

PONDTRADE™

Serving Professionals in the Pond and Water Feature Industry

WET AND WILD

Native plantings revitalize wet meadow ecosystems p.36

www.pondtrademag.com



S A V I O
EXCELLENCE



NEW! 1/2 HP EcoFountain



Anjon's EcoFountain adds elegance to your pond, oxygen for your fish, all while preventing algae growth.



Includes 3 Spray Pattern Nozzles



Classic V

Trumpet

Lily

Big Frog Eco Drive Pumps



- Engineered for 24 hour continuous use
- Full 2-year warranty
- Fish safe – Contains no oil
- Designed for low head applications to work with 90% of all ponds
- Overload sensor shut-off protection to keep pump from overheating or burning out

Professional Bottom Aeration Kits

- Two 10" diffuser plates with ultra-fine bubbles
- Secure cabinet for pump storage
- Reliable rocking piston air compressors
- Self-sinking and weighted diffuser and tubing



NEW!



BEFORE



AFTER

Maintain Pristine Water

Improve water quality, eliminate algae, and reduce organic matter with the GreenClean pond line.

"I sprinkled it [GreenClean® Granular Algaecide] lightly over algae patches in a small pond water feature. Within a couple of days—algae has disappeared. Perfect!" –Perry

Anjon Manufacturing Serves Irrigation & Landscape Suppliers, Garden Centers & Nurseries, Pond & Water Feature Distributors with More Product Lines than Any Manufacturer.

sales@anjonponds.com

www.savioeng.com & www.anjonmfg.com

800-553-5605



1.888.273.3088 | BioSafeSystems.com



21

FEATURES

8 Swimming with Reptiles POND CONSTRUCTION

When you build a recreational pond in Florida, you never know who (and what!) you might attract to the water. **Jason Duffney** shares the story of a zookeeper's dream pond build.



36

14 Water Secrets Revealed!

Methods of effectively battling harmful algae blooms and bio-muck accumulation vary from pond to pond. **Patrick Simmsgeiger** reveals industry secrets that can help minimize the use of chemicals.

21 Sealing the Deal

PVC, EPDM, RPE ... oh my! It might sound like alphabet soup at first, but as **Freddie Combas** explains, choosing the correct liner for your pond build is essential to its structural success.

28 Bonsai!

When **John Magyar**'s customer ordered a pondscape with bonsai trees, it opened his eyes to the delicate art and massive visual impact of these miniature plantings rooted in Japanese tradition.

33 Winners and Grinners

The winners of our Water Artisans of the Year contest from the 2020 pond season share their trophies and their feelings about what it means to win.

36 Wet and Wild

Do you know the difference between a wetland and a wet meadow? **John Mark Courtney** has the answer in this issue's cover story, which explores a selection of native wet habitat plants that help orchestrate the ecosystem.

41 Diagnosis: Koi LANGUAGE OF KOI

Taro Kodama shares a handy 10-question checklist that you can use when you notice one or more koi acting under the weather. Before you call on an expert, make sure you gather this critical information.

46 Finding Your Roots

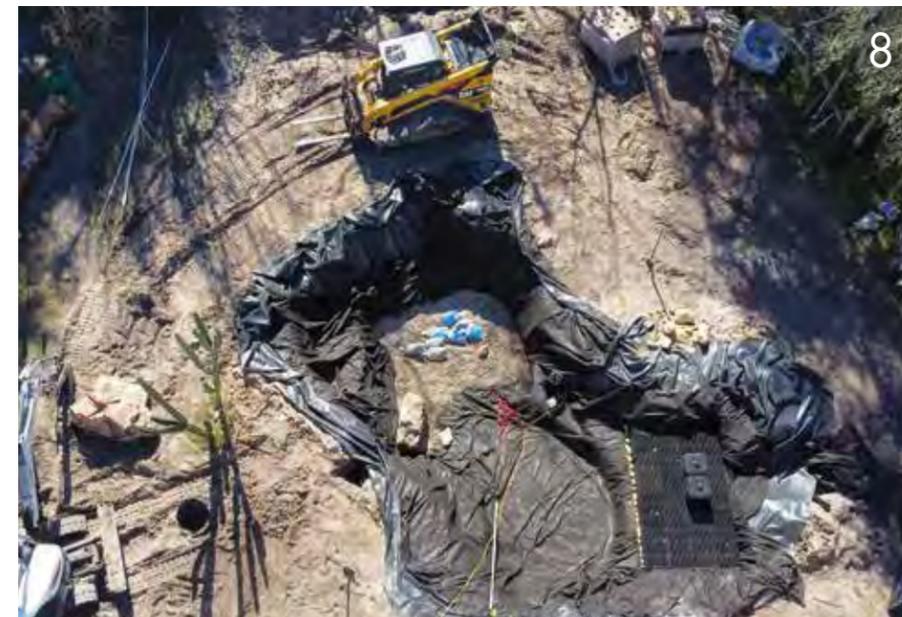
Hydroponics, the practice of growing plants without using soil, has really caught on in some parts of the world. **Ken Rust** explains why it's largely underutilized and could be a valuable tool in any contractor's toolbox.

53 An Inside Job

Most folks build a pond around a house. What happens when the pond comes first, and the house is built around the pond? **Kent Wallace** shares the story of a desert waterscape build that precedes the home built around it.



46



8



41



28

DEPARTMENTS

- 6 Upcoming Events
- 60 Trade News
- 64 Marketplace
- 65 Advertisers' Index

COLUMNS

- 7 Publisher's Perspective

Upcoming Events

2021

June 26 - 27

21st Annual Pond-O-Rama Tour
St. Louis Water Garden Society
Private member gardens
Metropolitan St. Louis
www.slwgs.org

June 26 - September 11

Greater KC Water Garden Society Tour
"Puddle Jumping Water Garden Tour"
Six weekend tours, various homes
www.kcwatergardens.com

August 10 - 12

IGC Garden Center Show
McCormick Place
Chicago, Illinois
www.igcshow.com

August 27

Pondemonium Online
One-day conference
www.pondemonium.com

October 13 - 14
Your Pond Farm
Virtual Trade Show

October 20 - 22

GIE+Expo / Hardscape North America
Kentucky Exposition Center
Louisville, Kentucky
www.gie-expo.com
www.hardscapena.com

October 21 - 23

National Hardware Show
Las Vegas Convention Center
Las Vegas, Nevada
www.nationalhardwareshow.com

PONDTRADE™

STAFF

Publisher

Lora Lee Gelles 708/873-1921
llgelles@pondtrademag.com

Editor

Jordan Morris
jmorris@pondtrademag.com

Advertising Sales

Lora Lee Gelles 708/873-1921
llgelles@pondtrademag.com

Graphic Design

Gelles Graphics
llgelles@comcast.net

Accounts Receivable

Lois Spano
lspano@pondtrademag.com

Web Editor

Grant Gerke
ggerke@acceleratedcontent.com

Printer

Sutherland Printing
Montezuma, Iowa

For your
Free Subscription

see our
website www.pondtrademag.com

or call **708/873-1921**

Contact Info

POND Trade Magazine
P.O. Box 2721
Orland Park, IL 60462
708/873-1921

www.pondtrademag.com

Publisher's Perspective

Cough, cough, hack, hack

I'm about to get on a bit of a soapbox here, but hang tight and hear me out.

POND Trade was hacked about a month ago. Some devious person got into my account and sent out a bogus invoice to many of my advertisers and subscribers. I'm so sorry if you were affected by this! Not only were they clever enough



to send out a bill and hope to pilfer money from the water feature community, but they also diverted my incoming emails! So while I normally might have noticed something was off pretty quickly, I was left in the dark and unable to do anything about it. What a pain!

Luckily, we eventually fixed the issue and secured our server once again. Everything is back to normal, but ugh — if you've ever been hacked, you probably know exactly how I felt.

OK, soapbox time. Why can't people just go out and try to earn an honest living, like you and I are doing? What drives someone to steal information and money from other innocent people? Just think of what these would-be crooks could do if they just focused their time and efforts on building up their own (legitimate) business instead of trying to cheat other folks?

One of the keys to running any honest operation is staying informed and up-to-date on industry trends, whether it's cybersecurity or the latest innovations in the field. That's where we come in. This issue in particular is really diverse, from pond and water-management basics to new and exciting trends in aquaculture.

Liners, for example, are part of Pond Building 101, but Freddie Combas ("Sealing the Deal," pg. 21) presents and explains all the acronyms involved, making it easier to choose which type of pond liner is best for your application. I personally enjoyed the cover story ("Wet and Wild," pg. 36) and John Mark Courtney's rundown of native wetland plants. Speaking of plants, we have a hydroponics feature ("Finding Your Roots," pg. 46) by Ken Rust, who breaks down some of the popular types of food-growing systems. You won't want to miss John Magyar's profile of a koi pond sanctuary outfitted with bonsai trees ("Bonsai!" pg. 28). We're also happy our Best Pond Practices segment is back! Kent Wallace has a dazzling desert water wall and koi pond build to show you ("An Inside Job," pg. 53).

Happy PONDering!

Are you attending an event that you think others should know about? Are you hosting an event and want more people to come? Send event info to llgelles@pondtrademag.com.



Moving? Let Us Know

If you are moving, please update your address with us so we can update our records.

Use the forms from the post office, or drop us an email at llgelles@pondtrademag.com with your old and new contact information.

POND Trade Magazine, ISSN 1949-0585 is a trade publication of LG Publishing, Inc. Material is selected for its interest to the koi, water feature and pond industries, and the publishers accept no responsibility for the accuracy of content. Reproduction rights by written permission only.

POND Trade Magazine is published bi-monthly, starting in January, for \$41.70 per year by LG Publishing, Inc., POND Trade Magazine, PO BOX 2721, Orland Park, IL 60462. Qualified applicants may subscribe at no cost at www.pondtrademag.com. Postage is paid at Orland Park, IL and additional offices. For new subscriptions, additional copies and address changes, please call 708/873-1921 or email llgelles@pondtrademag.com.

POSTMASTER: Send address changes to POND Trade Magazine, PO BOX 2721, Orland Park, IL 60462 © Lora Lee Gelles, 2021

Advertising Policies: LG Publishing, Inc. reserves the right to refuse to publish any ad. Submission of an ad to LG Publishing does not constitute a commitment by LG Publishing, Inc. to publish it. Publication of an ad does not constitute an agreement for continued publication. LG Publishing, Inc. will not be liable for failure to publish an ad as requested or for more than one incorrect insertion of an ad. In the event of an error or omission in printing or publication of an ad, LG Publishing, Inc.'s liability shall be limited to an adjustment for the cost of the space occupied by the error, with maximum liability being cancellation of the cost of the first incorrect advertisement or republication of the correct advertisement. Under no circumstances shall LG Publishing be liable for consequential damages of any kind.

1 Hp CasCade 5000 \$869.95
Floating Pond Fountain Aerator
100 ft Power Cord • Light • Timer • EZ Installation!

UltraFalls 12,000
Super Efficiency Low-Head Centrifugal Water Pump
12,000 gallon/hour Max Flow – just 2.3 amps!
Perfect for Waterfalls

Save Thousands!
"Pump Performance Like No Other"
Long Life • Low Heat • 2 Year Warranty
Continuous Duty • Virtually Silent • Pays for Itself \$1,194.95

www.fishpondaerator.com
Fish people since 1955
(608) 254-2735 • Call 7 days/week • Fast UPS Shipping!

UNITED AQUATICS

USA IMPORTER OF THESE POPULAR EUROPEAN BRANDS

Black Knight, Huttons AQUATIC PRODUCTS, HOZELOCK, GORDON LOW, pond h2o™

www.unitedaquatics.com
United Aquatics, LLC • 230 North Maple Avenue, B1 #338
Marlton, NJ 08053 • 856-985-9339



Swimming with Reptiles

Florida recreational pond blends swimming & wildlife

by Jason Duffney,
Earth Works

The St. Augustine Alligator Farm Zoological Park is a historic institution in our nation's oldest city. Since he was a child, zoo director John Brueggen's passion for reptiles has grown into a highly regarded career engaged in and overseeing education and research on reptiles, birds and other animals at the zoo and in expeditions around the globe.

He recently sought out technical support from Aquascape Inc., and Earth Works to improve ecosystems at the zoo and build a recreational ecosystem pond at his home, which he shares with his wife Jenn, a biologist who also works at the zoo.

No Ordinary Pool

The Brueggen family's yard had a large space that seemed ideally suited as a place to swim.

"We met with several people about a swimming pool, but we're unique people," Brueggen said from his yard. "We have animals in our lives, and the idea of just a tiled-edge pool wasn't all that exciting."

Brueggen contacted Earth Works, which presented a more exciting proposition — a recreational pond. He loved the concept of swimming in a natural-looking pond with wildlife in it, like fish and frogs. Plus, it could look great in his yard throughout the year, even when was too cold to swim.

"You get this natural environment that's not so

sterile," Brueggen added. "I know a lot about recycling and filtering water, and these guys know exactly how to do it so that it's not labor intensive. It's a beautiful experience all year round."

Earth Works introduced Brueggen to the Aquascape lifestyle, and before he knew it, Aquascape founder and CEO Greg Wittstock, whom Brueggen recognized from YouTube, had agreed to design the project and hold a class in their backyard for prospective Certified Aquascape Contractors (CACs) interested in learning how to build something more exciting than the average swimming pool.

"We have two primary missions," said Colleen Heitler, president of Aquascape Inc. "The first is to connect people with water the way nature intended. We believe in the power of nature, relationships and getting outside. This is such an important part of what we love and are passionate about.

"The second most important mission of Aquascape is to train contractors to install the best, most ecologically sound, low-maintenance water feature by hosting training events," she added.

Aquascape scheduled training builds for CACs from around the country to participate in hands-on learning experiences at the St. Augustine Zoo and Brueggen residence between Feb. 3 – 5, 2021.

Breaking Ground

Staging material, including four tractor-trailer loads of Tennessee fieldstone, river rounds and Tremron wall block, began Christmas week 2020. The first phase of construction for the recreational



Opposite page: Construction begins (top) with unloading the first of four loads of rock. The aerial view (middle) of the site reveals its overall complexity. Author Jason Duffney (bottom) makes new friends in the zoo's main alligator holding area.



Team Aquascape sets the first boulder.

pond began the week of Feb. 18, 2021. Team Aquascape's Pond Professor Ed Beaulieu and Chris Hanson joined the Earth Works pond crew to excavate, address groundwater issues, construct the intake bay and wetland filter infrastructure, and complete much of the rock work.

All around the property are signs of the Brueggens' passion for nature, as they raise chickens, pitcher plants, cacti, ground bromeliads and more. The initial planning for the dimensions came to a 20-by-25-foot pond. During excavation, while sizing up the boulders and proper slope to the desired depth of 4 ½ inches, the pond length increased by a few feet.

