not normal for koi to repeatedly flash (on occasion is normal) off the sides or bottom of pond. The swimming movements of koi should be smooth and fluid from side to side as the koi glides upright thru the water. A koi "hanging" in the water with head or tail at an upward or downward angle is not normal behavior. When water temps are below 50°F, koi begin to slow down, as their body temperature is the same as the water temperature. They stop eating when water temperatures drop below 45°F. Their movement slows and mostly they huddle together on the bottom of the pond semi-motionless until next Spring comes around. If they begin to lie on their side on the bottom of the pond it may be water temps are getting dangerously low (<35°F). Koi can survive at these temperatures, but as the water temperatures approach 32°F, it becomes very stressful on koi. Their ability to survive depends upon their health condition, the speed of onset and duration of these low temperatures.

Because clinical signs of disease resulting from






bacterial pathogens are similar to other causes of disease such as toxicants, poor water quality, poor nutrition, or other infectious agents, it can be easy to misinterpret the cause of disease. To help reduce misdiagnoses, it is important to consider the speed of onset of disease, the season of the year, changes in water quality, access of fish predators to the culture environment, and changes in the feeding regime. When clinical signs can be attributed to bacterial infection, lesions are often chronic and progress over days to weeks, and if clinical signs of disease occur rapidly other disease agents should be suspected. Bacterial infections in fish are often a function of the season of the year with higher incidence at moderate temperature regimes of spring and fall, thus clinical signs of disease during summer and winter should receive more scrutiny and consideration of other causes.

When you observe a sick koi and are able to rule out water quality and parasites as the problem, you can say "it is probably a bacterial disease", but it would be nice to be able to go further and make an informed speculation as to exactly what disease might be involved. In general, poor water quality conditions and parasites should be ruled out before beginning a bacterial diagnosis, as poor water quality and parasites distress more koi than bacterial infections. The cause of koi health problems in

order of likelihood are water quality -> parasites -> bacterial -> virus, fungus.

In summation, understanding the normal appearance and behavior of your koi so that deviations from normal can be recognized is the first step in knowing if your koi are healthy. With this understanding at your disposal, you have the ability to recognize and address any potential health issues early on before they have a chance to worsen. Treating health issues as soon as they appear gives your koi the best chance at a long, healthy life and many years of enjoyment for you, the koi hobbyist.

Dan Phillips  
KHA

Reference: Dr. Richard Strange, KHA Short Course on "Common Bacterial Diseases on Koi" 



MICROBE-LIFT®  
MEDICATED FOOD

“... Treating  
*health issues* as  
soon as they  
**APPEAR**  
gives your koi  
the *best chance*  
at a long,  
**HEALTHY**  
life ...”



MICROBE-LIFT®  
ROMET TC



PHOTOGRAPH BY CAROLYN WEISE

# Testing your Pond's Water

by Mark Krupka

On many occasions we will get calls from people describing a problem with their pond and asking what to do to resolve it. That is generally the extent of the information they provide. I often liken this to going to your doctor, telling him you're sick and asking what you should do. What are the chances that he'll write a prescription before running some routine tests to figure out what is wrong? Right, slim and none.

To troubleshoot your pond issues it will always help to run some tests on the water in your pond because there is always an explanation for what is happening in your pond. To take this a step further, it is not enough to test your pond water just when there is a problem. This obviously helps, but it is even better to test your pond regularly even when things look great to establish some "baseline" numbers since every pond will have its own unique equilibrium. Usually when things change in the condition of the pond this will be reflected by changes in the "baseline" numbers of some of the key parameters. We recommend testing your pond at least weekly for all of the key parameters and daily when you are having problems. This does not have to be time consuming nor expensive.

Most pond test kits are available in the form of colorimetric tests where the kit has either dropper bottles of reagent or the reagents are on a block on a "dip stick". The dip sticks come in two forms: ones with reagent panels, which change when immersed in the water and the other with the reagents that elute off the strip into the water and change the color of the water much like the dropper kits, except they are easier to use. The color of the water or the color panels are then compared to a chart to determine the chemical values.

For a higher degree of accuracy there are some more expensive options like a dissolved oxygen (D.O.) meter for monitoring the dissolved oxygen levels, and a field spectrophotometer, which measures the results of colorimetric tests more accurately than the human eye. Most people may not be able to justify this type of expense but someone who has a sizable investment in prize Koi or other exotic fish may find this to be a reasonable way to protect their investment and keep their fish as healthy as possible. With show fish the best water conditions may be just the edge needed to grow champions.

