

Path to *prettier* Ponds

From plain ol' fish to ultrasonic waves, there's a solution to the puzzle of maintaining ponds.

By Ken Moun,
Contributing Editor

It seems that superintendents are always thinking about water. If they aren't worrying about how much of it is falling from the sky, they are fussing with their irrigation systems.

But for many superintendents, dealing with the water in golf course ponds is most perplexing of all. It's not surprising; superintendents rarely are experts in limnology.

Many ponds are closed systems where there's either no outflow or the only output is to an irrigation system. When

that's the case, it's not at all uncommon for nutrients to build up in the pond, making the pond's appearance detrimental to the course.

At Rockland Country Club in Sparkill, N.Y., superintendent Matt Ceplo knows that situation well. His three-acre pond is used as a primary source for irrigation. At O'Bannon Creek Golf Course in Mason, Ohio, Gregg Guynan has several ponds that add up to 6 acres of water, which

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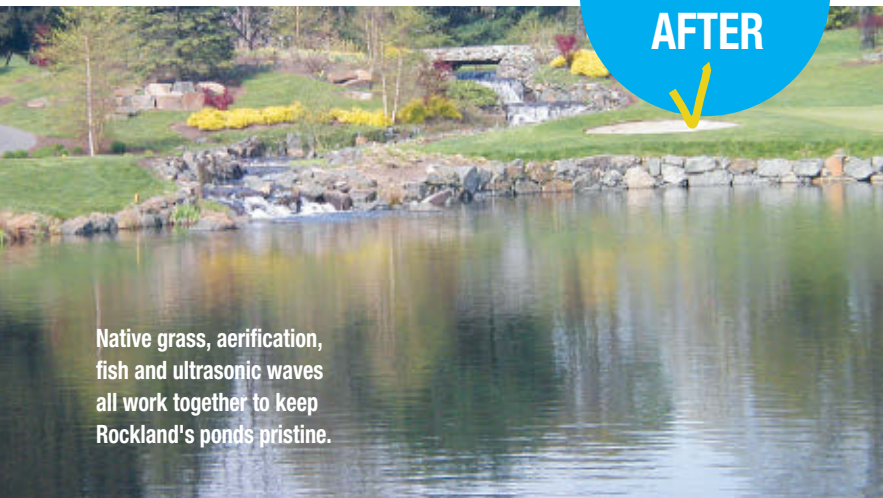
It takes work to keep a pond as pretty as the one on No. 3 at Grand Cypress in Orlando.

PHOTO BY: MIKE KLEMM

Picture-Perfect Ponds



BEFORE
AFTER



Native grass, aerification, fish and ultrasonic waves all work together to keep Rockland's ponds pristine.

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have limited release of water into watershed.

Ceplo's pond is fed from runoff and a spring, but it tends to stagnate in the summer heat. Guynan has a more complicated situation. His ponds see runoff from a residential area, and he pumps effluent water from a nearby residential treatment plant. The effluent is clean, but contains enough nutrients to encourage algae growth.

All the factors superintendents must consider make maintaining ponds much like assembling a puzzle. Different pieces must be implemented before the pond makes a pretty picture.

Multi-pronged approach

The first piece of the puzzle is accepting that ponds constitute a complete ecosystem and that anything you do to them — or even to the watershed that feeds them — is going to affect their water quality. But ponds also

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PHOTOS COURTESY: MATT CEPLO



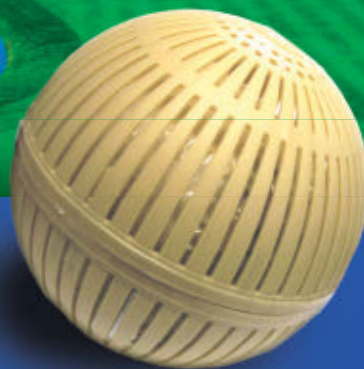
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present golf course managers with a unique opportunity.

Joellen Lampman, manager of the Audubon Cooperative Sanctuary Program, said, "On a golf course you can bring together all the elements of wildlife habitat—food, water, shelter and space."

What makes golf courses special, she said, is "of all the developed property in the human landscape, golf courses are the most likely to have water as an element." Consequently, golf course superintendents can create an environment that is good for both golf and wildlife.

Ceplo says that at Rockland, algae

growth has harassed his three-acre pond for years. In a typical year, he says, floating algae covers 20 to 30 percent of the surface, and submerged weeds are abundant.

Since the pond is only about 6 feet deep and has no outlet, in the summer the water temperatures can rise into the 80s, fostering algae growth. Because Ceplo uses the pond to irrigate the course, maintaining good water quality is important.

Rockland is a certified Audubon Cooperative Sanctuary, so Ceplo has already committed to the goals of the program. He says he's reduced the nutrient load on his pond by implementing a native-grass buffer strip around the perimeter. But, as is often the case with pond management, there's no single solution to improving water quality.