"We are going 2 feet down rather than our typical 18 inches," said Michael Quatromoni, Earth Works designer and pond construction foreman. "And then we have our bigger drop — probably around 3 feet."

Within 6 feet of the back door to the house, this 2 and 3-foot elevation forms the foundation for large stones, creating a staircase into the pond.

"We all knew it was going to happen," said Beaulieu. "Once we start going down 4 ½ to 5 feet deep, we are going to hit groundwater."

The construction team recessed a drainage pipe into the bottom and put

down a layer of geotextile fabric. They came in with clear #57 stone, which compacts well, as a base to build structural walls on top of the liner. Then, another geotextile layer was put down to increase the load-bearing capacity before



A new inhabitant makes a home in the recreational pond.

the installation of the EPDM rubber liner and yet another layer of geotextile on top.

According to Aquascape, designing for ecosystem ponds requires as much biological understanding as adherence to solid engineering principles.

"What I love about this whole concept of a recreational pond is engaging people with water the way nature intended," said Beaulieu. "We are talking about living water."

He added that being in Florida, they wanted to create a living, breathing ecosystem unto itself, because Brueggen had planned to have unique reptiles living inside it.

"Reptiles are looking for that same experience," Beaulieu continued. "They don't want chlorinated water; they want to immerse themselves in a springlike atmosphere. So, natural filtration, covering every square inch with rock and gravel, having a large wetland filter — all that stuff is going to come into play."

Sculpting the Waterscape

A key engineering component in this project was the intake bay constructed with 16 large Aquascape AquaBlox. The AquaBlox provide 500 gallons of water storage (equal to one minute's worth of prefiltration) for the pump system in two vaults that are pulled through two 3-inch suction lines to feed the wetland filter, underwater jets and waterfalls. The direction of the waterfall, presence of peninsulas, backwater areas and deep sections could cause water-circulation problems.

"It creates some dead zones, which is fine if you know how to eliminate them," Hanson said. "You have to increase circulation so you don't have these static areas in the pond where debris will accumulate."

The architectural walls they constructed were necessary to get to the 4 ½-foot depth, and they wanted to eliminate any static underneath.

"Everything on the top layer of water

Reptiles are looking for that same experience. They don't want chlorinated water; they want to immerse themselves in a springlike atmosphere. So, natural filtration, covering every square inch with rock and gravel, having a large wetland filter — all that stuff is going to come into play.

will move just fine through here, but we still wanted to increase circulation to prevent any sediment from falling to the bottom," Hanson added. "We ran a 2-inch trunk line that we spidered off in a variety of places coming in from the waterfall area into 1-inch jet lines."

Jets pointed clockwise at the wall block level form a swirl chamber that works in unison with a jet pointed upward from within the wall level that pushes the swirling water, carrying any debris out of the deepest area and into the current that flows toward the intake bay. Similarly, they installed jets in regions throughout the pond as needed, including the shallow area nearest the house by the steps leading down into the pond, to push the debris into the current toward the intake bay. Even though it was a small area that a screen enclosure would cover, they said they "over-engineered" it as a teaching opportunity for the other CACs — and to hook up the homeowners!



The crew (top) gets busy digging and installing a drainage system. Certified Aquascape Contractors (middle) work together setting rocks. Chris Hansen (bottom) discusses the engineering goals of the project with author Jason Duffney.



The customer and contractors (top) watch as the waterfall is turned on for the first time. The completed recreational pond (middle) is fully enclosed. The Brueggens (bottom) are thrilled about their new recreational pond.

Natural Beauty, Created

Incorporating natural elements from the area was essential to the design.

"I love the look of that beautiful cypress log," said Beaulieu. "It's transitioning from the outside area, from the terrestrial plantings down underwater."

The waterfall dropping in behind the cypress log creates some interesting dynamics from both a visual and a water flow standpoint. The construction team placed large boulders in front of the log with flat areas on top to form an aquatic planting area.

"I love designing and building like this, because here in Florida, you are in a hurricane zone," Beaulieu said. "You get lots of storm surges of wind and bad weather. It's always knocking down trees."

"Whenever I go exploring the local lakes, rivers and incredible springs of northern Florida, I see exactly that kind of look," Beaulieu continued. "Trees that have been knocked down create these little backwater areas that are exactly where different types of aquatic vegetation start to sprout up, because it's a small, sheltered area. I love talking about bio-mimicry techniques, and this is it at its finest."

The landscaping around the recreational pond within the enclosure is continuing to be done by the Brueggen family and is especially suited for the cactuses and reptiles that will enjoy the enclosed recreational pond together.

It's extremely satisfying seeing the results of the homeowners' creativity coupled with professional collaboration. ☺

About the Author

Jason Duffney is co-owner of Earth Works, a leading independent garden center and landscaping and lawn care business with a 30-year history of serving the Jacksonville, Florida market. In 2020, he traveled with the Aquascape Foundation Charity to Uganda and was also named the Aquascape Businessman of the Year. He strives to elevate all aspects



of the Earth Works brand, including leading more clients to the Aquascape lifestyle.

ULTRA BALANCE PREMIUM KOI FOOD

Available in Growth & Maintenance formulas

Helps koi achieve their ideal health, growth, and energy levels

Nutritionally balanced with amino acids, vitamins, minerals, and natural color enhancers



www.koifood.com

Manufactured by
Star Milling Co.
Made In USA

[@ultrabalancekoifood](https://www.instagram.com/ultrabalancekoifood)

For More Information: Please Contact Your Distributor or Our Manufacturer's Sales Representative: Sandy @ 951-212-7719



Lyngbya peels from the bottom and inevitably floats to the surface.

| Water Quality |



Use proper equipment. It makes all the difference!

Water Secrets **Revealed!**

Managing water quality using the fewest chemicals possible

by **Patrick Simmsgeiger**,
Diversified Waterscapes Inc.

Almost every day I am asked to outline a water treatment plan. New clients and old friends alike expect the answer to be simple, but there are many “it depends” caveats. Each body of water is unique and responds best to a slightly different approach. Even if the dosage is simple, the application is as important as the products used. These conversations often reveal that the owner is unsure of site-specific details, the deeper challenges presented and the nuances of water treatment. Setting all that aside, the following is a simplified approach to aquatic treatments.

The best management practice for water is to use the least amount of chemical treatment. This is balanced against the need to control unwanted and invasive species, all while minimizing labor. Ecologic diversity is the long-term goal. Below a certain dosage, chemicals have a negligible effect. Therefore, an aquatic program generally first increases toxicity, then ramps down chemical usage. Ultimately, the aquatic plant growth becomes acceptable, costs are reduced and the water ambience and function are maximized.

Water Quality Factors

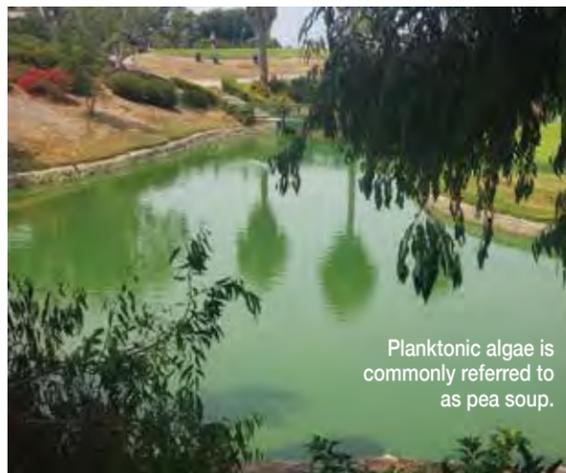
First, consider the water volume and source. What is the surface area and average depth? Does it fill with water from an aquifer, a deep well,



Manicured cattails can help filter nutrients and protect banks from erosion.



Decorative fountains can lower aeration efficiency.



Planktonic algae is commonly referred to as pea soup.

city water or reclaimed water? The less pristine the source, the higher the nutrient loading, and thus the more product needed for the same level of control. This also applies to landscaping and nearby animals, especially uphill and upwind.

Make sure the water has enough dissolved oxygen (DO) available, both for the fish and other oxygen-consuming creatures. Generally, 4 ppm is poor DO, and above 6 ppm is good. At 3 ppm or below, you will see fish kills. Higher DO will discourage the growth of algae and cyanobacteria, as these excrete oxygen. Lower-temperature waters can hold more DO, and more salinity can reduce DO. Thus, more wind increases DO and evaporation. A lake often requires mechanical aeration to have sufficient DO, such as diffusers, fountains and waterfalls.

Water depth is important to know not only for application calculations, but also for biologic function estimations. Comparing the current depth profile with the original design, the difference is the accumulation of muck, which is a combination of dirt, clay and biologic material. Bottom diffusers are less effective at DO introduction at depths less than 6 feet; depths greater than 40 feet see less DO despite the lower temperatures at those depths.

Always remember: Moving water is healthy water. How long does it take for the entire volume to recycle? Healthy water turns over a few times a day. Circulation implies mixing, which is enhanced by bottom diffusers at all depths. Large

bodies of water often have coves and fingers, which have lower circulation. The larger a lake, the less likely it has good circulation, especially at the deepest points.

Environmental Factors

Where does the water flow when it leaves your property? U.S. EPA and state laws limit pesticides and other products in water. A property owner should not add any product before understanding the laws governing their property and the property downhill receiving effluent.

Peripheral trees and other high-nutrient sources may need to be moved or eliminated. Increased light will result in more algae growth. Increased wind from tree removal will help the DO but will also increase evaporation. More evaporation will increase the cost of water replacement, so dissolved solids in the water may increase.

Some lakes are devoid of aquatic grass. The introduction of fast-growing aquatic grass can address this problem. In later years, this grass could take over between 50 to 80% of the lake's surface, requiring a huge annual expense to cut back. Before adding or subtracting to a waterscape, including the nearby landscaping, consider the long-term outcomes carefully.

Goals & Limitations

Clearly define your highest priority and identify those who may disagree with your goal or wish to amend the process. Water management is not intuitive and often has capital and recurring costs. Many

companies offer different products and processes that promise similar outcomes. Some prefer killing everything for maximum control in the short term, minimizing labor and short-term cost. Others prefer the ecological approach — using subtler products that turn the big ship around, so to speak.

A reservoir owner wants maximum

Before adding or subtracting to a waterscape, including the nearby landscaping, consider the long-term outcomes carefully.

volume with toxicity just below the legal limit. A mixed-use homeowner's association wants fish and no algae blooms, with butterflies and birds coming back each year. Depending on the property, either can be correct.

In any case, the first step is usually taking control of algae and cyanobacteria, which may be at the advanced stage in a harmful algae bloom. Copper products are the most effective and come in several forms. Using a double-chelated product, which is a liquid, is the most efficient. Commonly we use an algaecide, which introduces 0.1 ppm copper for each gallon applied to 1 acre-foot of water, persisting for about 21 days. Control generally begins at 0.2 ppm; 1.0 ppm copper is the EPA limit for potable water. Using these concepts, we can make a plan to address the owner's goal.

Example Calculation

For example, consider a volume of water 300 by 700 feet with an 11-foot average depth, which comes out to 2,310,000 cubic feet. The lake is a closed system with average water source quality and no effluent issues. The surface is 4.82 acres, or 210,000 sq. ft. — so a fairly large lake surrounded by trees and brush. The circulation is poor, with high westerly winds and an average daily air temperature of 85 degrees Fahrenheit.

The lake was built in 1975 as a reser-

LARGEST INVENTORY in the USA
Well over 100,000 Brass Fixtures **IN STOCK!**

HydraPro™ MR16
Underwater Light



Always in Stock
Buy Direct & Save
UL/ETL Listed
Lifetime Warranty
Same Day Shipping

MAKE MORE MONEY
BUY DIRECT

AMP
PROFESSIONAL LANDSCAPE LIGHTING

Become an AMP® Pro **TODAY**

Visit: amplighting.com/pro
Call: 813.978.3900



koismart.com
(561)408-2739



KOI SMART
YOUR POND • OUR PASSION

LARGE INVENTORY
FULL WAREHOUSE
We Stock Thousands of Items Ready-to-Ship

POND DESIGN
TECHNICAL QUESTIONS
COMPETITIVE PRICING

Our Experienced Staff Members are Here to Help You

SAME DAY SHIPPING
2pm EST Shipping Cut-Off Nationwide

f p G+ YouTube
West Palm Beach, FL



YOU BUILD TRANQUILITY WE PROVIDE YOU THE SUPPLIES TO CREATE IT



WE SHIP EVERYTHING BUT THE WATER

WWW.PONDLINERWHOLESALE.COM

(866) 219-3561

WHOLESALE PRICING AND SERVICE

We support your business with very competitive pricing and a large variety of equipment from multiple brands. Most orders ship the same or next business day.

EDUCATION

Our customer service representatives are always happy to help with any technical assistance and are able to provide professional advice on products, design & construction. We also offer pond training & certification classes.

HUGE INVENTORY

We house over \$1,000,000 of inventory from over forty top manufacturers in our warehouse. We handle most warranty issues for you, no need to contact the manufacturer.

voir for cattle and crops, plus flooding protection. With an original depth of 25 feet, its bottom layer is 60% mud, 40% bio-muck, reducing the original volume by about half. The abundance of minerals makes this “hard water,” which is known to precipitate copper in lower-quality algacides. The water is very turbid with a planktonic alga, plus a top matting of Lyngbya. There is no aeration. A new owner has finished building a home on the lake, and their large family enjoys fishing and being outdoors with their dogs.

So, what do we do? The family wants a fast fix, but years of damage and a weak biosphere will take up to two years to address, assuming the best approach. But because they just made a big move, funds are tight, and big investments for the lake are not in the budget. A middle-ground solution is needed now. For safety until the harmful algae blooms are eliminated, any swimming is forbidden, and pets should be kept from the water.

Even though people should not be in



Fountains can help water quality by oxygenating the surface water.

the water, the lake is being used to water crops and fill troughs. The cows seem healthy. Sheep are very susceptible to copper, so they should be watered from another source. Now that the family is safer, the application can be considered. The maximum copper limit for potable water should be approached, so calculate for 0.8 ppm for a strong initial control. Fifty-three acre-feet multiplied by 8 (0.1 per gallon) comes to 424 gallons of F-30. The manufacturer says that mixing four

parts algacide with one part enzyme is very effective. If another control dosage is needed, begin 21 to 30 days after the last application for 0.6 ppm. As always, follow the label instructions on all products!

Problem Solved

Despite their budget issues, the owner installs one multi-head diffuser in the deepest spot, increasing DO and mixing. The water column is so unhealthy that no enzyme will diffuse to the bottom. Ten gallons of enzyme are repurposed to drip-drag lines, injecting directly into the muck layer. Two months later, a 5-pound bucket of muck-reducing pellets is purchased for bottom treatment to reduce bio-muck, reclaim depth and start a beneficial bacteria colony. Multiple advantages are slowly observed as the ecosphere reacts over the first six months.