"RUN some tests on the *water* in your POND because there is ALWAYS an explanation for what is HAPPENING in your pond."



Parameters to monitor for:

- pH
- Chlorine/Chloramine (if using city water to fill, top up or perform water changes)
- Ammonia Nitrogen
- Nitrite Nitrogen
- Nitrate Nitrogen
- Alkalinity
- Phosphate
- Hardness
- Dissolved Oxygen (Optional)

It is a good idea to keep the results in a small pocket notebook or set up in a spreadsheet on your computer. If you are well versed in a spreadsheet program you can even set up some graphs to easily detect variations as they begin to occur. Once you get a feel for the normal ranges you will often be able to detect quantitative changes (changes in the values of the parameters) before you observe qualitative changes (observable changes) in the pond.

Ecological has a line of test strips that allow you to test for all of these parameters with the exception of dissolved oxygen. Several of these (pH, nitrite, nitrate, alkalinity, hardness) are dip strips, which are the simplest to use. The remaining ones (ammonia and phosphate) are reagent strips because there isn't a way to put the reagents for these tests on a dip strip. The key to the superior accuracy of Ecological's test strips and reagent strips is in the comparator charts for which we use higher resolution printing processes that make it easier to accurately identify the correct color and corresponding concentration.

In previous articles, we have talked about the nitrification process (the biological conversion of ammonia nitrogen to nitrate nitrogen) and why it is important to monitor the various forms of nitrogen and how they are affected by pH and other factors. In future issues we will discuss some of these other parameters, why they are important to monitor and what effects they have on the fish and plant life in your pond. 🌿



MICROBE-LIFT® TEST KITS

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**BEFORE**



**AFTER**

**GreenClean** Granular Algaecide works on contact to control algae in water gardens, ornamental ponds, fountains, and waterfalls. GreenClean begins fighting algae blooms immediately, releasing vital oxygen as it biodegrades. Use GreenClean as a curative or a spot treatment – ideal for water features containing aquatic life and plants.

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AVAILABLE IN 2, 8, 20 AND 50 LB SIZES AND EASY-TO-USE TABLETS

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BIOSAFE SYSTEMS: THE BIOSECURITY COMPANY

[www.biosafesystems.com](http://www.biosafesystems.com)

## In Other Lands

by Carolyn Weise

I had a most exciting adventure in Holland in 2006 when I flew over for their Koi & Pond Days last August. It was five days of intrigue and suspense being alone in a foreign country. But I was not really alone... Microbe-Lift was with me wherever I went.

When I boarded the plane at JFK I expected to sleep for the duration and awake in Europe, rested and refreshed. That was an unrealistic expectation. The plane was filled with over-zealous travelers who must have been told to exercise every hour to keep from cramping up or something. So, up and down the aisles they went. It was like a subway in Manhattan.

When the plane landed it was just the beginning of a three hour road trip over flat Netherlands countryside. In fact, the railway station parking lots were not filled with cars, they were filled with bicycles. Everybody rode bicycles! The Microbe-Lift distributor, SIBO, was my tour guide, safely depositing me at my destination. And while they have some very healthy lifestyles, they also have some that I questioned. They loved hot dogs and something called "coquettes" with French Fries. I am a finicky eater when away from home anyway.

The show site was enormous, taking up only a fraction of a huge estate (castle grounds, actually) in Arcen. The first people I met were the American koi judges so I was assured that there would be somebody with whom I could communicate easily. Others tried, but didn't understand the language. Browsing through the vendor booths I found Microbe-Lift in almost every other display. They have Clean and Clear over there, not PL, like we do over here, but they all recognized us by the SMELL and agreed that it WORKS WELL in the pond. As long as it does the job, nobody cared what it smelled like. Once it enters the pond, there is no more smell and the dirt disappears like the container says... in whatever language. That is not to say they don't sell Nite-Out II, Sludge-Away, PL Gel and a few others, because they carry them too.

