



# The Parent Trap

Newly Certified Florida Brooders Earn Spots on the Spawn Squad

MAKING MONSTERS!



*An In-Depth Look  
at How Genetics From Florida  
Produce Largemouth Lunkers  
in Oklahoma*

**EDITOR'S NOTE:** This is the fourth article in a series detailing efforts of the Oklahoma Department of Wildlife Conservation to produce trophy largemouth bass in Oklahoma's waters.

**By Don P. Brown, Information and Education Specialist**

The technicians and biologists who work at the Durant State Fish Hatchery seem to have one thing constantly on their minds: making babies. And not just a few babies, but millions of them.

Their work pays off each year, as the Durant hatchery produces several species of fry and fingerling fish for stocking or for other uses in places throughout Oklahoma. One of those species is the Florida largemouth bass, the fish that has proved its ability to grow into monster-size trophies in southern Oklahoma waters.

"The goal of the Florida bass program is to produce trophy bass for our anglers. The way we accomplish that goal is through the stocking of Florida bass and influencing the genetics of our wild bass populations," said senior biologist Cliff Sager, coordinator of the Wildlife Department's program to stock Florida bass in Oklahoma lakes. It's the genetic influence of the Florida bass that allows a lake to have a greater trophy-bass potential.

## IT STARTS WITH THE PARENTS

To end up with pure Florida bass fingerlings for stocking, the crew at the Durant Hatchery must first ensure that the parent fish of those fingerlings are also genetically pure.

Last fall, a new class of about 300 potential brooder fish were collected, tagged with a transponder for identification, and sampled for genetic testing. When the DNA test results are returned from the University of Oklahoma lab, they must be matched to each corresponding fish. If a fish has tested less than 100 percent for Florida bass genetics, that fish will be removed from the brood stock population.



DON P. BROWN

*Brooder bass are shocked to the top of the hatchery pond, where they are netted and placed in holding tanks before being transferred to spawning ponds.*

DON P. BROWN



*Fisheries technician Clayton Porter uses a long-handled net to place Florida largemouth bass brooders into a holding tank aboard an electro-fishing boat driven by biologist Danny Bowen.*

DON P. BROWN



*Scanning each potential brooder confirms that the Florida bass brood stock at the Durant hatchery is 100 percent genetically pure.*

DON P. BROWN



*Durant hatchery manager Gordon Schomer uses a tag reader to scan each of the brooder bass to match up with DNA testing results.*

# Fish Forage Needs Yield Golden Ponds

By Don P. Brown, Information and Education Specialist

When thinking about the Wildlife Department's Florida bass stocking program, here is some food for thought: To simply maintain each pound of brooder bass at the hatchery for a year requires an estimated seven pounds of forage.

That's a lot of fish food.

"It becomes a year-round process of just trying to maintain forage," Durant Hatchery assistant manager Shane Lewis said. "We need an enormous amount of forage."

Technician Bob Wichers is one of several employees responsible for forage production at the Durant State Fish Hatchery. He said the type of forage provided to the 1,100 Florida bass brooders will vary throughout the year. The menu will include fathead minnows, koi, goldfish, sunfish, crawfish and manufactured food pellets.

"Your brooders are only as good as the shape they're in," Wichers said. And keeping these brooding bass in great shape and great health requires an extensive feeding program.

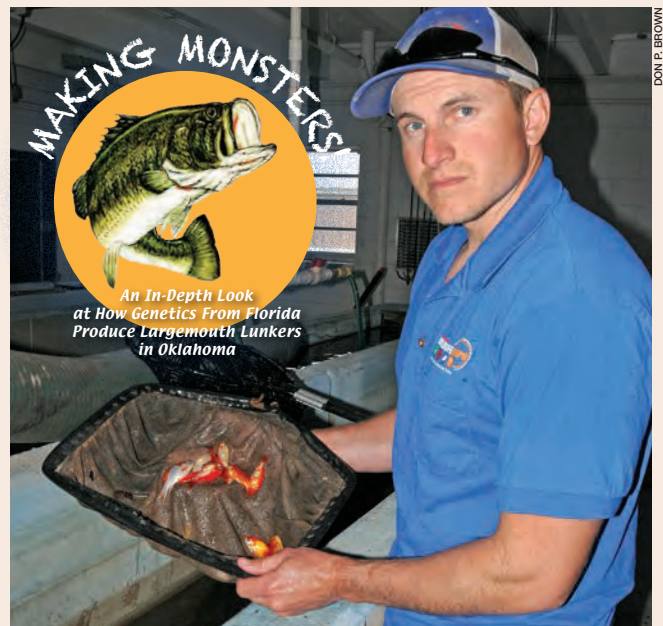
"We at the Durant Hatchery take as much pride in producing forage as we do producing the bass. We try to produce as much forage as we can," he said. "The problem is we don't have the pond space to grow the bass and to grow all the forage we need for them."