The following year, applications are reduced in half, and then in cut half again in subsequent years. A long-lasting aquatic-blue dye with a UV blocker is added to the

Make it a HIBLOW® POND
Cleaner Swimmers & Healthy Fish



734.944.5032

HIBLOW-USA.COM

New Water Garden Series
Pond Aerator




Which dog will YOU
let back in the house?

DISCOUNT POND SUPPLIES

www.discountpond.com

Kasco

- Fully Stocked Warehouse
- Most orders shipped within 24 hours
- Competitive Pricing
- Nationwide Shipping

Order Fulfillment Services Available

WHOLESALE ONLY to trade-related retailers... we do NOT sell directly to YOUR customers.

DPS
DISCOUNT POND SUPPLIES, INC.

Wholesale Distributors of Water Gardening Products For Over 20 Years!

800-979-0999 ~ sales@discountpondinc.com
P.O. Box 129 Lebanon VA 24266

process. The family likes the color, but what we're really looking for is a reduction of photosynthesis. Then a clarifier is added to the treatment, dropping nutrients into the muck, which is now being eaten by the expanding colony of beneficial bacteria. The ugly and smelly matting has not returned. Fish are abundant and healthier!

More aeration is installed in two to three years. At this stage, synthetic chemicals are mostly replaced with biologic products. The family includes a waterfall built with local rocks, which pushes surface currents against the prevailing winds and clears out the last stagnant region. Only in especially hot years, when pollution overwhelms the balanced and healthy water, does the family resort to a control treatment. But now the lake recovers quickly. Maintenance is sufficient for many years, and their fish continue to thrive.

Remember that other important applications can be incorporated, just like adding more instruments to a song. Clarifiers bind and drop particles from the water column, so their nutrients are unavailable to algae. A defoamer will break down unsightly bubbles. Two different quality dyes can mix for a preferred look without compromising the UV-blocking performance of the blue and yellow product. Pure bacteria and vital minerals replace those missing and absorbed by struggling water. ☘

About the Author

Patrick Simmsgeiger is the president of Diversified Waterscapes Inc. (DWI), a certified lake management company and manufacturer of aquatic products for 35 years and counting. A vital supplier for the industry, DWI is maintaining service to its clients during the COVID-19 pandemic with modified work practices and procedures.



Liner Options



EPDM liner can be used in many applications, from small residential ponds to commercial ponds and larger residential ponds like the one seen here.

Sealing the Deal

Which type of pond liner should I use?

by **Freddie Combas**,
FWG Designs

What else can be said about a pond liner, other than it's just a big panel of rubber membrane included in a pond kit? The answer is ... quite a lot. Here's an introduction to several types of liners and the diversification and growth opportunities they could offer your company.

Though liners are the foundation for most ponds in the decorative pond industry, contractors tend to be most familiar with Ethylene Propylene Diene Monomer (EPDM) liners, as this type is found in probably 99% of pond kits on the

market today. Polyvinyl Chloride (PVC), Reinforced Polyethylene (RPE), Low Density Polyethylene (LDPE), High Density Polyethylene (HDPE), Linear Low Density Polyethylene (LLDPE) and many others are available, and each type has its own characteristics, strengths, weaknesses, pros, cons and suitable uses. Some liners can be used in many applications, while others have more limited utility. In this article, I will be "under-lining" the three types of liners most commonly used in small, backyard water gardens and large, acre-plus-sized ponds.

PVC Liners

Many new contractors and DIY home-



This 1.25-acre commercial pond in Lake Nona, Florida was built using RPE liner.

PVC LINER ADVANTAGES:

- Available in panels as large as 200,000 square feet
- Fish-safe variants available
- Easy to patch and seam
- Available in higher mil for better project outcomes
- Very flexible

PVC LINER DISADVANTAGES:

- Very short lifespan if exposed to UV
- Very low tear strength
- Very low elongation (**Tip:** Stretch before tearing!)
- Mostly found in lower mil and not recommended for installation by a professional
- More than twice as heavy as RPE
- Should be ballasted for longer lifespan
- Needs underlayment installed

EPDM LINER ADVANTAGES:

- Widely available
- Extremely flexible
- Very high elongation
- Easy to seam & patch
- Fish-safe variants available
- Decent lifespan when exposed to UV
- Accessories available (e.g., pipe boots, unvulcanized tapes)

EPDM LINER DISADVANTAGES:

- Much heavier than PVC and RPE
- Low puncture strength
- Limited to 10,000-square-foot panels

RPE LINER ADVANTAGES:

- Low materials cost
- Lower installation labor cost
- Lighter weight than PVC and EPDM per square foot by 50%
- Stronger than PVC and EPDM
- Best UV resistance
- Many manufacturers and variants available
- Available in up to 150,000-square-foot panels
- Great elongation characteristics

RPE LINER DISADVANTAGES:

- Requires special heat equipment to seam and weld
- Installation of a ballast is normally recommended
- Pipe boots need to be custom made in the field

owners like to reach out and grab some PVC liner at their local home improvement store for their pond project. Some people choose PVC liner because they don't know there are better options; others do so just because of wide availability and cost savings.

Frankly, I would not recommend that a professional installer use these low-mil PVC liners offered at most home improvement stores. PVC liners of much higher mils are used in many commercial applications, from landfills and chemical containment ponds to agricultural ponds and fire ponds. These higher-mil PVC liners are more puncture resistant than the common EPDM liner. Unfortunately, these better PVC liners are not available at big box stores and must be custom ordered.

PVC liners are very easy to work with and adapt to most shapes and sizes. For professional installations, I highly suggest your residential client be made aware of the better, longer-lasting liners available on the market. PVC liners should always have a geotextile underlayment installed under it. Sometimes it can be added on top before the installation of a ballast — when the liner

is installed and then covered with sand or clay to create another level of security and puncture prevention.

EPDM Liners

Ethylene Propylene Diene Monomer liners — (Doesn't that just roll off the tongue?) — are the most commonly used liner for water containment on the decorative end of the pond-building spectrum. From small water gardens, waterfalls without ponds, disappearing water features and koi ponds to large, commercial water features and multi-acre ponds, EPDM liners seem to be the go-to liner for both DIYers and professional contractors.

Since I began installing ponds in 1999, I have purchased hundreds of thousands of square feet of EPDM liner. I love EPDM! I haven't purchased a pond kit in about 10 years, but I would dare to say that 99.9% of all pond kits sold in the United States include EPDM as the liner. It is very easy to work with, conforms to just about any shape and can be seamed into acre-plus sizes. In Florida, EPDM is our go-to liner in 90% of our installations due to our extremely sandy soil conditions. After long periods of rain, you might have shift-



A custom welded RPE liner pipe boot (left) is made with specialized liner welding tools. The on-site installation (middle) of an RPE pipe boot requires the use of a hand-held heat welder to melt the boot onto the RPE liner. The great elasticity and high strength of an EPDM liner allow for the placement of a 23-ton boulder (bottom) and an 18-ton boulder (shown on a steel-cable sling) directly on top.



An 8-oz. underlayment (left) was placed both under and over the RPE liner for extra protection. The completed pond (right) had 1 foot of sand placed on top of the liner to aid in preventing hydrostatic pressure from lifting the liner. An anchor shelf was created, and granite was placed to lock in the liner.





INTRODUCING THE AQUASCAPE TRAINING TRIFECTA

Whether you're a novice water feature installer beginning to learn the craft or you're a seasoned pond professional perfecting your artistry, **AQUASCAPE OFFERS THE TRAINING YOU NEED – WHEN, WHERE, AND HOW YOU NEED IT!**

With three unique ways to keep your skill sets sharp, we invite you to join us for our industry-leading training events where you'll learn how rewarding and profitable it is to install Aquascape water features.



ONLINE

Aquascape online learning is the starting point for water feature professionals of all skill levels and provides step-by-step installation and business operations training. Free and paid courses are available on demand 24/7 through **Aquascape University**. And join us Friday, August 27, 2021, for **Pondemonium Online 2021** - a one-day, FREE event.

REGIONAL

Learn Aquascape water feature design and build techniques from seasoned veterans of TEAM Aquascape and further your industry knowledge and expertise. Don't miss **Aquascape Regional Builds and Events**, including our popular Build-a-Pond Days, taking place at locations across the country and around the globe.

AQUALAND

Invest in yourself and your team by coming to **Aquascape Academy Hands-On Training** at Aqualand in St. Charles, Illinois, to learn EVERYTHING Aquascape Construction does operating the world's largest decorative water feature business. **COMING NOVEMBER 2021!**

LEARN MORE AT AQUASCAPETRAINING.COM

ing ground conditions, and EPDM's high elasticity rate is ideal for this. Low-mil PVC with very low elasticity would rip right off the bottom drain and skimmer abutment screws once they started shifting around in the sand. Seaming and patching EPDM is pretty easy and very forgiving in comparison to other liners.

EPDM does not mean "glued," as many seem to think. The process is a little more complex, so manufacturers have decided to simplify the description by using terms such as "glue" and "primer." These glues and primers are actually polymers that crosslink the molecules and create a totally different material that is stronger than the liner on its own. This is why you never see a properly installed liner rip at the seam — the damage always occurs to either side of the seam.

Due to its weight, EPDM can be manufactured in panels as ranging from 10,000 square feet to as large as 150,000 square feet! EPDM is fairly stable when exposed to UV. Unvulcanized EPDM accessories,

such as flashing tapes and pipe boots, are also available and can be very handy when sealing around a pipe or making seams in tight corners. Though the technology is evolving and improvements are investigated for all liners, I do not expect EPDM liners to lose their appeal within the decorative pond industry any time soon.

RPE Liners

Reinforced Polyethylene (RPE) is our go-to liner for ponds larger than 10,000 square feet. RPE is basically two pieces of polyethylene liner with a scrim, or stringlike web, sandwiched between the two layers of liner.

RPE can exhibit strength of up to 1,250 psi, which is more than double EPDM's burst strength of less than 600 psi. RPE cannot be seamed with polymers like EPDM. RPE requires special equipment to heat weld. There are also hand welders and automated welders that roll the length of the liner while seaming the panels as it moves along. Test welds from

scrap pieces of RPE are performed and tested in a specialized elongation and tear machine prior to welding the actual panels. The results from this machine allow for the adjustment of the temperature and speed of weld to assure a clean, solid weld.

Patching RPE requires a hand-held welder and roller. Once a patch is completed, an extrusion welder, or a very large version of a glue gun with a solid rod of RPE, is used to cover the edges of the patch. (Using an extrusion welder is the same principle as using lap sealant on EPDM patches.)

Some RPE liners do not require the use of underlayment, while others do. Due to the weight of RPE, some manufacturers recommend a ballast installation to aid in preventing the infamous "whales" caused by subterranean hydrostatic and gas pressures. The material's light weight and availability in large panels make lining a one-acre pond possible with just a few men! The cost of RPE is much lower than EPDM; therefore, a larger pond will

NATURES POWER TOOLS

www.dwiwater.com

EVERY PROBLEM SHOULD HAVE A SOLUTION

Environmentally Safe Lake & Pond Products

 F-10 Foam Kill	 F-20 Enviro Clear	 F-30 Algae Control	 F-40 Enviro Blue
 F-50 Bio Pure	 F-51 Muck Reducing Pellets	 F-55 Bio Zyme	 F-X Night Shade



Balance Mother Nature Don't Control Her

Distributed by Horizon & Ewing Irrigation



require less labor and yield a higher profit per square foot.

Not all liners are the same or intended for the same job. Understanding the different liners available in the industry and how and when to utilize them will allow you to deliver a better project to your client. If

you have only installed EPDM liner, I suggest you research and try high-mil PVC liners as well as RPE liners. The more tools you have in your toolbox, the newer, bigger, more unique and way cooler projects your company will have access to! 



A 20,000 sq. ft. roll of RPE liner (top) weighs 3,120 lbs. A 10,000 sq. ft. roll of EPDM liner (bottom) weighs 3,100 lbs. Weight savings can lead to additional savings in labor cost and yield a more profitable project.

About the Author

Freddie Combas has over 20 years of experience designing and building water features. He has been featured multiple times on Disney's HGTV show, "My Yard Goes Disney," as well as in national publications such as Florida Design Magazine, Home Renovation, PondsUSA, Aquascaper, Ponds Magazine and Water Garden News.



Freddie's national and international water feature projects have been built as far away as Slovakia. His company's offerings include custom water feature and filtration consulting, design, construction, renovation, repair and maintenance.

FWG Designs LLC
www.fwgdesigns.com

AQUA
 ULTRAVIOLET

Koi & Pond Hobbyist, Deserve the Best!

For four decades, Aqua Ultraviolet has been the premier manufacturer of ultraviolet sterilizers and bio-mechanical filtration.

CLASSIC UV STERILIZERS SL STAINLESS STEEL STERILIZERS VIPER SL STERILIZERS ULTIMA II FILTERS

(800) 454-2725 | info@aquauv.com | AquaUV.com

@AquaUV @aquauv AquaUltraviolet

MADE IN THE USA
 EPA Est 68177-CA-001



For more information & informative videos.



The gold standard in aquatic plant excellence. Plants grown in our new state of the art facility by growers with over 60 years of experience.

We have an extensive selection of plants ready to plant or market.

- Marginals
- Water Lilies
- Lotus
- Floaters & Oxygenators
- Combination Planters



Whether you have a retail store or do installations exclusively, we have solutions for both. From pre-planned assortments to customizable solutions, we can help take the guess work out of assembling a healthy balanced mix. Contact us for a catalog or to schedule a salesman visit.



1.800.788.8547 • www.netherlandsbulb.com • contactus@netherlandsbulb.com



Adair Martin (top) carefully sculpts one of his bonsai trees beside the koi pond. The waterfall (bottom) was positioned to be enjoyed within the same frame as one of Adair's bonsai display stations.

BONSAI!

Small trees make huge impact in koi waterscape

by **John Magyar,**
Universal Aquatics

Bonsai, ponds and waterfalls go together like peas and carrots. So a couple of years ago when I received a call from a gentleman who said he wanted a koi pond with his bonsai trees in mind, I didn't think much about it.

It turned out, this wasn't just another bonsai collection. I realized when I first arrived at the property that the view before me was bonsai, bonsai and many more bonsai trees! This was by far the most impressive collection of bonsai I had ever seen.