There were other things that I noticed while in Holland. For one, there are no non-smoker's rights that I could find, at least not in the small cities and towns. The doors and windows stand open and smoking is allowed everywhere. I was taken by the gracious hospitality of the hotel workers where I stayed. They did everything to accommodate me, including carrying my large and cumbersome luggage up and down the spiral staircase, three flights (which they considered only two floors). The man carrying the suitcases was no bigger than I am but in much better shape. When we got to the top, I could hardly



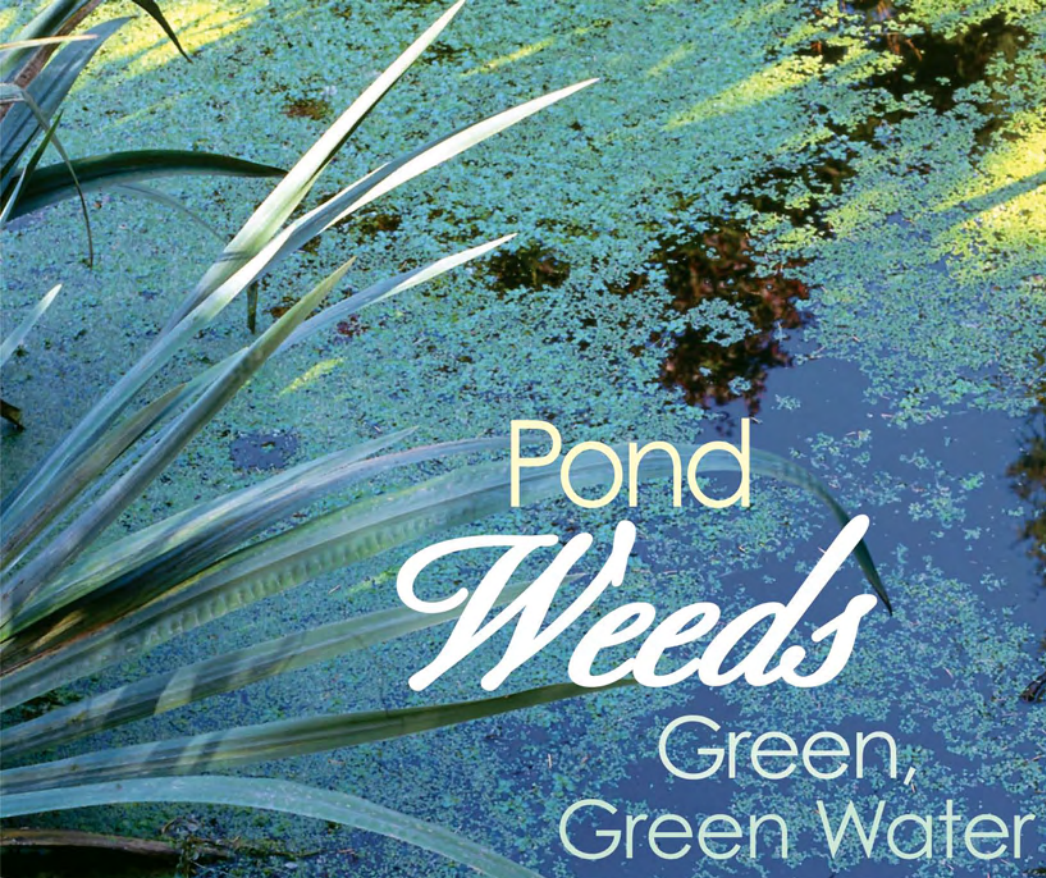
PHOTOGRAPH BY CAROLYN WEISE



breathe. And the show site had pay toilets. I didn't realize that I was supposed to pay, not understanding the language, until much later in the day. Luckily I was not arrested for jumping a turnstile for a mere 30 cents, or whatever it translated into. And did I mention the rain? It was a veritable monsoon, about five times daily. It didn't even slow down the local crowd. And five minutes later, you could hardly tell it had rained. But the bed was comfortable, the hotel food nutritious, and the show was wonderful... with Microbe-Lift/Clean & Clear right up front! 🌿

PHOTOGRAPH BY CAROLYN WEISE





# Pond Weeds Green, Green Water

by Rowena Burns

The best-balanced pond is a living world – an ecosystem in miniature – with the plants, the fish, bacteria, zooplankton and even algae forming a complete cycle of life. However, like many beginning ponders, you may be horrified at the appearance of algae in your pond! You are quite sure that you have done something terrible and are failing at the new responsibility as head pond-keeper. Algae growth is often the first life that appears in a new or cleaned pond – either green water (pea soup) algae or string algae (blanketweed). Actually, you should consider the algae growth the first success in your pond – you have grown a primitive form of plant life!

