

DELTA BASS

FISHERIES BIOLOGISTS ARE DEVELOPING A NEW STRAIN OF BASS BROOD STOCK TO RELEASE IN THE MOBILE-TENSAW DELTA.

By David Rainer, Staff Writer



When it comes to harsh environments for a largemouth bass, the Mobile-Tensaw Delta is probably the toughest place in the state for a bass to thrive.

The ebb and flow of the tide and salinity fluctuations force bass to expend energy it would normally use to grow larger. Add in a diet that isn't the most nutritious and it makes for a species that lives on the edge.

For fisheries biologists with the Alabama Department of Conservation and Natural Resources' Wildlife and Freshwater Fisheries Division (WFF), the Delta has resisted change. Attempts to introduce Florida bass DNA into the population have proved fruitless. WFF stocked Florida-strain bass from 1988 to 2000 with more than 236,000 fingerlings released into the Delta, but the brackish water proved to be a hostile environment for the Florida bass. There is no evidence now that any of the DNA from the Florida bass has survived.

"It never made a dent," said Dave Armstrong, fisheries biologist at the WFF's Spanish Fort office, of the Florida strain stocking.

CHANGING TACTICS

With the realization the Florida strain did not adapt to the Delta, WFF changed tactics. About 10 years ago, Monroe County Lake became a site to evaluate how well Delta bass would perform in a more typical largemouth bass habitat. The lake was drained and cleaned out completely and restocked with Delta bass to see if they would really get bigger grown in fresh water. So far, they have.

"Right now, you can go to Monroe County Lake and catch them up to 8 pounds. You don't see that in the Delta," Armstrong said.

Wayne Miller of Saraland, who runs the Fish'n Fever Tournament Trail, knows first-hand the benefits of fresh water to the Delta bass population. After a six-month period of abundant rainfall and high rivers, the Delta was flush with fresh water last fall, winter and early spring.

At the trail's April 10 event, the evidence was overwhelming that salinity is definitely a determining factor in the size of the bass. The winning team came within a thousandth of a pound of weighing in five fish (19.99) with a four-pound average. The lunger hit the scales at 7.24 pounds, an unheard of weight when salinity is high.

"We had seven teams weigh in bags that were greater than 15 pounds," Miller said. "Due to a rise on the Alabama and Tombigbee (rivers), all these fish were caught from Tensaw Lake south. These were all Delta fish.

"When you've got a river system like what we've got attached to a bay that has to deal with hurricanes, there are natural cycles. Therein lies the peaks and valleys. The fishery has somewhat recuperated from the tremendous saltwater influx from (Hurricane) Katrina, which killed a lot of grass and made it tough on the bass."

UNIQUE IDENTITY

Delta bass appear to have a unique identity in the black bass world. During the last eight years, WFF contracted with Auburn to conduct two extensive studies of the Mobile Delta largemouth bass population.

"One notable finding was that Delta bass were genetically distinct from both northern and Florida largemouth bass and this is likely an indication that this population has adapted over time to the challenges it has faced in an estuarine habitat which is marginal for this species," said Nick Nichols, Assistant Chief of Fisheries. "Our biologists determined that the best strategy for increasing the potential for larger growth of largemouth bass in the Delta would be to work with the fish that were native and acclimated to this habitat."

Last year a new multi-year research study was initiated to begin investigating how to best manipulate the existing stock of largemouth bass in the Delta to enhance the inherent traits of the population to produce larger size individuals.

"One of the primary goals was to look at a bigger fingerling being produced that would have better survival and express their genes across the Delta population," Armstrong said. "The idea was that instead of the 1- and 2-inch bass we stocked with the Florida strain, we'd try to stock with a 6-inch (sub-adult) bass. We won't stock as many but we should get a better survival rate with a bigger fingerling."

REARING LARGER FISH

Adult Delta bass were collected from Monroe County Lake and spawned at the Marion Fish Hatchery, and then their offspring were reared in hatchery ponds through the summer and fall to a larger advanced size fish.

Each hatchery raised fingerling was tagged by injecting a tiny magnetized stainless steel wire tag into the snout of each fish. These tags can later be detected by the use of a specialized metal detector without having to harm the fish. There are no external tags, so anglers will not be able to tell if they hook one of the released fish.

One of the downsides of stocking these bigger fingerlings is that it's expensive. "It takes a lot more space and money to grow the larger fingerlings," Armstrong said. "On a large scale, this would be very difficult."