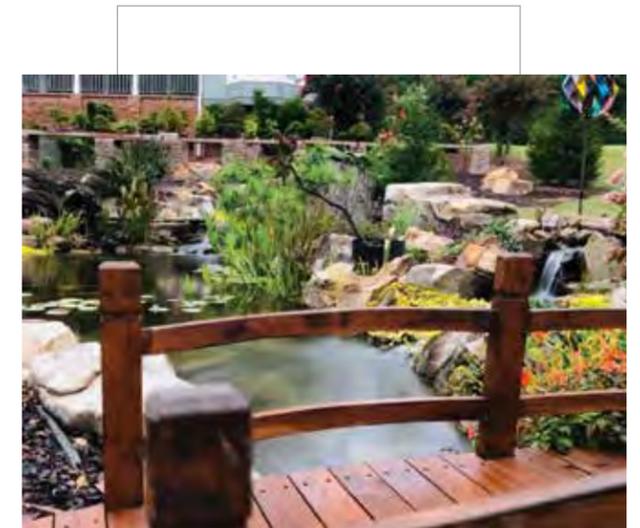
Adair Martin has been doing bonsai since he was 16 years old. He showed trees in the 2016 and 2018 U.S. National Bonsai Exhibition in Rochester, New York. He won Best in Show at both the 2017 and 2019 National Shohin Bonsai Exhibitions in Kannapolis, North Carolina. (Shohin means "small bonsai.") He has also judged bonsai shows and given demonstrations and workshops. His bonsai specialty is pines — particularly Japanese black and white pines. Let's just say he knows his stuff!

His plan was simple, really. He just wanted to be able to have a glass of wine and enjoy being surrounded by his living bonsai sculptures.

A Relaxation Station

He had three main goals that he wanted to accomplish with the water feature and surrounding landscape. First, he wanted to highlight and complement the trees as a collection, placing a specific emphasis on certain specimens in the form of a rotating display area. Next, it was important to have a serene place to work on the rest of the collection, which he does daily. Lastly, he wanted to be able to have a "Relaxation Station" where he could fully enjoy the trees by himself and among a group. Did I mention that he also wanted an amazing water feature with

An Asia-inspired bridge (top right) crosses the pond and leads to one of the bonsai viewing areas. A massive hollowed-out accent log (middle) also serves as a secondary water feature. A prized Ezo spruce (bottom) positioned alongside the feature is proudly displayed as a standalone work of art.



POND MICROBE-LIFT®

FRESH NEW LOOK! **MADE IN THE USA** 
SAME TOP QUALITY PRODUCTS!



We are very excited to announce that our re-branding of our Microbe-Lift/Pond, Birdbaths & Fountain Products is complete. We started two years ago with the Re-Brand of our Microbe-Lift/Legacy Koi & Goldfish food and haven't stopped since!

After almost two decades of having the #1 requested brand name of Pond and Water Gardens products it was time for a FRESH NEW LOOK!

This project is over 2 years in the making from conceptualizing to finalizing the artwork for all of our products in each of their sizes. The new look will modernize our footprint for all Microbe-Lift customers. The best technology in the business now has the best look in the business!

Microbe-Lift Products are now Enforced by Our MAP Policy!



Ecological Laboratories, Inc. Actual Lab

 **Ecological Laboratories** INC.
 Providing Aquatic Solutions Since 1976



www.MicrobeLift.com



A submersible pond lighting system was installed for enjoyment during the evening hours.

brightly colored Japanese koi?

During our initial visit, we tossed around a few ideas about what we wanted to create. After a few hours, we had developed a plan consisting of a 40-by-45-foot, 3-foot-deep Aquascape-style koi pond complete with fallen tree accents, bonsai display stations and a massive wetland filtration system. (It might have been a bit overkill, but a little extra filtration never hurt anything.)

The 3-foot-deep pond provided the real estate for the future fishy inhabitants to thrive to adulthood. The area in front of the pond was to include a paver patio area leading to a bridge that connected to a pathway that led to one of the main tree display areas.

All About the View

As you might imagine, the view had to be spot on. We first approached the view from inside the house — a view that was extremely important. During the chilly winter months in Atlanta, the view from inside the house would

definitely be the most important. Outside the house, a 360-degree view around the entire feature was a must, while keeping optimal tree viewing angles in mind. What's the point of having one of the coolest bonsai collections on the planet if you can't view them easily whenever and wherever you want?

As the build was evolving, we discussed how certain aspects of the feature might complement the main tree viewing area. We ended up deciding to berm up an area just behind and to the left of it. This would allow for the trees to be seen effortlessly without taking away from the key waterfalls. Just add a chair or two on the paver patio, and the viewing party would begin!

Crafting the Waterscape

We installed a large feeding rock that cantilevered out over the pond's edge and doubled as a fish cave, allowing for more interaction with the koi. A bridge, smaller secondary stream and waterfall were added opposite the main

waterfall viewing area to allow for easier access to the pathway that led to one of the major tree display areas. We also ended up adding a few larger tabletop boulders where his trees could be displayed directly within the boundaries of the pond. This created an interactive area where the trees and backyard water feature could be enjoyed simultaneously.

As a plant guy, he wanted to install the terrestrial landscaping himself. He ended up softening the hardness of the boulders with an assortment of different plantings that will continue to look better and blend in over time. We installed a variety of aquatic plants in the system that worked well with the space and overall feel of the design. Submersible pond lighting was installed to highlight the feature during the evening hours so that viewing can continue around the clock, if so desired.

After the feature was installed, he ended up choosing several koi to complete the system. He continues to select and introduce fish that

are special or significant to him from time to time.

We ended up finding a 600-pound log with a hollowed-out section that seemed absolutely perfect for a secondary water feature. We aligned it perfectly to allow water to gently trickle out of the massive structure.

It turned out awesome! The plan was to keep it a surprise until the end of the project, but Adair immediately figured out what we were doing. We ended up adding a few more fallen tree accents that spread throughout the feature and helped balance out the entire structure, giving it a more cohesive feel.

The Payoff

Adair was a happy guy, to say the least! His water feature and bonsai tree collection were on display and finally ready to be enjoyed for years to come. He had several spots to enjoy both the pond and the trees, with pathways and trails connecting the entire property.



He plans on adding a pergola with more seating to capture a different viewing perspective for the newly renovated space. Overall, the project took quite a bit of planning and effort, but the end results were well worth it!

The most important takeaway for me was a new appreciation of the time and energy required to create and maintain such spectacular living art with the delicate precision that the art of bonsai requires. I'll leave that to Adair! ☺

About the Author

John Magyar, owner of Universal Aquatics LLC in Atlanta, is a biologist with more than 15 years of experience in pond design and installation and maintenance of koi ponds, pondless waterfalls, water gardens and water fountains. His expertise stems from years of work in the zoo and public aquarium industry throughout the United States.



John has worked as a biologist at the Georgia Aquarium, the San Antonio Zoo and the Flint RiverQuarium in Albany, Georgia. Working at public aquariums gave him a chance to care for exotic animals, while developing a truly hands-on approach to designing, creating and maintaining water features.

John has worked as a biologist at the Georgia Aquarium, the San Antonio Zoo and the Flint RiverQuarium in Albany, Georgia. Working at public aquariums gave him a chance to care for exotic animals, while developing a truly hands-on approach to designing, creating and maintaining water features.

www.universalaquatics.com

Water Artisans

Winners and Grinners

Water Artisans of the Year show us their trophies



Russell Owen, Anything Wet

"It is such a privilege to be recognized as a Water Artisan of the Year. I love all things water and the creative process of designing and building water features, from the formal to ecosystems. Onwards and upwards. Inspiration through innovation."



Tim Dille, Garden State Koi

"Building waterfalls for a living... Who would have thought? I ♥ My Job."



Christopher Bell, Bell Ponds & Patios

"It's one thing to win such a prestigious award; it means so much more being voted for by those you look up to. This is not just a job — it's a passion. To be named a Water Artisan of the Year only adds to the drive and passion to strive to achieve more."



John Schwarzlose, Freshwater Ecosystems

"There aren't many opportunities for pond guys to get recognition for their work, which is what makes this contest so special. Being included among the best this year and having our work on the cover is a huge thrill. Thank you, POND Trade!"



Eric Arntson, Stonebridge Pond & Waterfall

"It's an honor to be recognized by a community that I hold in such high regard."

Fix Your Pond Leak Right the FIRST TIME

100% Liquid Butyl Rubber

GUARANTEED NOT TO CRACK, PEEL OR FLAKE

- Over 15 yr. History of Success!
- Its unique drying process results in a cross-linking chemical bond
- One coat application
- A true do-it-yourself product
- Waterproofs immediately upon application
- Safe for fish and plant life
- Applies on EPDM Liners, Concrete, Vinyl, PVC, Pools, Fountains etc.

Pond Pro 2000®
855-788-5836 pondpro2000.com

THIS MONTH 50% OFF SHIPPING FOR WEBSITE ORDERS!



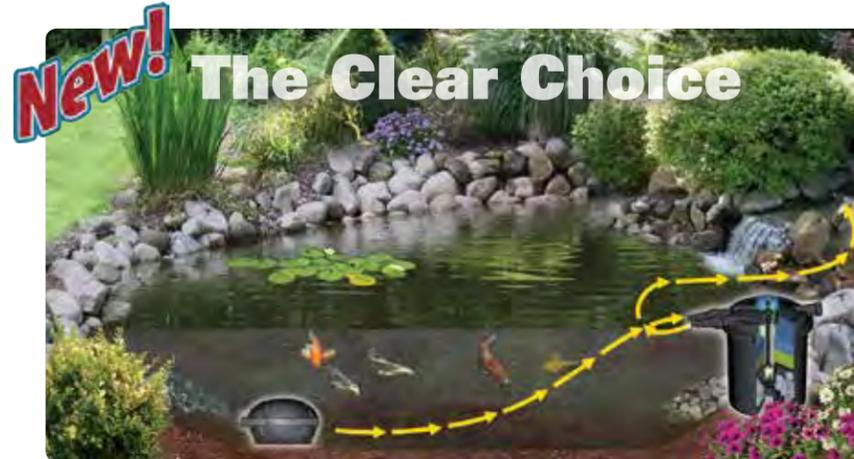
Innovation,

Quality, Experience

800-448-3873
www.easypro.com
info@easypro.com



H2O'h Yeah!



Eco-Clear Pumps and Filters

Quality pond products at an excellent price!
Pumps and filters sold separately or as complete pond filtration kits.

Eco-Clear Filters Great dual filtration. Available in three sizes, each with a UV option available. Perfect for ponds up to 3900 gallons.

Eco-Clear Pumps Submersible mag drive pumps offer maximum power AND energy efficiency. Five sizes available to power pond filters or water features.



Firestone PondGard™ 45 Mil EPDM Rubber Liner



The preferred choice for landscapers, nurseries and water garden installers. Extremely flexible and very puncture resistant. Available in 50' and 100' rolls and pre-cut sizes.



We Carry a HUGE Inventory of Pond Liners and Accessories for Immediate Shipment!

Light it Up! with EasyPro LED Pond Lighting

- Use underwater or in the landscape
- Epoxy filled for extra waterproofing and heat dissipation
- Durable die cast metal housing
- Removable base
- Quick Connect ends for fast installation

3 Watt LED Light



- 2800-3000 K warm white
- Cast aluminum housing
- 3" tall x 1 5/8" dia., 3" dia. base
- 15' power cord
- Available singly or in a two pack with transformer

New! 6 Watt LED Light



- 2800-3000 K warm white LED fixture, rated for 60,000 hour life
- Durable die cast metal housing
- 15' power cord with Quick Connect ends
- 20' power cord

EasyPro carries a huge selection of pumps for nearly every application

Fountain / Statuary Pumps 125 - 1000 GPH

- Compact, energy efficient design
 - Oil free – environmentally safe
- One year warranty



Best for Smaller Fountains & Bubblers

Mag Drive Pumps 200 - 3200 GPH

- Washable foam prefilter
 - Free fountain nozzles with select models
- Three year warranty



Best for: Fountains/Bubblers, Pond Fountains, Water Features, Pond Filtration

Asynchronous Pumps 1500 - 9500 GPH

- Very quiet and energy efficient
 - No oil – fish safe!
- Two year warranty



Best for: Fountains/Bubblers, Pond Fountains, Water Features, Pond Filtration

Direct Drive Pumps 1800 - 17,500 GPH

- Very quiet and energy efficient
 - No oil – fish safe!
- Two year warranty



Best for: Waterfalls & Streams

From 125 gph to 17,500 gph, EasyPro covers all your pump needs!

2021 Catalogs are Here!

Visit our website to find a distributor near you & to request our 2021 catalogs.
800-448-3873 easypro.com



Let our decades of experience help you land your next project!



800-448-3873

EASYPRO.COM



By not mowing to the pond's edge (top), we were able to increase plant diversity. Joe-Pye weed (bottom left) is an all-star in the late-summer meadow. Mountain mints (bottom right) are deer resistant and attract more than 63 beneficial insects. Asters (opposite page) are an important nectar source for migrating monarchs.

WET AND WILD

Native plantings revitalize wet meadow ecosystems

by **John Mark Courtney,**
Kind Earth Growers LLC

Water in the landscape creates many opportunities for habitat creation and enhancement. After all, the enjoyment that open-water habitats, backyard ponds and water features provide for amphibians, fish, birds and humans alike is well known and at the core of mainstream gardening.

A large and often overlooked opportunity can be found in gardening the wet, seasonally “unmowable” areas of the landscape, including wetlands and fallow farmland. Over the last decade, pollinators and green stormwater management have been building a growing interest in going native among homeowners, businesses and corporate campuses. Wet areas can tap into the power of native plant diversity and create a functioning wet meadow or wetland habitat by properly planting and seeding according to the season. At best, they can transform an overlooked landscape into a restored habitat with renewed ecological function.

The Henrys live on five acres in southeastern Pennsylvania (growing Zone 6a) that was historically farmed and grazed until the late 1960s. The soil on the property consists of fine silt loam with the water table 6 to 18 inches below the surface and a fragipan layer at 18 to 22 inches. None of the soils is classified as hydric; however, there is a perched water table that leads to seasonal ponding and the presence of obligate vegetation.

Since the legacy seed bank was still somewhat

intact, a wet meadow matrix of sedges, rushes and other wet-loving forbs have emerged, along with other undesirable non-native annual, perennial and woody plant species. The Henrys are native plant enthusiasts, so they were pleased to know that there was already a preexisting population of wet meadow species.

However, the meadow had deteriorated. The family wished to improve the wet meadow diversity but wasn't sure where to start.



Wet Meadow or Wetland?

Wetlands are defined by the U.S. EPA as areas where water covers the soil or is present either at or near the surface of the soil all year, or for varying periods of time during the year, including during the growing season. Water saturation, or hydrology,

largely determines how the soil develops and the types of plant and animal communities living in and on the soil. Wetlands may support both aquatic and terrestrial species. The prolonged presence of water creates conditions that favor the growth of specially adapted plants (hydrophytes or obligate vegetation) and promote the development of characteristic wetland (hydric) soils.

A wet meadow is predominantly an open habitat with seasonally saturated soil dominated by herbaceous plants, typically hydrophytes. If there is hydric soil present, it is a wetland. If not, it is just a wet meadow. Regardless of official designation, both habitats provide essential ecosystem services for pollinators, wildlife and water quality. The Henrys had a wet meadow in need of enhancement.