Believe it or not – algae performs a vital service to our pond environment. If a lot of algae starts developing in your pond, it is an indication that there are excess nutrients present, especially nitrates and/or phosphates. Algae in your pond can actually be a good thing! It warns you that you have a problem in the pond, and helps control the excess nutrients and minerals until you can correct the cause. The fish do not mind green

water, in fact, they are often happier in a somewhat green pond because it is difficult for predators to see them.

An alga is just a primitive form of plant – there are actually hundreds of different kinds of algae, even some that look very similar to oxygenating plants. We need to discourage algae and encourage the higher plants, which will absorb the excess nutrients and of course, beautify our ponds. The two kinds of algae it is necessary to control are the free floating or green water algae and the string algae. The thin film of algae that forms on every surface in a mature pond – the sides, the rocks, the liner, and the plant containers – is an extremely important algae that is

*“Believe it or not – algae performs a VITAL SERVICE to our POND environment.”*

desirable in the pond – it is home to the beneficial bacteria and zooplankton which keep your pond in healthy condition. Without it, you will find it much harder to reach a good balance.

The first algae appearing in the spring is usually the ‘pea soup’ kind – when your water turns green. This is

very common, as the algae uses up all the nutrients from fish waste, leaves and other rotting things in the pond from the winter. Later in the summer, when your pond water becomes clear, the string algae starts to grow on rocks, plants, or wherever it finds a surface to attach. It loves water with high pH, and lots of nutrients. Waterfalls and streams are particularly prone to string algae growth, probably due to the high oxygen levels and plentiful sunlight.

Prevention first requires good housekeeping – Keep tree leaves and other debris from falling in your pond, and remove fading leaves and blooms from your plants. Leaves that sit in the pond water for a couple of weeks before being removed have already added as much as 50% of their nutrients to the water (Just think how little time it takes to make tea!). The next most common cause of excess algae is overstocking with fish – the fish waste and uneaten fish food both stimulate algae growth. The inclusion of a plant filter, a bog filter or some type of biofilter in the pond system will accelerate the natural biological cycle. The regular addition of beneficial bacteria will help break down sludge, digest the nutrients, and transform it into a form that plants can absorb. Barley straw as it decomposes also inhibits the growth of algae. A properly sized UV light can be very useful in hastening the clearing of the pond, especially when it is cool and the plant and bacterial life are semi-dormant.

The control of algae in your pond is not complicated – it just requires attention to the basics of good pond-keeping. Remember, the heavier the organic load in your pond (from fish waste, extra fish food, leaves etc.) and the higher the pH and mineral content, the greater potential exists for algae growth in your pond. Assisting nature by increasing the beneficial microbial activity, zooplankton, and plants in your pond is the best and most long-lasting way to control algae. Enjoy your pond – and remember – algae is not the Green Monster – just a weed in the water garden! 🌿

# Come On In! The Water's Fine!

By Betsy Kravitz, *New England Home Magazine*  
and Bob Gogan, *Stoneworks Ponds*

Having a pond in one's backyard is no longer just about gussying up your property. Today's ponds are as vast as the imagination and wallet allow. These ecosystems are a recreational treasure as well. These beautiful ponds are so much more than mere decorations; they can be a source of recreation and education. It's not uncommon now to create ponds that your family can even swim in.

There is no longer a need to have "either" a pond or a pool, as my friend Bob Gogan of Stoneworks Ponds in Moosup, CT has proven many times. It is possible now to "have it all" and create the environment you used to merely dream of. No longer does Donald Trump or Hollywood have a copyright on that type of design. You, too, can have the whole package and your family can languish on steamy summer days enjoying the hottest backyard trend.


My own pond is a natural habitat for everything from appreciative local birds, koi and goldfish, to snails, dragonflies, snakes, turtles and frogs. It creates a rich and inviting visual and audio palette that enhances our property both day and evening with magical sights and sounds. I don't swim in the pond. I go to the lake.



Bob built our pond based on my vision and the limitations of a heavily treed backyard landscape. We first decided to install the pond in time for a 75 person brunch honoring our daughter, in late summer. It was an investment in our home, not just decorations we would spend money on and then throw away after the event. The pond was designed to compliment our surroundings with minimum upkeep and maximum pleasure for the layperson. Needless to say, it was a huge hit not to mention the ideal attraction for the youngest of our guests.

