

# Lake's ups and downs help fish

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EDGERTON--Don Bush tries to manage the fish population in Lake Koshkonong, but nature always has the biggest say.

Take the winter of 1988-89, said Bush, Wisconsin Department of Natural Resources fish biologist for the lower Rock River basin. The white bass died in droves that year, and the population still hasn't completely rebounded.

"What happened is the lake froze over with almost totally clear ice," Bush said. "The sun started an algae bloom beneath the ice. Algae produces oxygen, and with the ice cap, oxygen couldn't diffuse into the atmosphere."

The amount of oxygen in the water was 30 parts per million, about three times the normal amount in winter. Oxygen bubbles formed in the gill capillaries of the white bass, blocking their ability to exchange oxygen.

"The fish essentially suffocated," Bush said.

The overabundant oxygen reduced the number of walleyes and ended a series of great crappie fishing years, which already were declining. But the white bass died by the thousands.

"The fish that survive tend to be the tougher fish--carp and catfish," Bush said.

That spring and summer Lake Koshkonong featured enormous catches of channel catfish and big batches of carp.

The flood of 1993, produced a different sort of bonanza.

"That is probably the best thing that ever happened in my career," Bush said. "We had a walleye hatch of epic proportions. Fifty times more fish hatched than we ever could have stocked. It restored the walleye fishery in Lake Koshkonong."

The floods expanded the spawning grounds for walleyes, which prefer to spawn in flooded grassland. Bush fielded complaints for a while from fishers who brought too many undersized fish to net, as the giant year class matured.

But for the past few years, plenty of legal walleyes have been available.

Walleyes are perhaps Wisconsin's most popular fish, though, and Bush has begun to suspect that the big catches have depleted the number of fish in the big lake.

Bush can't count on another flood to replenish the walleyes. That is where management comes in.

Lake Koshkonong has a sort of three-pronged management strategy: Carp get removed by commercial fishing operations; stunted bluegills and other panfish get removed from nearby lakes and stocked in Koshkonong; and Bush, with money from groups interested in the lake, runs the Bark River Hatchery.

"We really need to continue the harvesting," Bush said. "Stocking game fish without removing carp won't be successful. You're stocking fish on top of an existing population."

Removing stunted bluegills from, say, Gibbs Lake, and putting them in the big lake benefits both bodies of water.

The fish that remain in the lake of origin have enough space and feed to grow large, Bush said. And the transplanted fish do well in Koshkonong.

"Lake Koshkonong provides an almost instant fishery," Bush said. "They grow so fast here."

The little bluegills grow 8 or 9 inches in two years and eat carp eggs and fry.

The third part of the strategy, the Bark River Hatchery, is a unique operation that supplies Koshkonong and the lower Rock with game fish.

"Walleye are our primary species," Bush said. "We have an annual goal of putting in about 4 million fry."

Before 1993, Bush and the Lake Koshkonong interests would have to request the millions of baby walleyes from other DNR hatcheries at Spooner or Woodruff. In 1993, Bush opened his own hatchery where the Bark River enters the Rock at Fort Atkinson.

The first year Bush tried to hatch the walleyes in river water, but he had trouble with sediments. The next year, the Rock River-Koshkonong Association helped pay for a 300-foot well that supplies water at a constant 52 degrees.

"We can predict our hatching dates to within a day," Bush said.

The eggs are from Koshkonong and Rock River walleyes. DNR employees catch walleyes that are ready to spawn in the spring in fyke nets. The eggs from the females and milt from the males are milked out of the fish and combined in cold water.

"Over the years, we've had a 75 percent hatch," Bush said. "In nature, walleyes and northerns only get 1 percent of their eggs to hatch."

Hatching jars are filled with fertilized eggs. After nine days, the fry hatch and as they swim up into the jars, they get caught in the current and are carried into the river. At traditional hatcheries, the fry are reared in ponds.

Walleye fry must start feeding when 5 days old, which is no problem for the Bark River fish.

"In this system, where we've got such an abundance of natural food, we can pretty much count on survival," Bush said.

He isn't just guessing that the fish survive, either.

"We've been marking these fish," Bush said.

The fish get held in a separate tank and get a six-hour bath in Oxytetracycline, an antibiotic. OTC, as the antibiotic is known, puts a stain on the otolith, a bone in the middle of the young walleye's head.

The DNR catches 100 walleyes in the fall and dissects them to examine the otolith under a microscope. The fish managers can tell which walleyes are hatchery fish and which are wild. They also get an idea of the percentage of hatchery fish in the lake.

"After the first two years, the percentage of fish from the hatchery is 15 to 20 percent," he said.

The hatchery remains an experiment, and too many variables affect the big lake to ensure that any single management strategy will succeed. An irony of removing carp from Koshkonong is that the remaining fish are young and healthy, for example.

Attempts to re-establish large numbers of good-sized panfish have been disappointing, Bush acknowledged. Not enough spawning perch can be netted to provide an egg supply for the hatchery.

The walleye fishing has been great, and fishing pressure on the lake has been great, too.

"That's what I'm here for," Bush said. "To provide a product--a recreational time and occasionally, a meal of fish."

Nature, with its floods, droughts, plagues of clear ice and algae blooms, always will have the biggest say in whether he delivers that product or not.

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