100% Natural Rock!

featherock
BOULDERS • VENEER • GRAVEL • FIREPIT ROCK
Lightweight pumice rock from California • Easily carved & manipulated
Perfect for ponds, waterfalls, and any other water feature projects.



Above project by Matthew Giampietro of Waterfalls Fountains & Gardens Inc.
featherock.com • sales@featherock.com
800-423-3037 • 818-882-0300 ext. 16

Blending Ecosystems

The protocol for establishing most wetland meadows calls for the removal of existing vegetation by smothering, tilling or herbicide, then establishing a blend of seeds. The Henrys had misgivings about scraping the existing ecosystem, so a unique strategy was devised — one that had distinct challenges, but a main advantage of preserving the diversity of existing vegetation on-site.

The first step was to use landscape plugs to introduce vegetation that was missing from their meadow environment. In this case, the conspicuous absence was two foundational groups of plants: perennial forbs and warm season grasses. The meadow had none of the beautiful flowering plants that are the stars of wet meadows — no iron weed (*Vernonia noveboracensis*), Joe-Pye weed (*Eutrochium fistulosum*) or cardinal flower (*Lobelia cardinalis*). Absent, too, were the tall, late-summer grasses like Little bluestem (*Schizachyrium scoparium*) and Switchgrass (*Panicum virgatum*) that take up valuable real estate to keep annual weeds at bay.

This situation was likely a result of browse pressure from whitetail deer. A secondary impact from the deer seemed to be a proliferation of annual weed species, including Japanese stilt grass (*Microstegium vimineum*) and joint head basketgrass (*Arthraxon hispidus*) that had pioneered disturbed areas as tall perennial forbs had been browsed to near extinction. In turn, the fast-spreading annual joint grasses had discouraged warm season grasses from regaining a foothold.

The intention was to establish thick warm and cool season cover to help compete with the annual weed pressure and begin to form the basis of an attractive, diverse wet meadow. The suggested plant list included wet-loving, strongly rhizomatous flowering perennials like wrinkle leaf golden rod (*Solidago rugosa*), purple stem aster (*Symphotrichum puniceum*) and mountain mint (*Pycnanthemum tenuifolium*) to hold ground and provide important nectar sources for native pollinators. On the drier parts of the meadow, warm season grasses like switchgrass and

little bluestem were introduced. Also included were cool season sedges and grasses like tufted hairgrass (*Deschampsia cespitosa*), soft rush (*Juncus effusus*) and water sedge (*Carex aquatilis*).

Filling the Gaps

Initially, the Henrys had looked to gallon-sized plant material and the immediate gratification of mature plants, but price and availability were a barrier. After much convincing, and given the presence of hydrology and the diversity of species they wished to include, landscape plugs were a sure bet. Plugs are not only more cost effective, but they also minimize disturbance when planting and root faster to become more vigorous plants.

Planting plugs alone was not enough; a management regime was essential. Initially, a prescribed burn was used to knock down existing thatch, which allowed for good establishment of the installed plugs. However, it consequently caused a flush of joint head basketgrass. This was followed by a seasonal high-mowing regiment the following spring, which allowed warm season plants an opening to get a head start on competing with annual weeds. In the fall, a wet meadow seed mix was broadcast throughout the meadow area to allow for a natural cold stratification of the seed and germination the following spring. Given the amount of bare soil left behind by the smothering annual joint



Iris versicolor is always a good choice for its late-May blooms.

Keep the **green** on the **grass**, not in your **pond**.

Maintain your pond safely and effectively!

FREE CUSTOM TREATMENT PLAN
HealthyPonds.com



- ▶ All-natural beneficial bacteria
- ▶ Reduce sludge buildup and odor
- ▶ Natural alternative to chemicals
- ▶ Patented 30-day time-release technology
- ▶ Improve water quality and clarity

AquaSphere® PRO

Veterinarian approved and safe for fish, livestock, pets, plants and humans.



Enter code: **FIRSTTIME20** at checkout
20% OFF
Your first order
Calling in? Mention this ad for your discount!

HealthyPonds.com | 1.877.948.0303



HANDS DOWN HEALTHIEST KOI



Our Koi Care Facility Works!

Here's The Proof:



*ZERO health issues since 2018

*Year round availability of retail ready fish

* Beautiful fish that sell fast



Kloubec Koi Farm

North America's Premier Breeder of Champion Koi

319.846.2077

Your best source for wholesale koi and goldfish!

www.kloubECKOI.com





Cardinal flowers (top) provide important nectars for hummingbirds and other pollinators. Swamp milkweed (bottom) is always a happy stop for passing pollinators and other beneficial insects.

grasses, the Henrys also used some temporary cover crops to fill gaps.

After all this work — two seasons of planting plugs and seeding — and well into the third year of active management, the Henrys were not seeing very promising results. Many of the plugs seemed to have disappeared or were matted over by annual weeds, despite cool season cover crops. They were just about ready to throw in the towel when they decided to isolate an extensively plugged area of the meadow from the threat of deer browse by installing a three-wire offset electrified deer fence.

Beware of Deer

The result was extremely encouraging. Many plugs that had seemed all but swallowed by the weeds and deer suddenly reappeared. All the perennial forbs, thought dead, emerged robust. The cool and warm season grasses like *Deschampsia* and *Panicum* grew so vigorously that the competing annual weeds were significantly reduced.

In the end, it was not one management strategy, but an integrated approach — a lot of

patience by the Henrys along with curbing the constant deer pressure on the native flora — that led to this ecosystem's success. This year, the Henrys intend to fence in the entire wet meadow and look forward to seeing the fruits of their labor and investment. Hopefully, the old adage about establishing meadows — first year it sleeps, second year it creeps, and third year it leaps — will prove true, even if it's off by an extra year.

For this wet meadow habitat enhancement project, the presence of seasonal hydrology and legacy seed bank proved to be extremely helpful and fruitful. The site is not unlike many others throughout southeast Pennsylvania and the Piedmont. A great many of these wet meadows sit fallow or unattended. With the right management and time (plus learning some stern lessons from both botany and the environment along the way), these wet meadow habitats will increase in ecological value and functionality.

That's the power of native plants — when they are planted as interconnected tapestry, they can transform a landscape into a restored ecosystem. *CS*

About the Author

John Mark Courtney is an avid plantsman, professional grower and lover of all things wild. He is the founder and owner of Kind Earth Growers LLC, a native plant nursery specializing in aquatic, wetland and upland perennials in Upper Bucks County, Pennsylvania. After completing his bachelor's degree in environmental design at Delaware Valley University in 1998, he began to pursue his passion for native plants and environmental stewardship. His career has included positions at Bowmans Hill Wildflower Preserve and Aquascapes Unlimited Inc., where he was the head grower and operations manager for 20 years. He was part of the 2014 Greenhouse Product News Class of 40 Under 40 and winner of the 2016 Pennsylvania Landscape & Nursery Association Green Achiever award.

www.kindearthgrowers.com



Closely monitoring your koi is the best practice to keep your koi healthy. Refer to the checklist in this article for tips.

Diagnosis: **Koi**

10 questions to ask before you call for help

by **Taro Kodama**,
Kodama Koi Farm

If your koi should die or even look sick, you would be in a panic. If you did not know why the koi was dead or sick, you might wonder if your other koi were in danger as well.

Being in the koi business for almost 50 years in Japan as well as in the United States, my koi farm gets many phone calls or emails asking for help. I would like to share 10 common questions we ask to try to understand your situation so we can make suggestions accordingly. Please use them as a checklist so you can understand the situation yourself. If you have this information available before you call for help, it will help those who help you greatly.

Please note that we are not veterinarians. Our answers to these questions may not stand by proper medical knowledge. We are simply sharing the information that we found useful in the course of running a koi farm and working with our koi customers.

The answers to these questions help us visualize your pond and koi situation and possibly identify causes of the sickness. There are five causes of koi sickness: bacteria, parasites, fungus, virus and accidents. (Viruses are rare and require the professional help of a veterinarian.)

1. What are the water parameters?

Check your water temperature and pH, ammonia and nitrite levels. It is said that 80%



To avoid the loss of your lovely koi, check them every day. Look for open wounds at the bottom. If koi are really large, you will need to pull them out of the water for a thorough examination.

of koi health issues come from water. If you consider the fact that koi live in water, it makes sense. Understanding the basic water parameters is critical. This information helps us understand where the problem might have started. Poor water quality always triggers problems, both parasitic and bacterial.

2. How big is your pond?

Understanding the pond environment may give us a clue of what might have happened.

Knowing the total size in gallons of water is also critical when deciding what dose of medication is needed. If you do not know your total gallons of water, I strongly recommend measuring now. There are many ways to do it; a few of them can be found in blogs on my website (and on pg. 16 of this issue).

3. How many koi do you have?

Population density affects the health of koi. If you have too many koi in a pond with poor filtration, it will pollute the water and make your koi sick. Knowing your pond, koi population and filter system is very important.

4. How is the koi swimming?

Is the koi flashing, or scratching itself against the pond walls or rocks? Is it sitting at the bottom? Is it floating with its tail up? Is it floating, gasping for air by the waterfall? Is it only one koi or a group of koi? If the koi are dead already, how was it swimming just before it died? A koi's behavior can tell us many things. If they are flashing or sitting at the bottom, chances are they have parasites. If they are gasping and floating, they may have gill damage caused by parasites or bacteria. It can also be just a lack of dissolved oxygen.

5. Are there external ulcers?

Does your koi have any external injury markings? If you see open wounds, it is definitely a bacterial issue. You need an antibacterial treatment. This could also be a secondary infection coming from parasites, so we would need to examine that possibility, too. We often overlook issues found on the bottom of koi, so please do not forget to check them.



Don't forget to take pictures before you bury the body.

6. When did it start?

Did the signs of sickness recently start, or have they been going on for quite a while? If symptoms just started, you may only have to treat one koi in a quarantine tank. If you have been dealing with the problem for a while, you may have to treat the whole pond.

7. How many koi are infected?

Do you see the signs of sickness on only one koi, or more? This tells us how serious the problem is and how quickly we need to work on the problem.

8. Does the koi have an appetite?

If the koi still eats, that is a good sign. It still has the energy to eat. It is also great information, because in this case, feeding

When you need tanks call the experts at Polytank

- Numerous shapes and sizes
- In stock and custom molded
- Economical and self supporting



62824 250th St, Litchfield, MN 55355
(320)693-8370 (800) 328-7659
www.polytankco.com

ShinMaywa

Brighten Your Future

- ✓ Widest Operating Range
- ✓ Highest Overall Efficiency
- ✓ Lowest Lifetime Cost

ShinMaywa pumps deliver best in class performance for your water garden project. Visit www.Shinmaywasales.com and see how.



www.ShinMaywaSales.com

Double Deep 6
Pond Skimmer



www.aqua-nicheusa.com
Info@aqua-nicheusa.com
Instagram/FB: @aquanicheusa

medicated food becomes an option.

9. What do you feed? How often?

What you are is what you eat. If the koi's diet is not proper, it is hard to maintain good health, just like for us humans. A poor diet will not kill a koi right away, but it will affect the koi's health over time. Malnutrition or lack of a proper diet can be the cause of sickness or death.



10. Did you do anything new lately?

This includes adding plants, introducing new koi and performing water changes. New additions could come with parasites or other issues. Understanding a possible trigger of the problem can help us determine what happened and what we might do to fix it.



An unhealthy diet (top) can cause sickness or death. Remember to inspect your koi thoroughly (bottom) before asking for help.

I hope these basic questions help you whenever you see issues with your koi. Please examine your pond and koi using this list. If you are going to ask for help, this information would be very useful and appreciated. If you can take pictures of the ulcers or whatever you think is wrong, that would also be a big help for both veterinarians and dealers like myself.

Let's keep your koi healthy, and be happy with koi. For more information about preventative measures and symptoms of common koi diseases, check out my website at www.kodamakoifarm.com.

About the Author

Taro Kodama is the president of Kodama Koi Farm, the largest importer and distributor of quality Japanese koi in the United States. With locations in Japan, Hawaii, New York and New Jersey, Kodama Koi Farm carries more than 35,000 Japanese koi from the top breeders in Japan. Taro, along with his father, Mamoru, not only provide show-winning koi, but they also conduct many koi seminars.



Great Opportunity! Business for Sale

Patio Ponds Ltd

Building America's Best Pond Filters since 1987

- 70,000+ satisfied customers
- View all 14 models at: www.patioponds.com/pdfs/catalog.pdf
- Made with pride in the USA
- Complete listing at www.patioponds.com
- Business can be operated from anywhere
- No physical contact needed
- Interested persons email patiopondsltd@aol.com




A PUMP THAT PUTS YOUR POND AT A HIGHER LEVEL



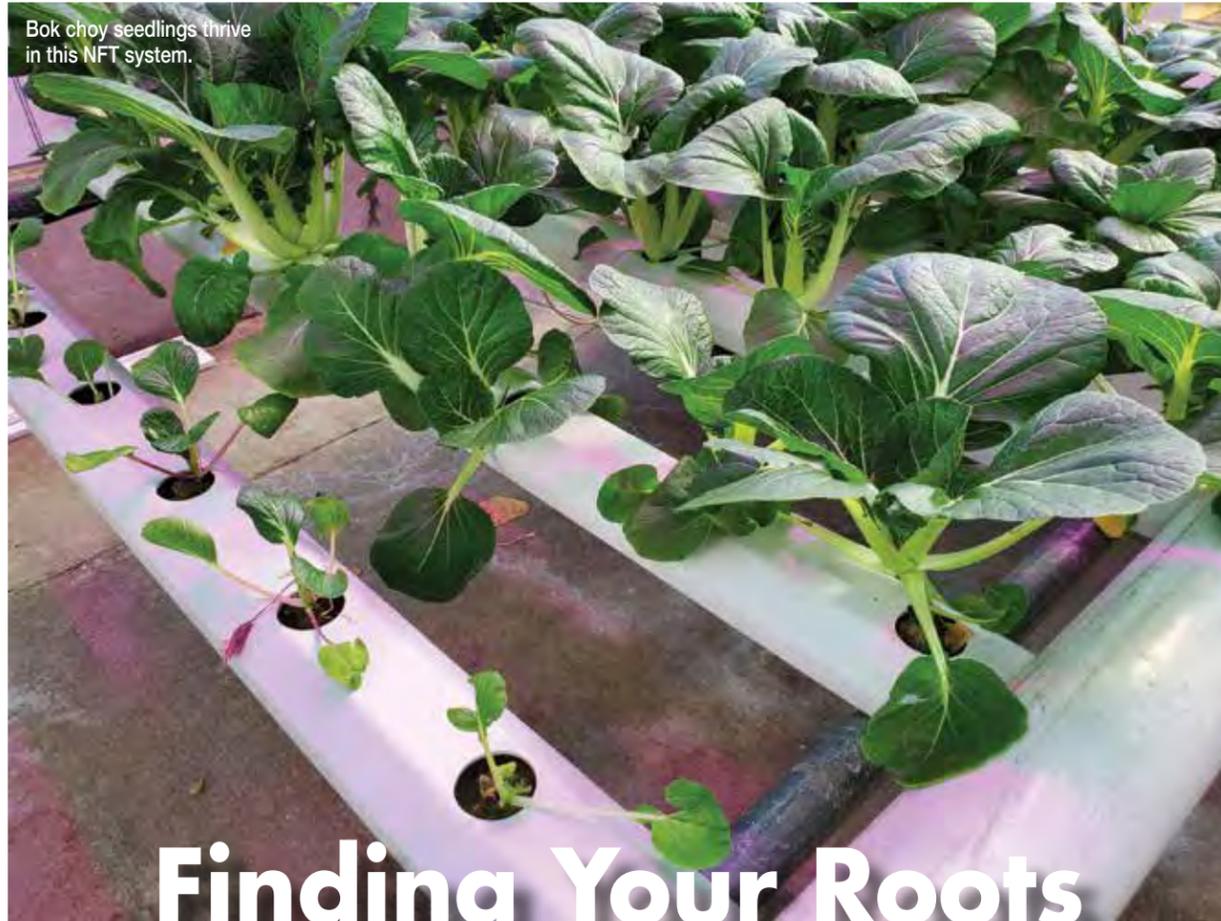
While there are multiple elements that make up a pond, one of the most foundational is the pump. After all, it's essential for the health of your fish and overall pond performance. Nitto Kohki LA Series blowers provide unparalleled performance for koi pond and water garden applications. This is why they're the professional choice:

- They last longer, especially in hot, humid climates.** Nitto Kohki aerators have one moving part per piston. Properly installed and maintained, they have an expected service life of 6+ years.
- They run quieter, supporting the natural design of ponds.** Listened to a diaphragm pump lately? In contrast, linear-piston LA aerators have about as much ambient noise as a light ballast.
- Their cost-of-ownership is lower.** LA Series blowers consume far less energy— have only 50-60% of the line current requirements of diaphragm pumps.