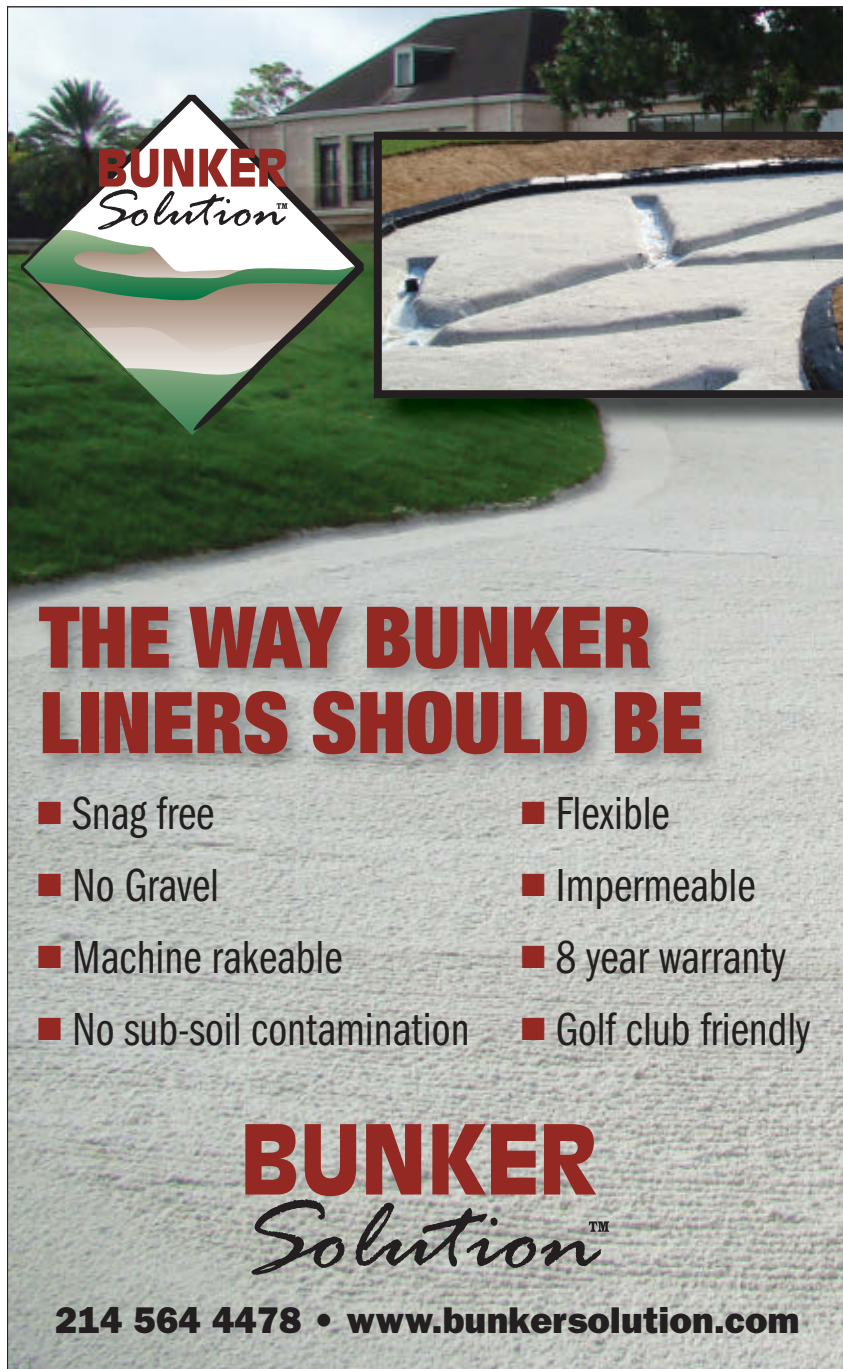
Another piece of the puzzle for Ceplo was improving the aerification of the pond with a man-made waterfall more than 10 years ago. He said it pumps 1,000 gallons per minute, and it did make an improvement.

The next piece was getting permission from the state to stock the pond with white amur (*Ctenopharyngodon idella*, also commonly called "grass carp.") He said the fact that the pond wasn't connected to any public water allowed him to use the amur to control weed growth. But that didn't solve the algae issue.

Ultrasonic waves

A manager at a local water treatment plant recommended to Ceplo SonicSolutions, an algae control method that utilizes ultrasonic waves to kill algae. They control blue/green algae by bursting gas vesicles inside the cell, causing the cells to sink to the bottom where they cannot photosynthesize. On green filamentous algae, the sound waves interrupt the intake of food, starving them.

Kirk Whatley, SonicSolutions national sales manager, says the concept was in the public domain, and first used in Europe. But his company is the only one utilizing the technology in the U.S. They make five models.



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Not many superintendents are experts in limnology, but a proactive effort on ponds goes a long way to better appearance.