Bob's own large pond displays his personality. He delights in creating these fantasy environments which he enjoys as a water-filled playground.

If you are squeamish and don't care for swimming with your fish, or have a compromised immune system and can't enjoy this type of entertainment, there's no reason not to enjoy it from the sidelines. After all, somebody has to take the photographs. This interactive process is part of the charm of owning these systems. It is not a passive relationship. The gurgling tumbling waters that beckon you and the wildlife depend upon the humans to maintain the community. 🌿



"Today's PONDS  
are as *vast* as the  
IMAGINATION  
and *wallet* allow."



PHOTO BY  
PORTRAITS BY  
NAN, LLC  
PUTNAM, CT.



For more information,  
to see examples of Bob's  
work, and plan your  
magical pond go to  
[www.stoneworksponds.com](http://www.stoneworksponds.com).

# featured **MICROBE-LIFT® dealer**

**Carolyn:** Hi, Bob – how did you get started in the water gardening business?

**Bob:** I was a Well Driller for 9 years. I was disabled for 5 years, after a 20' fall from my well rig. From this, my doctor suggested a change of occupation.

**Carolyn:** What about this business do you find most gratifying?

**Bob:** The joy I see in their eyes after the pond is complete and running.

**Carolyn:** What is the most frustrating part of running a water gardening business?

**Bob:** The wrong advice that is tossed out from a lot of wanna bees.

**Carolyn:** On the average, how many hours do you put into your work, helping customers, keeping shelves stocked, building ponds, giving advice?

**Bob:** 18 hours a day.

**Carolyn:** Do you have a family? And how does your family feel about you spending so much time with customers?

**Bob:** Yes, I have a family. They are very understanding and supportive.

**Carolyn:** Where did you get your knowledge from?

**Bob:** I do a lot of reading and made plenty of mistakes on my first pond. Learn as you go...

**Carolyn:** Who helps you when you don't know how to answer a customer's question?

**Bob:** Research with Corporate Company.

**Carolyn:** What products do you get the most call for?

**Bob:** Microbe-Lift® bacteria, Fish Food, Plants and Soil for water gardens.

**Carolyn:** What would you like to say to your customers?

**Bob:** I would like to thank them for giving me a great 7 years, and hope to continue for many more. I love this business and I love my customers!

We are spotlighting your MICROBE-LIFT DEALERS by bringing you interviews with the people who actually serve you and have the information that will benefit your hobby! And that's what Ecological Laboratories, Inc. is all about...

**BOB GOGAN, STONE WORKS PONDS AND SUPPLIES,  
Moosup, CT (860) 564-9663  
[snomocha@stoneworksponds.com](mailto:snomocha@stoneworksponds.com)**

## WATERMARK™ BY LITTLE GIANT

WaterMark™ by Little Giant is a complete line of water gardening and Koi pond products that offer innovative technology to help simplify installation and reduce pond maintenance. From innovative biological filtration products to efficient pumps and durable liners, dramatic lighting to basic plumbing fixtures, WaterMark is the most innovative line of professional-quality water garden components you can buy. The line-up features vortex pumps, pond skimmers, biological waterfall filtration units with BioVort™ technology, energy saving programmable LED lighting and a complete line of fish food, water treatment and pond cleaning products. Read on — there's always something new from Little Giant, because they're never done creating innovative solutions for the home or garden.



### SKIMMERS

WaterMark skimmers were created to provide an efficient, effective method of maintaining a beautiful water garden. An easy flow-through design combined with simple installation and maintenance offers an ideal solution for any existing or new water garden or Koi pond. The skimmers provide pond surface cleaning—removing grass, leaves and more. Large biological brush filters increase surface area, enhancing the growth of beneficial bacteria and breaking up small debris. A removable inlet screen inhibits fish, frogs and other aquatic life from entering the skimmer.