Nitto Kohki aerators better leverage filtration capability, increase the fish handling capability of existing ponds, and minimize the risk to valuable koi collections. They're the ideal selection when building a new pond – as well as when you're looking to add quality and reliability to your existing pond.

Call 800 843 6336, e-mail info@NittoKohki.com, or visit NittoKohki.com for more on LA Series blowers.





Finding Your Roots

Elevate your aquaculture with hydroponics

by **Ken Rust,**
Enterprise Aquatics LLC

A career in water has introduced me to many different industries. I am fortunate to have been involved in several of them over time — water features, natural lakes and ponds, and even wastewater — with water flow, filtration and aeration equipment the common factors.

Working with water features led me to aquatic plants, and eventually, with the help of some friends in the industry, I opened my own aquatic plant nursery. We used plants to filter water gardens,

became involved with recirculating aquaculture and raised fish at high densities. This industry introduced me to aquaponics — the process of growing fruits and vegetables using fish waste.

As I become better established and more experienced in the hydroponics industry, I would encourage my creative, innovative friends in the water feature industry to consider looking into hydroponics for a home garden, a larger project or simply your own curiosity.

Aquatic Engineering 101

Hydroponics is the culture of plants without soil. The plants have

all the available nutrients they need in a water-based nutrient solution that is delivered to them through a carefully designed system. They are cultured in designated contained spots and, if needed, supported vertically with trellising. Note that these plants do not grow structural roots in these systems; they grow almost entirely feeder roots. This saves energy that can be redirected into vegetative and fruiting growth. The result is a recipe of formulated nutrients constantly being delivered to them in a biologically available form. These formulations are generally well researched and designed both for the plant species and the

stage of growth of that particular plant. The plants are easy to culture because there are no weeds. They are cleaner after harvest. With well designed, complete nutrition, they are generally resistant to pests.

Did I mention there are no weeds?

How Does it Work?

A reservoir is required for supplying water to the plants. Make sure it's not too small, since you will be fine-tuning the water chemistry and will need fairly good buffering against high temperatures. As we all know, you must keep it covered, or it will grow our old friend — algae.

Aerate the water with an air stone. This adds oxygen, which the plant roots enjoy, and keeps nutrients uniformly mixed. A magnetic-drive pump can be used for circulation. Black vinyl tubing or PVC will deliver the water to the plants. (This should all sound really familiar.)

Next, decide which plant or plants to grow and find the conditions they desire. The parameters you should be concerned with are pH (generally lower than fish or biofilters enjoy),

electrical conductivity (EC), temperature and oxygen levels. Choose plants with similar preferences or create separate systems for each. If you don't, you will be tasked with splitting the difference with the water chemistry to make them all happy, likely compromising your results.

EC results from dissolving nutrient salts in the water. A testing pen is available to monitor both pH and EC. For simplicity, buy a commercially available fertilizer mix. There are many. Don't get analysis paralysis due to marketing claims and fancy labels. Do basic research and purchase based on your crop. Purchase and have on hand pH products to achieve and maintain a healthy pH throughout your grow.

After you have a reservoir of aerated, mixed nutrient solution formulated to make your specific crop happy, you can stand back and watch the magic. The magic happens at the roots. Unlike most other gardening and farming, you can observe the progress directly. When the roots develop, the vegetative growth follows. You will be impressed as the roots develop and enjoy the nutrients that are so effort-



A flood-and-drain table grows chives in rockwool blocks. These tables can be stacked and placed on wheels for restaurants to have ready access to fresh herbs and microgreens.

Bassinger Fisheries Koi & Goldfish Farm



Healthiest Koi and Goldfish in the USA!

- 100% Ulcer Free Farm
 - 100% Virus Free Farm
 - No New Fish Introduced in 17 years
- 100% Satisfaction Guarantee**



Rated Best All Around American Koi by International Koi Judge

- Brilliant Colors
- Stunning Patterns
- Great Selection of Different Koi and Butterfly Koi



One of two locations

Visit our new website at:

www.BassingerKoiFarm.com

817-366-1746

325-728-4237 Fax

thekoiman@sbcglobal.net

New Customer Special!

50% off

(on first \$500 order)



Not all ponds are created equal.

But then again, not all ponds are AquaTough.

Carlisle SynTec Systems' fish-friendly AquaTough™ pond liners provide top-quality performance with virtually no maintenance after installation. Combining design flexibility, long-term durability, J-Tear protection and easy installation makes AquaTough pond liners the ideal choice for a variety of waterscape applications.



Scan here to view the J-Tear comparison video and learn how AquaTough is a step ahead of the competition.



Experience the Carlisle Difference | 800-479-6832 | www.carlislegeomembrane.com

Carlisle and AquaTough are trademarks of Carlisle. © 2014 Carlisle.

lessly available. Many of us have seen this with plants in water garden streams, and the robust growth with hydroponics is similar.

Grow Systems

And now, the fun part — choosing your plant system. You have probably seen or heard of some of the approaches to aquaponics. Here I'll introduce five popular types of systems.

Nutrient Film Technology (NFT) provides water with a slow delivery in a gutter-type system. The gutter has a cap over it with holes cut at intervals. The water in the gutter runs down small ribs on the bottom in a thin layer — a “film” of nutrient solution constantly being delivered to plant roots. A small net cup with a small seedling in substrate is placed in each of the holes. This can be

duplicated as a DIY project with PVC pipe and a hole saw, with designs and instructions readily available online. This system is typically used to grow

Place a timer on your pump to deliver nutrients several times a day. This system is ideal for both larger plants and fruiting plants.

leafy greens.

Dutch buckets are another option. These have specially designed drains for adapting to a central PVC pipe drainage trunk. Just fill the bucket with an inert substrate, such as coco fiber, perlite or a mixture. Many substrate mixtures are available by the bag. They will differ in

their ability to hold water and nutrients, as well as porosity, which will allow oxygen to reach the roots between feedings. The buckets are lined with a mesh. I use paint strainers, which are inexpensive and readily available, to prevent any substrate from returning to the reservoir. The bottom drain assembly has an ell that pulls out all nutrient solution after a feeding, and the bucket adapts to fit over a 1 ½-inch PVC pipe. Drill a hole in the top of the pipe, and the bucket sits on top. Space the buckets along the drainage pipe and feed the individual plants using a vinyl tube with small inline valves. Place a timer on your pump to deliver nutrients several times a day. This system is ideal for both larger plants and fruiting plants. With a larger amount of substrate, they can be in place for long periods of production. They will need support from above from a string or



A variety of leafy greens with similar nutritional needs can be grown together in a single system.

Breath_{of}Life



Sentinel
AERATION SYSTEMS
Now with self weighted diffusers

Use our online aeration system request form to help you select the proper system at www.easyprowater.com/aeration-system-request

As one of the country's largest manufacturers of diffused aeration systems, EasyPro has the products and the experience to help you with nearly any aeration project.

2021
Catalogs
are Available!

Call or visit easyprowater.com to request your catalogs today!

800-448-3873 EASYPRO.COM



kelly billing
design | supply | consulting
443.504.2345
nelumbo22@gmail.com
www.waterbecomesagarden.com

changing the way Water Becomes a Garden

trellis, and you may need a ladder to continue to pick. This is not an exaggeration — think 8-foot-tall kale and Brussels sprouts!

A Deep Water Culture (DWC) raft uses a rectangular tank with flow and aeration from 6 to 12 inches of nutrient solution. Rafts cut with holes float on the surface of the nutrient solution. Small seedlings — mostly leafy greens — are placed in the holes, and roots extend through the raft and into the water column. These systems are common in commercial projects. Rafts are typically 2 by 4 feet, and mature plants are harvested out of the rafts at one end of a rectangular tank. At the other end of the tank are seedlings that are loaded in after the floating rafts are pushed down to the harvest end. With a 2-inch seedling, mature lettuce can be harvested in just 35 days.

Block and slab systems are a fourth option. These systems most often have been used with Rockwool; however, there are new products out there using coco fiber or coir. Both are inert and provide a basic substrate for feeder roots to grow through while the nutrient solution is delivered to each plant with an individual flexible tube. This is about graduation from one substrate block size to the next. Starting with a seedling grown in a 2-inch starter plug, it is then transferred to a 4-inch-square substrate block and fed nutrients to make a larger seedling. As roots begin to fill and explore below the 4-inch block, it is then graduated to a larger block or slab for the rest of its growing life. Three or four plants can be placed on a single slab. Rockwool products come in a variety of sizes and arrangements — from 1-inch plugs to 8-inch slabs — and are wrapped in plastic to protect against algae production and direct the fluid horizontally before allowing it to escape and drain to the reservoir. These slabs can be placed on a “flood table” to capture and

drain water back to the reservoir. Commercial operations generally use a large gutter on a stand to capture and return nutrients to the reservoir, with the slab directly over the gutter. Since these may grow larger fruiting plants, trellising above the plants is required for support. This style can be really rewarding even on a small basis.

Finally, flood and drain table setups are shallow table tanks supplied with a sump. Mature plants and large seedlings are produced in this manner, as are microgreens. The type of container varies from thin slabs of rockwool to grow microgreens to large containers with bottom holes using a coco fiber mix. At timed intervals, a nutrient solution is pumped in through a screened inlet in the table, flooding to a desired level determined by a small standpipe and draining back to the reservoir. The flooding overfills for a portion of time with the nutrient solution. When the pump turns off, the solution drains out. The unique part of the installation? The pump has no check valve, and the nutrients drain completely out of the table

through the pump and associated plumbing. The screened inlet prevents water spray on the way in and protects the pump and reservoir from accidentally receiving any debris from plants on the table. The standpipe simply controls the water level during the filling interval.

So, What Can You Grow?

The list is long — fruits, vegetables, ornamentals, you name it. The Netherlands uses a lot of hydroponic technology, and that tiny country, for the most part, feeds the entire continent of Europe.

I think this technology, although increasing in popularity, is still way underutilized in STEM education programs and in science and agriculture classes in schools. Most of the professionals in the water feature and koi pond industry are already innovative and enjoy water engineering. Hydroponics, small or large, will likely be something you will enjoy. ☺

About the Author

Ken Rust has managed ponds, lakes and water features for 24 years, specializing in design and installation of aeration equipment. His aquatic career began in 1994 after graduating in fisheries and aquaculture from Louisiana State University in Baton Rouge. Ken provides sales and design of aeration equipment and maintains ponds and lakes through his company, Louisiana Pond Management. His latest venture is Enterprise Aquatics LLC, which provides high-quality, science-based aquaponics systems and supplies. Ken enjoys giving talks on pond management and aquaponics, cooking, playing the fiddle and gardening, while raising five daughters with his wife Brooke in Baton Rouge.
www.enterpriseaquatics.com



This Rockwool block & slab system grows cucumbers so high that you need scaffolding to harvest.



Workers harvest lettuce (middle) after lifting a raft out of a DWC raft system. Dutch buckets (bottom) hold huge Brussels sprouts supported with trellis lines to hold them.