According to Whatley, although the devices work 24 hours a day, they need contact time to be effective. For blue/green algae, users can expect to see results in four to seven days. Green filamentous algae take three to four weeks. Whatley says the units operate on less than 10 watts of power and are safe for fish, plants and other aquatic life.

Ceplo said the combination of all those management techniques has resulted in a clear pond. The only time he's had an algal bloom since he installed the sonic units 7 or 8 years ago was when his white amur aged and allowed the submerged weeds to grow up enough to block the sound waves. Putting a few young fish in the water quickly resolved the issue.

He uses Black Onyx colorant from Becker Underwood when the water heats up to improve its appearance. But he also said the colorant blocks light and reduces weed growth.

Joe Lara, Horticulture Specialties product manager at Becker Underwood, says that his company's approach to pond management is to help superintendents learn how to manage aquatic resources in a broad way.

"Our products fit a scheme that helps other products and management techniques succeed," Lara said.

Two commonly used Becker Underwood products are Black Onyx and Admiral colorants. Admiral is a registered pesticide that filters the specific part of the spectrum required for photosynthesis while it improves the appearance of the water. It can be used as part of a plan that limits nutrient

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Algae Control Without Chemicals!

BEFORE

AFTER

JOIN THE CLUBS!

"SonicSolutions is a major component of our pond management strategy. For the past several years our irrigation pond has stayed algae free. Using SonicSolutions has helped us obtain certification status with the Audubon Cooperative Sanctuary Program."

Matt Ceplo, Superintendent, Rockland Country Club, Sparkill, NY

"Within a week or two after start up, the algae in the pond died. Since then, the pond has remained algae free. It is now the cleanest of our six ponds without the use of any chemical algaecides!"

Michael J. Rohwer, Superintendent, Shadowridge Country Club, Vista, CA

"I installed the SonicSolutions units when my ponds already had algae in them. I was completely surprised how quickly they killed the algae and helped to significantly lower my chlorophyll levels!"

Gonzalo Vargas, Coco Beach Golf Resort, Rio Grande, Puerto Rico

"We are extremely happy with our SonicSolutions devices. Our algae problem was quite extreme and the results were both immediate and long lasting."

Bob Gibson, Snow Creek Golf Course, Mammoth Lakes, CA

"SonicSolutions was not only the most environmentally friendly way to rid our pond of algae, it was also the most cost-effective too."

Phillip J. White, Crofton Country Club, Crofton, MD

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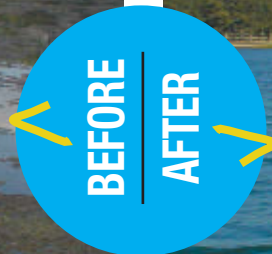
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Picture-Perfect Ponds



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inputs or utilizes plantings to absorb nutrients. Black Onyx is not a registered pesticide, so the company's claims for it are limited to its appearance benefits.

Improve water quality

Lampman, manager of the Audubon Cooperative Sanctuary Program, said one of the simplest ways to reduce nutrients in golf course ponds is to allow native vegetation to use it up. "We recommend whenever possible, creating wildlife habitat around a pond," she said. "You'd be surprised at how much of a difference that can make."

She also noted that aquatic vegetation will accomplish the same thing. "I know that cattails can be a touchy subject with golfers and superintendents, but they will improve water quality just by taking up nutrients. The other benefit is that aquatic vegetation discourages Canada geese."

At O'Bannon Creek, Guynan uses three ponds for irrigation, and his members like to fish for largemouth bass and bluegill. So, finding an environmentally sound solution to algae growth was important.

Since he augments the runoff water with clean effluent from a nearby treatment plant, there are times during the summer when the effluent is pumped for weeks at a time. "The water is very clean, but has nutrients, so we get a severe algae problem when there's no rainfall and temperatures are high," he said.

Like Ceplo, Guynan has installed a native grass buffer strip



to reduce nutrient inflow from runoff, but with storm drains coming in from the neighborhood, and pumping the effluent, other measures were required.

He has been at the course almost since it opened in the late '70s, so he's very familiar with the ponds' management history. White amur were stocked to help control submerged weeds about 10 to 15 years ago, about the time the course started pumping effluent into the ponds. Then seven to eight years ago a subsurface bubbler system was put in to improve aeration. Guynan said each of those were effective to some extent.

The last tool he utilized was the Aquasphere by Bioverse. They utilize naturally occurring bacteria and enzymes with a patented release process that lasts a month. Guynan said his approach has solved his algae problems.

However superintendents solve their pond problems, Becker Underwood's Lara reminds them to treat their ponds as an important feature on the golf course.

"You can use a variety of approaches to manage that living resource, or do it as an afterthought and spend a lot of time and effort fighting it." ■

Ken Moum is a contributing editor for Golfdom.

"You can bring together all elements of wildlife habitat — food, water, shelter and space," Lampman says.



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