

Farm and Ranch Management

Aerator brings new life to pond

By DAN CRUMMETT

LOWELL Dillon has one of those “crown jewel” bass ponds you’d hardly expect to find in the rolling wheat country of northwestern Oklahoma near Watonga. The 2-acre impoundment sits behind a dam on a wooded draw away from the beaten path where Dillon and his wife, Tonya, have their “weekend house” they use to get away from the Oklahoma City area every chance they get.

The beauty of the place went awry last July, however, when Dillon awoke one morning to find several hundred pounds of dead largemouth bass washed up on the dam — dead from asphyxiation, the result of several days of cloudy conditions with little wind and high temperatures.

The fish kill was typical, says George Edwards, a longtime fisherman and wildlife enthusiast who also runs Edwards Environmental Corp., an Oklahoma City business specializing in biological wastewater treatment for municipalities and agriculture.

“Lowell’s pond was typical of fish kills all over the country in the summertime,” Edwards says. “We’d had several very warm days with overcast skies and no wind.”

“All of the pond’s phytoplankton and zooplankton, which produce oxygen through photosynthesis, were disabled due to the cloud cover; the still conditions weren’t conducive to aerating the surface; and the temperature kept biological activity very high.

“All of this results in a rapid depletion of oxygen in the pond. And once things start dying and decomposing, that releases ammonia, which further boosts oxygen demand and the whole system crashes,” he says. “The bigger organisms like the bass and bluegill were the first to go.”

Working with Edwards, Dillon installed a pair of submerged aerators hooked to a half-horsepower electric air pump. The aerators feature an enclosed venturi, which entrains the compressed air as bubbles in a cyl-

Key Points

- Quiet, cloudy summer days and nights are murder on fish.
- Proper aeration can prevent fish kills with water, air circulation.
- Balancing fish populations is important to pond health.

inder. As the bubbles rise, they move water from lower depths of the pond to the surface. During a 24-hour period, the two aerators introduce fresh oxygen to the pond at lower levels and pump thousands of gallons of water from the depths to the surface to be replenished with oxygen.

Gone with the green

“When we started this process, the pond was kelly green,” Dillon recalls. “The algae had taken over, and the pond was, for all fishing purposes, dead.”

Within two weeks, the green was gone, and the pond was clear enough to see several feet below the surface (a feat in Western Oklahoma’s red soil region).

“I just run the aerators now the whole time we’re here,” Dillon says, noting he doesn’t want a repeat of last summer’s disaster.

To reclaim the pond, Edwards and Dillon reintroduced 1.5 gallons of fathead minnows to serve as forage in restoring the water to a bass haven.

“The gallon and a half of minnows we put in last summer will produce several hundred thousand offspring in a number of spawns, and they feed on the plankton in the refreshed pond,” Edwards says. “Now, we’re introducing about 50 8- to 9-inch bluegill and red ear perch to feed on the fatheads, and to start reproducing this spring and summer.

“By September the pond will be in shape to stock it with two to three dozen largemouth bass,” he notes. “Hopefully then, the pond will be in balance biologically; the fathead minnows virtually will be gone; and the bass and perch will be in about the right numbers to sustain both populations.”

With the bass population restored, Dillon says he’ll make sure the aerators run all summer.

AIR PUMP: This quiet shoreline installation provides a steady flow of air to the aerators in the pond. The bubbles, introduced at about 6 feet below the surface, add oxygen and “pump” water — like an aquarium under-gravel filter setup to keep deeper waters circulating to the surface.



BUBBLES ARE THE KEY: Lowell Dillon says the aerators on his pond near Watonga, Okla., are the lifeblood of keeping the body of water safe and healthy for his fish populations. The aerators run most of the summer to keep oxygen in the water.

Prescribing underwater wind

GEORGE Edwards, Oklahoma City, works with an Oklahoma aerator manufacturer to prescribe just the right size and design aeration for a given pond problem. The aerators can be used throughout the winter in colder climates to prevent freeze kills of fish. Edwards, an active fisherman himself, also works with biological solutions for agricultural and municipal wastewater treatment and organic soil micronutrient management. You can learn more at www.edwardsenvironmentalcorp.com, or by emailing him at byogeorge2@att.net.

DR. BUBBLE: George Edwards shows three of several conformation aerators he uses to reclaim or maintain pond fish health. The bubblers use the PVC stack to entrain oxygen-carrying bubbles in an upward flow of water to circulate pond layers.