Beautifully simple water gardening



To learn more, contact our Dealer Support Team at 800-353-3444 or email us at newcustomers@rchagen.com

An Inside Job

New desert home built around indoor water wall & koi pond

by Kent Wallace,
Living Water Solutions

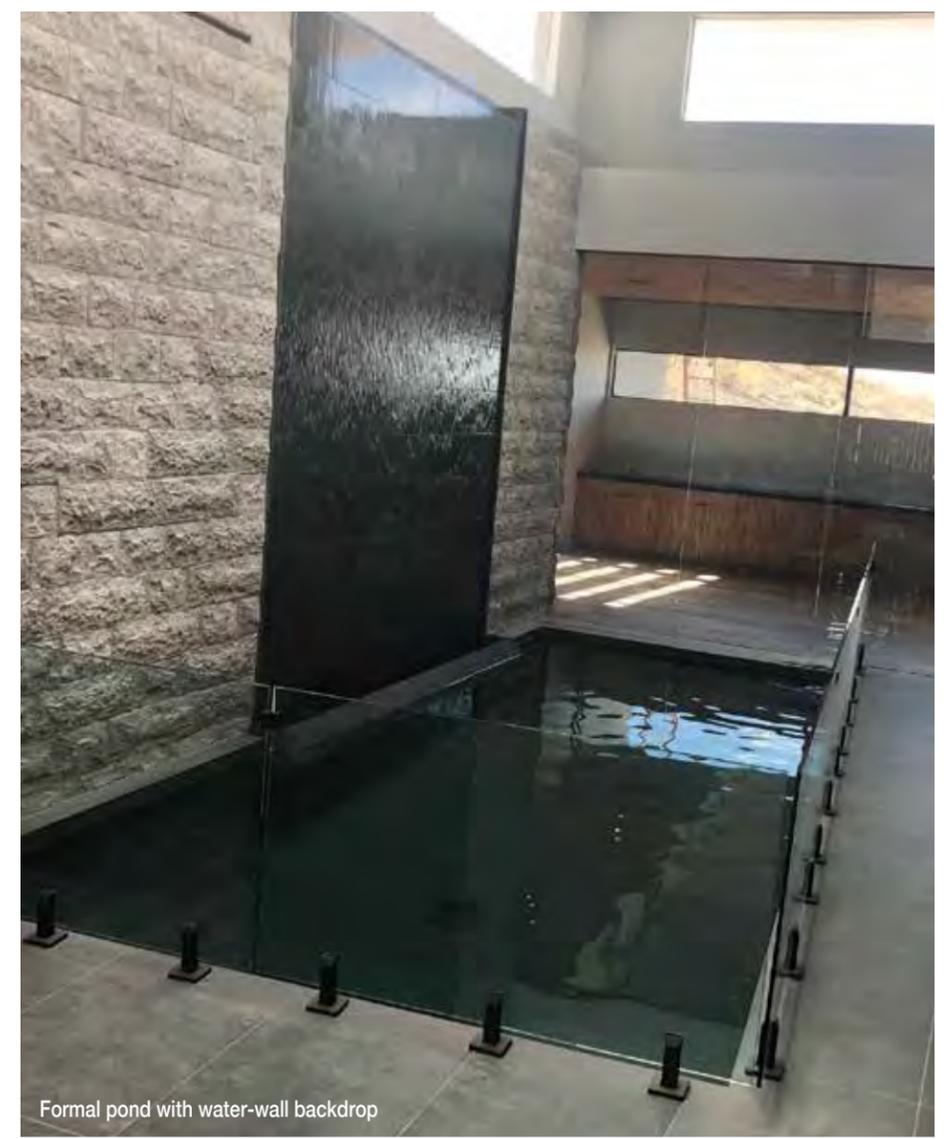
When the new owner of a yet-to-be-built home wants a koi pond and the house gets built around it, the pond shell is often the first concrete to be installed.

Writing on the Water Wall

This project started in late 2019 and finished in the spring of 2021.

SERIES:
Best Pond Practices
This is an installment of an ongoing, multi-part series. Be sure to watch for further installments in future issues!

The pond is a trapezoidal interior koi pond inside the home's entrance from the garage area on one side and the front entry of the home on the other end. Entering the home, you pass by the koi pond first. A ceiling-high water wall is the backdrop for the pond. A year earlier, the owner had a similar design for a home through another developer that did not get built. The design for the water wall over the pond was a theme that was important to the owner. When the owner changed developers and moved over to Blue Heron, he took the water wall concept and me with him. Water walls can be a maintenance issue over time, so the decision was made to make it a separate system from the pond, isolating it with a narrow trough just above water



Formal pond with water-wall backdrop

Water walls can be a maintenance issue over time, so the decision was made to make it a separate system from the pond, isolating it with a narrow trough just above water level as a chlorinated feature.



**THE FINEST IMPORTED JAPANESE KOI
FROM THE BEST BREEDERS IN THE WORLD**

CALL : 1-844-GRANDKOI (472-6356), 1-201-245-9352.

WE ARE ONE OF THE LARGEST JAPANESE KOI INVENTORY HOLDERS IN THE UNITED STATES. TO SUPPORT HOBBYISTS IN USA, WE HAVE COLLABORATED WITH LEADING MANUFACTURERS OF AUTOMATED FEEDERS, CERAMIC MEDIA, AND OTHER KOI ACCESSORIES "MADE IN JAPAN".

INFO@GRANDKOI.COM

USA | JAPAN

WWW.GRANDKOI.COM

3751 GA-166, DOUGLASVILLE, GA 30135, UNITED STATES



The plumbing manifold (left) is pressurized and ready for inspection. The pond shell (middle) is the first concrete to be installed. The filter area (right) has fabric covers on the prefilters and air-lift biofilter. Air pumps were mounted on the back wall. A low-pressure bioreactor was used as a midwater circuit.

level as a chlorinated feature.

The water wall, koi pond shell and the outdoor swimming pool were all constructed by Anthony and Sylvan Pools in Las Vegas, Nevada. Anthony and Sylvan Pools has always been cooperative when following my pond-plumbing requirements, such as no hard 90-degree bends and the use of drain

waste and vent fittings throughout.

They stubbed out the plumbing in the filter pit area as a combined manifold and left it with all the plumbing lines in and out of the pond, including the air lines, staying pressurized throughout the project. The inlets and outlets on the drains are internally threaded for pressure testing, as are the 1 1/2-inch return

fittings and skimmer. Paul Parszik of Artisan Aquatics came in to apply the polyurea seal coating and really enjoyed working indoors and out of the weather for a change.

Filtration Design

At just over 4,000 gallons, this formal design was perfect for vertical pond

Your one stop solution for clear, healthy water and Great Profits



Our line of upper end filtration products is designed to give your customers clear, healthy water while using a minimal amount of electricity.

You'll love the profits that can be generated with our line of products.



Grand Champion Technologies

GC Tek
302 S. Sandy Lane
Chandler, Okla. 74834
866-712-7007 405-258-5551 Fax 866-728-0678
www.gctek.com info@gctek.com



Plumbing and rebar is installed, so we're ready for Shotcrete.

return drains operated with an air lift system. At 20 feet long by 8 feet at one end and 10 feet wide at the other, I used two vertical pond return (VPR) drains, one in-pond floating weir skimmer mounted in the top step and one midwater drain on the long side opposite the water wall. The returns are the 3-inch center up-flow lines in the VPR drains and six 1 1/2-inch returns with four of them on the short wall opposite the wall where the skimmer is located.

Each drain has a 3-inch line traveling directly to its own 55-gallon drum radial separator as prefiltration. As each line comes up toward the inlet to its tank, a 3-inch DWV sweep tee is used as the turn into the tank, with the open end extending just above tank level as a vented cleanout for future use. The two tanks are connected at the bottom with a 3-inch knife valve separating them during normal operation. During clean-

ing, the valve is opened so the discharge pump in one of the tanks can drain both at the same time, eliminating the need for two pumps.

A 3-inch line connects each prefilter **The down-flow air purge line is set at a slight angle to help air find the high side of the pipe and travel back up to the top without fighting the downward flow of water.**

to another 55-gallon drum containing an aerated biofilter with a 4-inch air lift in the center. Two 3-inch transfer lines in equals one 4-inch line out. The 4-inch line out is connected to a 4-inch down-flow air purge line divided into two

3-inch returns to the centers of each VPR drain. The down-flow air purge line is set at a slight angle to help air find the high side of the pipe and travel back up to the top without fighting the downward flow of water.

Circulation & Plumbing

This system has three air pumps. One 80 LPM Medo air pump on a timer supplies air to the two air rings on top of the VPR drain domes through a pair of small valves for balance. The second is a 45 LPM Medo air pump supplying air to the 4-inch air lift, creating between 4,000 and 5,000 gph of water flow through the system. The third is a 60 LPM Medo air pump supplying the air ring inside the aerated biofilter. The air ring is located near the outer edge of the filter, creating a circulation pattern within the tank up the outside and down the center, allowing the bacteria housed



Polyurea was installed on the water wall using scaffolding.

on the media to encounter the ammonia-rich water multiple times for each pass through of water in a similar fashion — as a moving bed, but without moving the media. The media is 7 cubic feet of Matala chunks. I prefer using Matala as 2-inch chunks rather than flat sheets, because I think it allows for better flow along with easier cleaning with an air blower.

The skimmer and midwater drain each have 2-inch dedicated lines valved together at a manifold just before the inlet to an exter-

nal pond pump. The pump is a WLim Wave 1 1/6 Horsepower pump flowing approximately 4,000 gph pushing water through a low-pressure biofilter and back to the pond through the six 1 1/2-inch returns. The pressurized biofilter is one of my own designs, creating almost no pressure as a fines filter. This design allows the use of the most efficient low-pressure pumps on the market. The UV light is a 4-inch diameter, 57-watt flow-free design installed between the external pump and the low-



Water goes in through a water meter, with aerators turned on.

YOUR AD HERE!



POND TRADE 2021 media kit
www.pondtrademag.com

Secure your ad space now in the popular industry bimonthly publication written for and by pond professionals.

For more info or a media kit, contact:

708 873-1921

llgelles@pondtrademag.com

www.pondtrademag.com

TURN YOUR DATABASE INTO DOLLARS

WITH

pondtent

The done-for-you email marketing system that doesn't cost a fortune.

Visit www.mypondtent.com for more information or call **215.805.8257**.

ONE PLACE TO LEARN MEET AND GROW

HARDSCAPE[®] North America

- Re-connect with your industry peers and leaders!
- Hands-on testing of new hardscape products
- Over 1,000 indoor and outdoor exhibits between HNA and GIE+EXPO
- Over 95 hours of hardscape education offered in both an indoor and outdoor classroom setting



OCTOBER 20-22, 2021
Louisville, Kentucky

REGISTER HERE



www.HardscapeNA.com



pressure biofilter. Clarity Pool Service in Las Vegas did an amazing job with the filter installation and connections to the plumbing.

Solar Protection

Toward the end of the project, the owner asked me if there were covers for the tops of the 55-gallon drum filters. I had stopped trying to supply covers for these some time ago, because everything I have constructed them out of gets destroyed by the Las Vegas sun. He really wanted something, so I created shade cloth covers with a bungee cord-style nylon ring to hold them in place. The shade cloth should last for quite a while, considering it is made to be in the sun. So, here's hoping for the best!

With the pond running and the bottom drain air diffusers switched off, the surface looks completely still. This is a great effect, considering the pond is just over 4,000 gallons with a total flow rate of at least 8,000 gph, all fully oxygenated in real time using air-lift technology. ☘



About the Author

Kent Wallace was born and raised in Las Vegas. Kent spent most of his adult life

in the automobile industry at independent shops and dealerships, including his own shop as a racecar fabricator at age 24. Then, in 2001, a neighbor asked Kent if he could build her a koi pond like the one Kent's father had.

From that point on, pond building became his new passion. That first pond he built was submitted to Better Homes & Gardens magazine and won Best Courtyard Nationwide in their special-interest publication.

livingwatersolutions.com
702/845-6782



POND MEGASTORE

Visit PondMegastore.com & PondLotus.com for many more





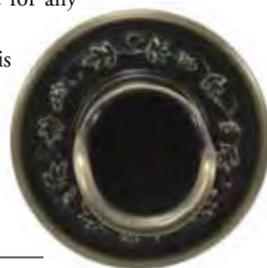
Black Oak Foundry's Sonoma Scupper

The newest addition to Black Oak Foundry's top-quality medium bronze scuppers is the Sonoma Scupper in oil-rubbed bronze with a black background.

The Sonoma Scupper's design is inspired by Greco-Roman architecture, while the back plate's grape and vine detail pay homage to the serene wine country. This detail, combined with its classical, clean flowing lines, makes the Sonoma Scupper an eye-catching water feature for any pool, spa, fountain or outdoor living design.

The Sonoma Scupper is available in several finishes and is remarkable in oil-rubbed bronze and antique bronze.

Black Oak Foundry
949/305-7372
www.blackoakfoundry.com



Atlantic Hardscape Spillway Project Bundles

You provide the hardscape materials, we provide the rest! Atlantic-OASE's Project Bundles include all the components you need, ready to be assembled into the water feature of your dreams. Bundles come with everything needed to create one of three styles of fountains, except the stone. Choose from the Copper Spillway Bowl, Stainless Spillway or Color Changing Colorfalls project bundle. Each offers size and color options to ensure there's a fountain for every taste and décor.

Atlantic-OASE
330-274-8317
www.atlantic-oase.com
info@atlantic-oase.com



Hardscape North America 2021 Opens Registration

Registration for the hardscape industry's largest trade show, Hardscape North America (HNA), is now open, as organizers make plans to bring the industry back together in person. Special features will include a Hands-on Drone Zone, a UTV Test Track, Hardscape House, expanded VIP Passes and more. Set for Oct. 20 – 22, HNA 2021 will be held at the Kentucky Exposition Center in Louisville.

Exhibitors and attendees alike are eager to come together for the show this October. In a recent survey of past attendees, 82% indicated they are likely or very likely to attend HNA 2021.

Hands-on Drone Zone

Attendees can test their ability on a flight simulator before stepping into the Drone Zone located on the exhibit floor to fly a drone with an expert trainer. Hourly sessions will range from basic regulations surrounding using drones for marketing, thermal imaging, multi-spectral analytics, GIS mapping and more. Attendees will be entered to win a daily drone giveaway.

UTV Test Track

For the first time, HNA attendees will have the opportunity to drive and compare the latest utility terrain vehicles. A test track in the Outdoor Demonstration Area will allow attendees with a valid driver's license to put vehicles through their paces on curves, hills, rocks, bumps — and maybe even a little water and mud.

Hardscape House

The 42,000-square-foot, under-roof pavilion adjacent to the 20-acre Outdoor Demonstration Area will include exhibitor displays for hands-on testing.

Attendees interested in education at HNA can save money by purchasing VIP Passes. Available to both contractors and dealers, this admission upgrade gives the attendee up to 50% off the cost of purchasing sessions individually. All passes include open access to eight conference sessions, six Hardscape Now sessions, four dealer sessions, two hardscape workshops and the dealer networking breakfast (for dealers only). The cost is \$229 and \$189 for ICPI/NCMA/BIA members, in addition to trade show admission.

To register, see a complete schedule of events, book your hotel accommodations or view available travel discounts, visit hardscapena.com. Get HNA updates on Facebook at www.facebook.com/HardscapeNorthAmerica, on Twitter @hardscapena or on Instagram @hardscapena.

The 28th Annual Greater KC Water Garden Society Tour is On!

The "Puddle Jumping Water Garden Tour" spans six Saturdays, June to September

The 28th annual Greater KC Water Garden Society tour will have a new and improved look for the 2021 summer season. Mark your calendars for the "Puddle Jumping Water Garden Tour" spanning six Saturdays from 9 a.m. to 5 p.m., June to September. Each tour will safely deliver an inoculation of blooming happiness, with plenty of oohs and aahs. Six individual tours



will feature stunning water gardens, all in close proximity. The Puddle Jumping Water Garden Tour spotlights different locations around the metropolitan area, including Lawrence, Kansas. A new feature for 2021 is the addition of builder-sponsored garden parties from 6 to 10 p.m. with night-lighting, refreshments and those magnificent, night-blooming tropical water lilies.

Emerge from hibernation to glimpse the beauty of rippling streams and the music of cascading waterfalls as you stroll through the private gardens. Listen as the fairies whisper their secrets and savor nature's art in bloom. A water garden can take on different personalities based on its setting, from a small

rustic pond with a garden train tucked into a backyard or a formal, classic pond in a historic neighborhood to a palatial estate with multiple ponds and majestic waterfalls. Six Saturdays over the summer will let you experience many different designs and styles, including a swim pond.