After the tagged fish are stocked in localized sites within the Delta, the bass will be monitored over time through standardized sampling methods to determine how well they survive and recruit into the local bass population.

WFF stocked 3,376 sub-adults in Three-Mile Creek in Mobile County, 671 in Byrnes Lake in Baldwin County and 200 in Monroe County Lake earlier this year. Armstrong said WFF fisheries biologists will sample bass in the spring and





The Alabama Division of Wildlife and Freshwater Fisheries released hatchery-raised fingerlings of Delta bass into select areas of Mobile and Baldwin counties.

fall for several years to keep track of the released fish.

“If it can be confirmed that these sub-adults do recruit into the population at a high rate, then this stocking strategy can be a tool to use in beginning to manipulate the genetic characteristics of the population,” Nichols said. “To get a jump start on the much longer term goal of developing a line of larger growing Delta bass, this project was designed to begin utilizing a process for breeding Delta bass that would select for fish that exhibited faster-growing and longer-lived traits.”

GROWTH RATES TRACKED

The fish put in Monroe County Lake were the cream of the crop, averaging from 8 to 12 inches. Each fish released in Monroe County Lake had PIT (Passive Integrated Transponder) tags injected to allow fisheries biologists to track growth rates for each individual fish. These tags have the advantage of giving each fish a “serial number” to positively identify each individual. Each year of this project, the fastest growing offspring will be stocked back into Monroe with the remainder being stocked at the selected sites in the Delta.

“Annually, adult largemouth bass will be collected from Monroe County Lake to produce another year-class of fish for this project,” Nichols said. “At first, only the largest fish observed will be collected for use, but over time as the PIT tagged fish from previous stockings into Monroe are

recaptured, their growth will be compared to the “wild” fish in Monroe as well as to other recaptured fish. If individual PIT-tagged fish are identified that demonstrate continued superior growth or survival, they will be temporarily returned to the hatchery for use as brood stock. Any large un-tagged fish collected from the lake and used as brood stock will be PIT-tagged before they are returned. In order to expand the potential for obtaining traits that produce larger fish in the Delta, an effort to obtain larger than average bass collected directly from the Delta will be made, likely in conjunction with large organized bass tournaments.”

Eventually, through this process there will be many tagged fish in this 90-acre lake that will have a known “pedigree” characterized by fast growth, capable of reaching older ages and subsequently reaching larger size.

“We’ll be able to look at growth advantages of these selected bass,” Armstrong said. “In reality, part of the project is to develop a new line of brood stock, which takes many years. Unlike a hatchery, at Monroe County Lake the fish will be affected by angler harvest.”

Armstrong said it will take a minimum of three years to determine if stocking the larger fingerlings has been successful in the Delta. However, establishing a new line of Delta bass brood stock at Monroe County Lake is an achievable (but much longer term) goal.

“One of the (potential) shining stars of this program is developing an improved stock,” he said. “Building a new stock of hatchery bass is a big deal. Like developing the Marion strain at Marion Fish Hatchery, it took about 30-40 years to develop that strain. It’s a fast-growing, big-bodied bass with an aggressive nature and is considered an excellent bass for small impoundments.”

ONLY TIME WILL TELL

Bass that spend their entire lives in the harsh Delta environment tend to be abundant and somewhat stunted in growth with a relatively short life span. The WFF-funded studies done by Auburn University indicate Delta bass are negatively affected by salinity and high amounts of nutritionally inferior blue crabs in their diet.

“With that said, there is an unavoidable uncertainty involved with this effort,” Nichols said. “There is no guarantee that the selected traits that result in faster growth in the hatchery, as well as continued superior growth and survival in Monroe County Lake, will be traits that will be successful once these fish are stocked into the Delta and its very different habitat characteristics.”

It will be at least a couple of years before significant data will be available to determine whether the latest stocking has been worth it.

“We’ll probably start checking bass for tags at tournament weigh-ins in 2012,” he said. “We’ll track the return and growth rates compared to the resident bass. Our expectations are that we will hopefully see bass that got a better start than their wild counterparts that first year. Whether they attain better growth compared to the resident bass remains to be seen. We’ll track them through each year class and see if they do attain better growth rates because of their genetic predisposition and/or if because they were held in a protected, controlled environment for eight or nine months.” ☐