### BIOLOGICAL WATERFALL FILTERS

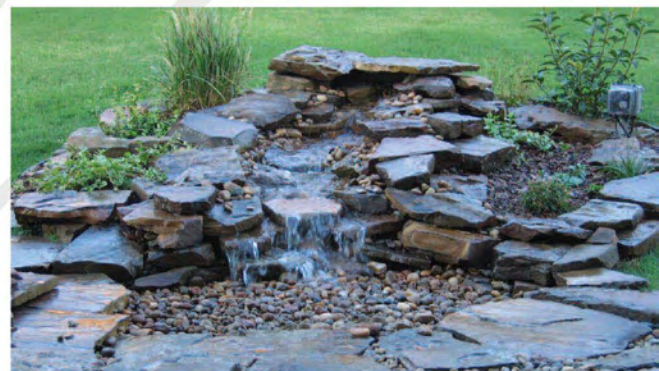
WaterMark biological waterfall filters are created to mimic a natural waterfall while helping maintain a balanced ecosystem and decreasing maintenance time. Easy to install, the waterfalls are constructed with a 14" or 23" flow opening and can be retrofit to any existing water garden. The intake to the filtration unit is located on the bottom of the system, allowing water to "up-flow" through the filter pads. Complete with biological media included in a mesh bag, the waterfall becomes an extremely effective biological filter. The biological waterfall filters include a vortex separator and up-flow design through Matala® filter pads, providing less maintenance and better filtration.

### SIMPLY FALLS™

For the soothing sounds of waterfalls without the maintenance, WaterMark offers Simply Falls™. With its innovative design, Simply Falls allows water to be pulled in through the multiple inlet vents and pumped to the biological waterfalls or other containment chamber. The sturdy round molded polyethylene lid and housing makes it easy to conceal under rocks, gravel or plants. Installed at the lowest point of the stream, Simply Falls collects water as it seeps into the ground, pumping it back to the falls unit to flow down again and again.

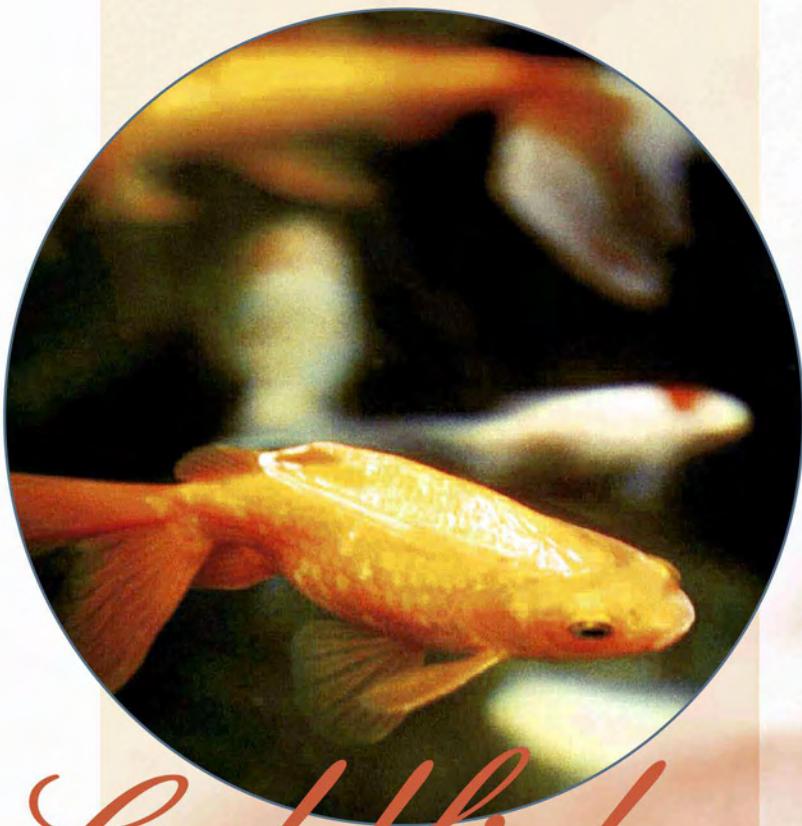
### PUMPS

WaterMark pumps serve as the heart of a pond, meeting the rigorous demands of circulating water throughout the pond and filtration system about once per hour. Constructed with durable material for the outdoor environment, WaterMark pumps are engineered for continuous operation and maximum energy efficiency. Your one-stop-shop for pumps, Little Giant has been producing the broadest and most reliable line of pumps on the market since 1941.



Increase customer satisfaction and profitability, or add tranquility to your own backyard by stepping up to WaterMark. The WaterMark line has been designed for years of trouble-free service, increased customer satisfaction and unparalleled customer service. For more information on WaterMark, please call 1-888-271-1368 or visit the Web site at [www.watermarksolutions.ws](http://www.watermarksolutions.ws).