Each tour will feature six to 10 water gardens in a relatively small geographic area. These six tours give you plenty of time to visit beautiful water gardens in geographic proximity, reducing drive times and maximizing your pleasure.

The season pass for all six Saturdays is \$20 and is available now at Eventbrite (www.eventbrite.com/e/puddle-jumping-season-pass-tickets-134649092059) and in garden centers starting June 1. Individual tours are \$5 and are available at Eventbrite or at the tour.

Children under 14 attend for free. The six tour dates are June 26, July 10, July 24, Aug. 7, Aug. 21 and Sept. 11. This is the Greater KC Water Garden Society's only fundraising event. Proceeds continue to support building and maintenance of educational ponds for schools and other nonprofits. Plan now to attend the Puddle Jumping Water Garden Tour! Sixty educational ponds have been built to date. Follow us on Facebook or visit us at www.kcwatergardens.com to learn more.



MOD Professional-Grade, Designer Fountains from Blue Thumb

MOD fountains are museum-quality sculptures with the element of flowing water, created and signed by the artist. The 36-inch-tall fountain is made from steel and then powder coated to a beautiful color. They come complete with the molded basin and everything you need for professional installation. Stand out by offering professional-grade fountains from Blue Thumb.

Blue Thumb
888/619-3474
www.shopbluethumb.com

New HIBLOW Water Garden (WG) Series Pond Aerator Offers Around-the-Clock Operation

The new WG Series pond aerator from HIBLOW, specifically designed for ponds and aquaculture, is the culmination of nearly 50 years of engineering innovation.

Constructed with the same precision and quality as the best-selling HP and XP Series, the WG Series is built for continuous 24/7/365 use. The aerator runs on less power than a standard incandescent light bulb and has a real-life noise level that is far closer to a whisper than a normal conversation. The WG can be rebuilt twice for a fraction of the cost of a new pump, extending the life by many years. Not only is a HIBLOW the highest-

quality option on the market, but it is also the most cost effective when considering reparability and longevity.

Whether your intention is to improve the clarity of your water, prevent plant and algae growth or grow bigger and more fish, the WG Series can help you reach your goals. Make it a HIBLOW pond!

HIBLOW USA
Mike Miner
www.hiblow-usa.com
734/944-5032



PondPro 2000 Offers New Product for Concrete & EPDM Ponds

PondPro 2000 announces the immediate availability of their newly formulated product. Thousands of customers have come to rely on PondPro 2000 over the years. In 2020, we reached out to some of our retail resellers and asked them how we could make it better. We got their input and put our team to work, starting with the No. 1 issue — a separate product for concrete ponds. Now PondPro 2000 can go directly over EPDM and concrete ponds, fountains and pools. We have also significantly reduced the dry time from 4 days to 10 to 12 hours, allowing our customers to get their fish back into their pond much more quickly. Our tensile strength has increased from 800 to 1200 psi, and our elongation from 200 to 400%.

“We tested it in the fall, and it far exceeded our expectations. It is still the best pond coating out there,” said Pond & Koi Gardens.

Current pond supply store resellers will be receiving a separate email with newly reduced pricing! PondPro is currently looking for distributors in the United States and Canada.

PondPro 2000 is a registered trademark in the United States.

Greg “Kaz”
855/788-5836
greg@pondpro2000.com
www.pondpro2000.com



AMP Lighting Opens New Centrally Located Distribution Center in Texas

AMP Lighting has announced the grand opening of a new central distribution center located in Dallas, Texas.

AMP’s same-day shipping policy has always provided immediate shipments for landscape lighting contractors, but the AMP team also recognizes the need for speed — the need for shorter transit times and quicker deliveries. With this latest addition to its regional shipping centers, AMP is accomplishing this goal for speed nationwide.

The new location is especially ideal for AMP PROs operating in central states like Texas, Oklahoma, Kansas, Arkansas and Louisiana who will now largely benefit from 1 to 2-day standard shipping. Contractors operating in northern central states in the Midwest who were accustomed to waiting 3 days or more for shipping will also now

benefit from shorter average delivery times.

What does this mean for AMP PROs in central states?

- **Faster Deliveries.** Helping businesses meet project deadlines more quickly, there are no lead times for manufacturing or long transit times.
- **Increased Bandwidth.** We have the flexibility to accept more jobs, small or large. More jobs mean a larger network of connections and more opportunities.
- **Higher Profits.** More jobs translate to more money, plain and simple.

With the opening of the new facility in Dallas, the company now warehouses and ships from the North, South, East and West.

Visit AMP’s website today to learn more and find out how to become an AMP PRO: www.amplighting.com



Ecological Laboratories Inc. Welcomes New Director of Aquarium and Pond

Ecological Laboratories Inc. is proud to announce and welcome Jason Faust as our New Director of Aquarium and Pond. Jason will ultimately be responsible for growing the Aquarium and Pond categories within the domestic and international markets under the Microbe-Lift family of brands. His responsibilities will include creating and implementing sales and marketing strategies that will target sales and market-share growth.



Jason will bring a great deal of passion and energy to the position. He has been in the industry for more than 25 years in various roles, from Research and Development to Product Development to National Sales Manager. Jason has been an active aquarium and pond hobbyist from an early age and has a great understanding of the current state of the business and trends that continue to shape the aquarium and pond markets. Many will undoubtedly know Jason already, as he may have worked directly with your account during past employment at Aquarium Pharmaceuticals and Danner Manufacturing.

Jason Faust
Cell: 215/859-2211
Office: 800/645-2976 ext. 152
Jason.Faust@ecologicalabs.com



New High-Volume Asynchronous Magnetic-Drive Pumps from EasyPro

EasyPro, where power and efficiency meet to give you the most out of your water features, now offers seven models of 115-volt mag-drive pumps, from 1,900 gph to 9,500 gph. They’re fully submersible, fish safe, and can be run horizontally or vertically. All have a removable prefilter screen. To request your full-color catalog or for more information on EasyPro products, call 800/448-3873 or visit www.easypro.com.



Matala Unveils New BioSteps Pond Kits

Matala introduces new BioSteps pond kits that are ideal for water garden ponds up to 2,000 gallons and koi ponds up to 1,000 gallons.

They are available in four models: BioSteps Plus Kit, BioSteps Plus-WF Kit, BioSteps Pro Kit and BioSteps Premium Kit.

The BioSteps Premium Kit is the basic model, with the 16-watt EZClear UV clarifier and the waterfall spillway. It comes complete with the new BioSteps filter, MF-1100EZ submersible pump and 25 feet of 3/4-inch, quality "kink-free" hose and connectors to make installation quick and easy.

The BioSteps Plus Kit includes a BioSteps filter with six Matala filter pads: two green pads, two blue pads and two gray pads. It has amazing filter capacity and improved management of solids settling within the filter chamber. With a flow rate of 800 to 900 gallons per hour, it has an open-flow gravity return to the pond.

A new swivel-inlet fitting has barb sizes that include 3/4 inch, 1 inch, 1 1/4 inches and 1 1/2 inches. The outlet fitting is for a 1 1/2 or 2-inch pipe connection or connection to the optional waterfall spillway.

Matala USA
www.matalausa.com

United Aquatics Pond & Aquarium Filter Media Bags

United Aquatics' Water Garden Pond & Aquarium Filter Media Bag has a drawstring and plastic toggle to hold it closed. Strong, top-quality materials are designed to hold all types of filter media and can also be used as a pond pump barrier bag to protect submersible pumps.

An inexpensive and versatile filter media bag that is made of 100% polyester, it features a top drawstring to ensure easy closure. The black micro fine mesh bag is great for biological rings, volcanic rocks, coral sands, ceramic rings, activated carbon, ammonia remover resins or any of your favorite aquarium or pond filter media. Use these media-filled bags in power filters, canister filters, or wet/dry filters to customize pond filtration. The bags are reusable; simply rinse with water and refill as needed.



sales@unitedaquatics.com
www.unitedaquatics.com
United Aquatics LLC
856/985-9339



New OASE Filtral UVC Filter

OASE Filtral UVC 400, 800 and 1400 systems clean and clear ponds and fountains up to 1,400 gallons, guaranteed! They feature mechanical filtration, biological waste conversion, aeration and ultraviolet clarification in one compact case, so you can simply drop them into the water and plug them in. The integrated high-efficiency 120V pump is run dry and frost protected, with a proprietary grounding plate for absolute safety. Each Filtral UVC includes three fountain heads, telescoping swivel and a valved fitting for optional spitter or waterfall.

Atlantic-OASE
330/274-8317
www.atlantic-oase.com
info@atlantic-oase.com



MARKETPLACE

Aquascape Inc. Introduces New SLD 2000-5000 Adjustable Flow Pond Pumps

Aquascape Inc. announces a new addition to the SLD pump family. The SLD 2000-5000 Adjustable Flow Pond Pump joins the SLD 4000-7000 and the SLD 5000-9000 to offer asynchronous motor technology and excellent reliability at a reduced flow rate for smaller water features. The included Smart Control Receiver manages flow adjustments through the integrated control panel. Wireless control and customized scheduling can be unlocked with the Aquascape Smart Control App.

“We’re excited to offer our first solids-handling pump for ponds and water features that run more modest in size. Now the average water feature install can run on a professional-grade pump and handle solid debris with ease,” says Dave Kelly, vice president of product development for Aquascape Inc. “The convenient smart control capabilities allow the pump to be controlled from anywhere at any time using a smartphone or tablet.”

The submersible pump provides a maximum flow rate of 5,144 gallons per hour and is backed by a 3-Year Limited Warranty. With a WiFi connection, water feature owners can control all adjustable aspects of the pump in one easy-to-use app. Simply download the Aquascape Smart Control App from the App Store or Google Play and pair the Smart Control Receiver with the app. Other SLD pump offerings include the SLD 4000-7000 and the SLD 5000-9000. All Aquascape adjustable flow pumps come with the same smart control features and durable housing that will not corrode or rust.

For more information about Aquascape and our full line of water feature products, visit www.aquascapeinc.com or call 866/877-6637 (US) or 866/766-3426 (Canada).



Koi-Kit
For sparkling clear Koi pond water.
treats 100,000 gallons

FREE SHIPPING!

Aquacide.com/kit
800-328-9350

AQUACIDE CO. PO Box 10748 DEPT 520, White Bear Lake, MN 55110-0748

Mt. Parnell Fisheries Inc.
Goldfish & Koi since 1923
When Quality Matters

Born & Raised in the USA

1574 Fort Loudon Road ~ Mercersburg, PA 17236
800-438-4652 ~ info@mtparnell.com

NEED MARKETING HELP?

pondtent
215.805.8257

WE TURN YOUR DATABASE INTO DOLLARS

KODAMA KOI FARM
Quality Wholesale Koi and Pond Supplies
Contact us for a price list

1-808-354-7031 info@kodamakoifarm.com
www.kodamakoifarm.com

Pond Aeration
Mescan Windmills
Farm & Koi Pond Aeration
PondAeration.com
440 236-3278

KLOUBEC KOI FARM
WE DELIVER MORE...

Family owned & operated,
3 generations of award winning
excellence in aquaculture

(319) 846.2077
www.kloubECKoi.com

ONE PLACE TO GROW
NETWORKS • SKILLS

HARDSCAPE
North America
OCTOBER 20-22, 2021

HardscapeNA.com

Don't miss out on this
Market Place advertising opportunity.
See our website:
<http://www.pondtrademag.com/advertise-with-us/>

Advertisers' Index

AMP / Volt Lighting	17
Anjon Water Garden Products	2
Aqua Ultraviolet	26
Aquacide	64
Aqua Niche	44
Aquascape	24
Atlantic / OASE	68
Bassinger Fisheries	47
Biosafe Systems	3
Bioverse, Inc.	38
Carlisle Syntec Systems	48
Discount Ponds	20
Diversified Waterscapes, Inc.	25
EasyPro Pond Products	34, 35
EasyPro Pond Products	50
Evolution Aqua USA, Inc.	67
Featherock, Inc.	38
Fishpondaerator	7
Fitz's Fish Ponds, LLC	67
GC Tek	55
Grand Koi	54
Hardscapes	58
Hiblow USA, Inc.	19
Joe Mescan Windmill	65
Kloubec Koi Farm	39, 65
Koi Smart Pond Supply	17
Laguna Water Gardening	52
Microbe-Lift	30
Mt. Parnell Fisheries, Inc.	64
Netherland Bulb	27
Nitto Kohki	45
Patio Ponds	44
Polytank	42
Pondliner.com	18
Pondtent	57
Pond Megastore	59
Pond Pro 2000	32
ShinMaywa	43
Ultra Balance Koi Food	13
United Aquatics	7
Water Becomes a Garden	50

Extend your national visibility -
advertise in

PONDTRADE

Call Lora Lee Gelles 708/873-1921
or llgelles@pondtrademag.com

FINAL THOUGHT...

Let's Build Some Ponds, Dad!

Photo courtesy of Shane Hemphill, Art of the Yard



WHOLESALE IMPORTED JAPANESE KOI

Contact us today:
sales@fitzfishponds.com
 908-420-9908
fitzfishponds.com

FITZ'S FISH PONDS



We ship to our wholesale customers anywhere in the USA, or you can choose to come and hand pick from tens of thousands of Imported Japanese Koi at our farm. We have a very large variety of Tosai and Nisai available for wholesale purchase. We travel to Japan multiple times a year so we can pick from some of the finest breeders in the world to bring back only the best koi.



Breeders we buy from:

- Shintaro
- Suda
- Yagenji
- Isa
- Yamamatsu
- Miyatora
- Kazuto
- Yamazaki
- Dainichi
- Marusei
- Marudo
- Aoki
- Marusho
- & Many More

info@evolutionaquausa.com evolutionaquausa.com 888-417-5837

EVOLUTION
AQUA
 INNOVATION IN WATER



The **Pond Bomb** offers a very unique combination of bacteria and enzymes to clean up organic waste and break down ammonia and nitrite. Resulting in a **CRYSTAL** clear Pond

NEW & IMPROVED

evouV
 ultraviolet light

Available Sizes:

- 15 Watt
- 25 Watt
- 30 Watt
- 55 Watt
- 110 Watt



Redesigned for maximum efficiency, performance and serviceability

tempest

- Innovative Polishing System
- Stand-alone filter for small ponds
- Can be used in conjunction with any filtration system
- Great for retail and quarantine systems

- Simple to Clean
- Up to 1,320 US Gallons
- Uses 7 Liters of K+ Media



NEW!

FILTRAL UVC

THE ALL-IN-ONE SOLUTION

OASE's redesigned Filtral UVC combines mechanical, biological and ultraviolet filtration with a decorative element for a complete filtration solution

Visit our website to learn more!



 **Atlantic** | *Oase*

Visit us online to explore our premier water feature products

www.ATLANTIC-OASE.com