That's why high-protein food pellets are used. The Durant hatchery goes through about five tons of food pellets annually, amounting to about 20 percent of the total forage required for the bass. But bass won't naturally eat those pellets. So, beginning early in their lives, the potential brooder bass must be trained to eat the manufactured food.

The remaining 80 percent of forage is mainly produced at the hatchery. This includes about 750,000 koi and about 500,000 goldfish. An additional 400,000 koi were raised from 3 day-old fry obtained from Texas Parks and Wildlife.

When Wichers began overseeing goldfish production several years ago, he said about 99 percent of the goldfish being produced were a dull copper-brown color because of many years of inbreeding.

"My thought was that if you're going to raise goldfish, they might as well be a bright color to make it easier for the bass to see," he



Durant hatchery technician Luke Taylor dips up some of the goldfish he raises as a food source for the Florida largemouth bass program.

said. So, Wichers set about to create brightly colored goldfish that would make better feeding targets for the Florida bass.

"Genetics in forage brooders is as important as it is in our bass brooders," he said. New goldfish brood stock was introduced, and Wichers began selectively keeping the brooders that were bright and colorful. The result: About 75 percent of the goldfish produced at Durant is bright gold or white and gold.

For the past two years, technician Luke Taylor has overseen goldfish production. He said the numbers produced keep rising each year, which only adds to the overall health of the Florida bass brood stock.

Last year's goldfish production was the best in the hatchery's history, and Taylor believes using grass sod sections in the spawning ponds is one factor that has helped bring the unprecedented success.

One might say the employees at the Durant Hatchery are setting the gold standard when it comes to Florida bass production. 🌿



Manufactured food pellets are among the forage items used to maintain the Florida bass brooders at the Durant hatchery. Seen here, hundreds of bass create a feeding frenzy after technician Luke Taylor tossed pellets into the pond.



*Fisheries technician Amie Robison moves Florida largemouth brooders to a tank truck that will take the fish to spawning ponds in another area of the hatchery.*

But why is it so important to start with pure Florida bass parents? It's because the genetic potential for growth into a trophy-size largemouth is so easily watered-down once these fish are released into a lake with native bass populations.

"We know that pure Florida bass have the growth potential to reach trophy size," Sager explained. "We know that if a pure Florida bass reproduces with one of our native northern bass, it produces a hybrid, which also has that trophy potential."

"But multiple generations of back-crossing with our native northern bass waters down the genetic potential of those fish to produce a trophy," he said.

So, to keep the trophy-bass potential present in any lake requires that pure Florida genetics be continually introduced into that ecosystem.

### A PLEASING REPORT CARD

Since he began working in the Florida bass stocking program six years ago, Durant Hatchery assistant manager Shane Lewis has witnessed the program's results improve over time. This year, the program attained a benchmark that it had never reached before.

All the bass samples sent for DNA testing in September tested as pure Florida bass. The purity rate was 100 percent!

"This is a good year! It was a nice surprise when we got those

results back. This means that what we're doing has been working," Lewis said.

He said it was always a goal of the program to attain 100 percent purity among the "parent fish." In 2013, the new brood stock tested at about 97 percent for pure Florida bass.

Because of this year's perfect result, the potential brooders will not have to be sorted through for any fish that failed to make the grade. Instead, a quick and simple scan to confirm the presence of a transponder tag in the fish is all that will be required.

"It's taken a few years and a lot of hard work, but it's paid off," Lewis said.

So with the genetic purity of this latest class of brooder fish certified, the time for baby-making has arrived.

### YOUR PAD OR MINE?

It's mid-April, and Fisheries Division workers use two electro-fishing boats to shock the brooder bass to the surface of the pond. The bass are collected with rubber nets to minimize the possibility of injury, scanned for a transponder tag to confirm they have been certified pure, and then moved to other ponds on the hatchery that have been prepared for spawning activity.

"The process of culturing fish is always one of trial and error," Sager said. As an example, the Durant crew recently hit upon a new technique to improve spawning

success. They have been placing Bermuda grass sod mats on the floor of the spawning ponds. The mats provide an attractive place for the female bass to deposit eggs. Sager said he believes this technique generates greater production of fry.

The new class of brooder bass will now join the other Florida brooders that are maintained at the hatchery — about 1,100 fish in all ranging from 3 to 7 years old. The brooders are kept in the spawning ponds for about a month to allow nature to run its course.

If all goes well, sometime around mid-May, the spawning ponds will be teeming with millions of Florida bass fry. Those are the fry that are destined to become millions of genetic booster shots throughout selected lakes mostly in southern Oklahoma.

And somewhere among those millions of baby bass, there could be one that latches onto a lucky angler's rod and reel and ends up as the newest Oklahoma state record largemouth bass.

**NEXT ISSUE:** They all start out as small fry, but many of them will grow into monsters! The mating game is over, and now the Durant hatchery team must raise up the next generation of Florida largemouth bass. Don't miss the next part of our series, "Making Monsters!" 🌿



*Cliff Sager, senior biologist, South Central Region, Fisheries Division*