# Goldfish

## IN PONDS

by Peter Ponzio

As the warmer weather approaches, people begin to prepare their ponds for the Spring and Summer months. Part of this preparation involves cleaning debris which might have blown into the pond during the winter season, starting-up waterfalls and filtration systems, and planting marginals around the perimeter of the pond.

For those people who keep goldfish and koi, this time of year may mean re-introducing fish into their ponds, or preparing their fish for feeding, if they wintered outdoors.

While most people are comfortable with keeping koi in their outdoor ponds, some folks are unsure if goldfish can be kept in outdoor ponds, or if all varieties can be kept in ponds. With the exception of Celestials and Bubble-eyes, all varieties of goldfish can be kept in outdoor ponds.

Certain varieties, especially single-tail types, do well in outdoor ponds. Fantails and Ryukins, both hardy types, are also adapted to pond-life. Even the so-called "show quality" fish, such as Orandas, Telescopes, Ranchus, and Lionheads do well in outdoor ponds. In fact, in the Far East, all goldfish varieties, including Celestial and Bubble-eyes, are maintained in small, usually breed-specific, ponds.

The best type of pond for a goldfish is generally

rather small, six to eight foot in length, and from three to five feet in width, dedicated goldfish pond. Make sure that the pond depth is greater than two feet to discourage easy predation by raccoons and birds (especially herons and egrets). A simple filter should be added to the pond to ensure that biological filtration is occurring. These dedicated goldfish ponds can be easy to maintain, and will provide a healthy environment for your fish. The attached picture shows just such a dedicated goldfish pond, complete with biological filter. Goldfish will do well in this type of pond, with excellent growth rates, and vivid colors. You will probably experience a few spawns during the course of the summer, as the combination of longer days and warmer water is ideal for spawning.

Goldfish can be added to a koi pond, and will usually do well with koi, especially the single-tail varieties, which often swim faster than koi, and will be able to get plenty of food. The double tail fish will usually do okay with koi, but may have a more difficult time competing for food.

Goldfish and koi are capable of inter-breeding, but the resulting fry will be sterile. The resulting fish are usually not very attractive, and tend to be mottled in color. Some koi farmers have attempted to breed back these cross-bred fish into their koi stock in an attempt to improve the vitality of their brood stock, since these hybrid fish are very hardy. Unfortunately, since the hybrid fish are sterile, the cross-breeding does not work.

Most goldfish can be over-wintered outside, just as in the case of koi. If you are concerned about damage to your fish, you can easily bring the fish inside to over-winter in their aquariums. Just remember that if the aquarium was empty during the summer, it will probably have to go through a cycling period, just as if the aquarium were new.

Hopefully, this article will have provided you with some information on keeping goldfish in ponds. We'll have more articles in the future about goldfish; in the meantime, enjoy your pond this Spring and Summer. 🌿



PHOTOGRAPH BY RICHARD WOLFERT

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## A Tale of Two Koi by Ken's Fish Hatchery

The sun descends behind the waterfall that encompasses the right corner of a small pond otherwise known as home to Hideki and Kaz, two Japanese Koi fish. As they swim lazily about in their watering hole without a care in the world, Hideki is surprised at the sight of a flickering light above him. Prodding Kaz to rise to the surface, together they make a discovery that will forever change their lives...

**Hideki:** Dude, WHAT is that?

**Kaz:** I dunno man, but it's like getting brighter.

**Hideki:** Yeah. The darker the sun gets, the brighter this new light gets.

**Kaz:** Look at all the bugs getting close to it.

**Hideki:** I dare you to jump up and touch it.

**Kaz:** Like, ok, man.

At the exact second that Kaz wiggles his tail to prepare a jump, the new light mysteriously flings a large bug into the water.

...continued on page 19



...continued from page 18

**Kaz:** Whoa, man. Like, I ain't jumpin' up there.  
**Hideki:** What happened to the bug dude? Is it dead?  
**Kaz:** I dunno man.

The two fish propel themselves over to the bug that is now lying on top of the water wiggling madly. It appears that the bug is only wounded and not dead.

**Hideki:** I dare you to eat it.  
**Kaz:** Ugh, a bug?  
**Hideki:** I bet it's tasty, and you'll like it.  
**Kaz:** Then you eat it.  
**Hideki:** Sorry dude, but you get the first bug. Do it... I dare you!  
**Kaz:** You do it.  
**Hideki:** Come on man. Eat the bug, and I will polish your scales for a week, ok?  
**Kaz:** Oh, alright.

