

Research Takes Closer Look at Bass Spawning Habits, Population

In 2006, Michigan's bass anglers finally got what they'd sought for years, an opportunity to fish for their favorite quarry across the state before the official opening day (the Saturday before Memorial Day).

The Department of Natural Resources had experimented with preseason bass fishing for nearly two decades, allowing catch-and-immediate-release fishing on six southern Michigan lakes in April and May since 1988. And although limited survey data tended to show there were few problems caused by the early season fishery, bass regulations had changed enough during the interim (the basic minimum size limit was increased from 12 to 14 inches, for instance) that fisheries managers weren't convinced they were comparing apples to apples.

In 2003, the DNR had assembled the Smallmouth and Largemouth Bass Regulations Committee to investigate the bass anglers' desire for an early catch-and-release season and how it might affect bass populations.

After studying the issue, DNR staffers wanted to allow preseason catch-and-release bass fishing, but push the official opening day back into June to help ease stress on pre-spawn and spawning bass. But bass tournament anglers weren't especially pleased about giving up any of their tournament season. They were adamant about maintaining the traditional opening day.

So the parties made another proposal: Catch-and-immediate-release bass fishing would be allowed as soon as the season for other large predators (pike and walleye) opened, but harvest season would remain the same. As a result, anglers were allowed to begin bass fishing in the Lower Peninsula on the last Saturday of April and in the Upper Peninsula on May 15.

The DNR also committed itself to researching the bass spawn, which now is underway on four lakes in southeast Michigan. The



Fisheries Assistant Jason Pauken (left) and Bob Gwizdz, a DNR communications representative, scoop up bass from the front of a DNR "shock boat" during a bass population assessment study conducted this fall on several lakes in Livingston County. (DNR photographs by David Kenyon)

DNR will not publicly identify the lakes to avoid prejudicing the outcome by inspiring unusual fishing pressure.

Gary Towns, DNR fisheries supervisor for the Lake Erie Management Unit, wanted to do basic bass population assessment on these lakes, anyway. He joined with two researchers to add a couple of spawning studies to the project.

Research crews from Mr. Towns' Southfield office, as well as teams from other fisheries management units, the Institute for Fisheries Research, and Michigan State University, electro-fished, marked, and applied passive integrated transponder (PIT) tags to bass on the lakes for several successive nights. By noting the number of recaptured fish compared to the total number collected, biologists can get an idea of the lake's bass population.

But Mr. Towns thinks the other research projects may yield sweet-

er fruit.

Jim Breck, who works at the DNR's Institute for Fisheries Research in Ann Arbor, is working with MSU faculty member Mary Bremigan to study the PIT-tagged bass on the Livingston County lakes. They plan to locate spawning beds, drop a specially designed antenna around the nest, then read the PIT tags remotely. The fish, even if spooked off the beds when the antenna is dropped, should return almost immediately, Mr. Breck said.

They hope to answer several questions about spawning bass: Do bass spawn every year? Is there a difference between large fish and small fish in terms of nesting success and egg/fry survival?

"Now that we can follow individuals, we'll be able to find that out," said Mr. Breck. "The nice thing about the PIT tags is we never have to handle the fish."

In addition, he hopes to have

fisheries teams attend bass tournaments on his research lakes, where they'll be able to read the PIT tags at the weigh-ins. That will supply some additional information on the relationship between spawning and being caught by anglers. And he can always tag more fish at the tournaments, as well, in case he needs additional bass to complete his research.

"The small tags are imbedded beneath the skin so anglers won't be able to see them," Mr. Breck said.

The other research project is being conducted by Ms. Bremigan. Her crew, which began spotting spawning beds on the lakes last spring, is comparing spawning success rates on heavily fished lakes and lightly fished lakes. The idea is to find out if pre-spawn angling pressure has an affect on spawning success.

"That's what we've been focusing on, but we have more planned for the next two summers," said



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A column from the Michigan Department of Natural Resources



Fisheries Assistant Jason Pauken holds a largemouth bass captured during the bass population assessment that was conducted over several successive nights. By noting the number of recaptured fish compared to the total number collected, biologists can estimate the lake's bass population. But the project also involves two other research studies the DNR hopes will answer several questions about the spawning habits of bass.

Ms. Bremigan, who works in the Partnership for Ecosystem Research Management program, which teams MSU and DNR personnel. "In addition to doing that, we're going to add some genetics work. The idea is we can sample eggs from a nest and genetically fingerprint a bass nest. Then we can go back in the fall, sample the young-of-the-year bass that lived to the fall, and genetically fingerprint them, too."

"Then we can see how many of the nests that we find in a lake in May and June actually contribute to the population we have in the fall."

This part of the research intrigues Mr. Towns, who was deeply involved in the pre-spawn bass fishing issue.

"Are a lot of nests being disrupted before they bring off

broods?" he asked. "We don't even know the answers to questions like, How many nests are necessary to maintain a bass population?"

"Bass are a key species for keeping panfish populations in check to prevent stunting, the key predator to spiny-rayed fish. We need bass to be good, healthy predators out there."

The fisheries order allowing pre-spawn bass fishing originally was written for a five-year period and is scheduled to run for two more fishing seasons before it comes up for review. By that time, Mr. Towns hopes to have answers to some basic questions about pre-spawn bass fishing.

"We want to allow as much recreational angling as possible," he said, "without harming fish populations."



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