The two fish have been so engrossed in their conversation about the wounded bug that they have failed to notice the dozens of other bugs that have now also been stunned by the new light and thrown into the pond. Kaz, while making a most horrible face, prepares himself for the worst. Hideki on the other hand is pleased that yet again he has tricked his brother into what he is sure will be a most unpleasant task. Dark has now fallen all around the outskirts of the little Koi pond, but the pond itself has a beautiful luminescent glow from the new light. In fact it has just enough of a glow for Hideki to see a rather satisfied look on Kaz's face as he appears to enjoy the bug. Hideki is stunned. Kaz looks happy.

**Hideki:** WHY ARE YOU SMILING?  
**Kaz:** That was good, man! Crunchy, gooey, and real good.  
**Hideki:** I want one. Give me that bug back.  
**Kaz:** It's gone man. It's in the belly. Look around man. The bugs are everywhere.  
**Hideki:** They ARE everywhere. Why?  
**Kaz:** Must be the new light man. It's knocking them in the water, but they ain't dead.  
**Hideki:** WOW! These bugs are GOOD. Why haven't we eaten them before?  
**Kaz:** Never had the light, man, never had the light.



PHOTOGRAPH OF THE BUG-O-MATIC FEEDER  
SUPPLIED BY KEN'S FISH FARM

Bugs have actually been the #1 fish and frog food since the beginning of time. The main problem with most commercial "bug lights" is that they fry the bugs to a crisp. The Bug-O-Matic Feeder is designed to cripple a bug but leave it to flutter around on top of the water in a 6 to 8 foot circle. User friendly, it simply plugs in to any standard outlet and hangs above your pond. Economic and automatic, the Bug-O-Matic is controlled by a photocell that turns the unit on at dusk and off at dawn. 🌿

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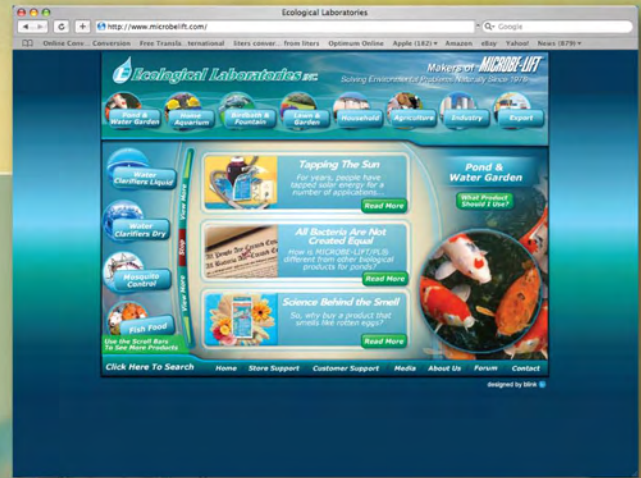
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- An Informative DVD presentation on pond products.
- A Calendar of National KOI and Water Garden CONSUMER Events that we attend.
- Nationwide MICROBE-LIFT Dealer Directory.
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- In which of the following are you primarily interested? (check all that apply)
 

<input type="checkbox"/> Plants	<input type="checkbox"/> Landscaping
<input type="checkbox"/> Fish	<input type="checkbox"/> Equipment for your pond
<input type="checkbox"/> Filtration	<input type="checkbox"/> Predator Protection
<input type="checkbox"/> Water features	<input type="checkbox"/> Education about your hobby

- Which of the following water garden oriented magazines do you read regularly?
 

<input type="checkbox"/> Water Gardening	<input type="checkbox"/> Pond Boss
<input type="checkbox"/> Aquascapes Lifestyles	<input type="checkbox"/> Koi USA
<input type="checkbox"/> Ponds Magazine	<input type="checkbox"/> Mid-Atlantic Koi Magazine
<input type="checkbox"/> Other: _____	

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- Which of the following is most true of your purchase of this issue of The Microbe-Lift Watergardener magazine?  
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<input type="checkbox"/> My Microbe-Lift dealer offered it to me	<input type="checkbox"/> Saw it advertised online.
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<input type="checkbox"/> My (koi or water garden) club talked about it.	

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