

The Mudcat

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Mississippi is #1 in Catfish Farming!



Catfish farmers near Doddsville. MDAH Museum Division Education.

Mississippi is the largest catfish farming state in the U.S. and the leader of catfish production in the world. Beginning in the 1970s, Americans became more health conscious as the prices of meat increased. This helped the new **aquaculture** industry take off. In 1979 there were 5.7 million pounds of U.S. catfish processed annually; today, that number has risen to

334 million pounds.

Fish farming is the commercial raising of fish in ponds or other enclosures. On fish farms, growers control the feeding, harvests, and water quality under strict conditions. Farmers measure to ensure a quality product, such as monitoring the health of the water, providing high protein feed pellets made of corn, wheat, and soybeans for

the fish, and taste testing the fish before harvest.

In the Delta, catfish are raised in “levee” ponds. These are dug into the flat landscape, using the removed soil to form embankments. The flat landscape and the ground water supply of this region are ideal for these ponds. Ponds typically encompass 17 acres of water. One acre can support up to 8,000 fish.

The Journey from Fry to Fryer

Broodfish are kept in separate ponds to ensure quality stock. They produce eggs in late spring and early summer at a rate of 2,000 to 4,000 per pound of the female’s

body weight. Fertilized eggs are placed in hatchery tanks at a temperature of 78 degrees. The eggs hatch after seven days and live off the food supplied by their yolks. After the yolks are used up, the fish or “fry” are placed in a special pond where they grow into **fingerlings**. The fingerlings are then placed in catfish ponds.

Catfish are harvested at around 18 months old or when they are 1-2 pounds. Once the fish are harvested they are sent to a processing plant. At the plant, the entire procedure takes less than 30 minutes. After processing, the fish is frozen to capture its fresh taste.

Catfish Capital of the World

During the nineteenth century, Mississippi was renowned for its production of cotton, the primary **cash crop** for the state. After the Civil War, the demand for cotton dropped and prices fell. By the 1960s, farmers

began to explore replacing cotton fields with commercial catfish ponds. Even though many people left the Delta looking for better opportunities, some people stayed to try their luck at catfish farming. These farmers raised

catfish to sell at stands or door-to-door. Some managed to sell to processors who then sold to stores and restaurants.

By the 1970s, the market for farm-raised catfish was growing. Country Select, Delta Pride, and

Heartland Catfish built processing plants in the Delta. The industry brought millions of dollars into the Mississippi economy, making catfish a profitable cash crop.

Catfish Characteristics

Catfish are named because of their **barbels**, or whiskers, that help them find food. Even though they may look sharp, barbels cannot sting, although the sharp spines in their pectoral and dorsal fins can cause painful wounds. Some catfish have venom cells in the skin covering the spines.

Catfish have an extraordinary sense of smell and much of their skin is covered with taste buds. These qualities enable them to detect food from long distances, even in dark, muddy water.

Even though they are not visible, catfish have ears. However, they actually hear by receiving sound waves through



A catfish at the Mississippi Museum of Natural Science. MDAH Museum Division Education.

their skin. In aquaculture ponds, channel catfish are sensitive to low frequency vibrations. They rise to the surface of ponds in response to the footsteps of someone walking over to feed them. They can hear the person from 100

yards or more away.

Catfish also have remarkable vision. **Electroreception** helps them move through dark, muddy water by detecting electricity around them.

Did You Know? At the United States Bicentennial in 1976, Mississippi Agriculture Commissioner Jim Buck Ross organized a booth at the National Mall in Washington D.C. The booth served farm-raised catfish. It was a hit!

The Art of Catting

In comparison to catching bass or trout, catfish are easy to catch, which is why some sport fisherman do not consider **catting** a sport. Some people consider catting a lazy form of fishing because of the simplicity in catching a catfish. But if you go catting, don't underestimate catfish. Some argue that the feistiness of catfish proves that it is indeed a sport fish.

North America is home to the "big three" species of catfish: channel, flathead, and blue. There are many techniques for catching catfish. Some use nets, **seines**, **trotlines**, or traps to catch fish. Some people even catch catfish using their bare hands. The most common way is using a cane pole, sinker, and live bait. Pole fishing has been used for centuries very effectively.

But make sure to handle catfish with care: big ones can bite hard enough to crush your finger. Also, they have sharp spines that can cause lesions.

Did You Know? About 60% of U.S. farm-raised catfish are grown within a 65 mile radius of Belzoni, Mississippi.

Strange Cats

There are more than 2,200 species of catfish and they can be found on every continent except Antarctica. Besides the fact that all of them have barbels, these fish can be very different from each other and some catfish are very strange!

First seen in Thailand, Asian glass catfish are transparent. If you look with a magnifying glass, you could see its heart beating. When it dies, it immediately turns milky white.

In South America, there is the talking catfish. When they are out of the water, talking catfish can make high-pitched squeaks.

The electric catfish is native to tropical parts of Africa and the Nile River. They can use electric discharges to incapacitate their prey. Another African native from the Zaire and Niger River Basin is the upside-down catfish. This catfish swims upside down and also changes color. In time, the top color covers the bottom of the fish and the bottom color covers the top.

Walking catfish, native to southeast Asia, "walk" across dry land by using their pectoral fins to stay upright. While walking catfish can be found in the United States, they are considered an **invasive species**.

Investigate More

You can visit sites and museums across the state to learn more about catfish!

The Catfish Blues

There are several renditions of the song “Catfish Blues.” The song was first recorded in 1941 by Mississippi Delta bluesman Robert Petway. However, it remains debated if Petway was the original source of the song. In 1950, bluesman Muddy Waters recorded his song “Rollin Stone” using lyrics from “Catfish Blues.” Waters, a native of the Mississippi Delta and an international star, influenced many musical artists and “Rollin Stone” has been recorded by many of them. A rock band and music magazine each named themselves after Waters’ song “Rollin Stone.”



1950s recording of Elmo James singing Catfish Blues. MDAH Museum Division Collections.

Cooking Catfish

Catfish is lean, high in protein, and contains healthy fatty acids omega-3 and omega-6. Catfish is a versatile food that can be baked, grilled, broiled, sautéed, fried, or poached. In the South, fried catfish is a traditional dish and is usually accompanied by **hushpuppies**. Here is a recipe that you can try at home.

Fried Catfish*

Ingredients:

- 4 U.S. farm-raised catfish fillets
- ¾ cup of yellow cornmeal
- ¼ cup of all-purpose flour
- 2 teaspoons of salt
- 1 teaspoon of cayenne pepper
- ¼ teaspoon of garlic powder
- Vegetable oil for frying

Directions:

1. Combine all dry ingredients.
2. Coat catfish with mixture, shaking off excess. Fill a large, heavy skillet half full with vegetable oil. Heat oil to 350 °F.
3. Add catfish in a single layer and fry until golden brown, 5 to 6 minutes.
4. Remove fish from oil and drain on paper towels.

***Oven Fried Method:** Preheat oven to 425 °F. Spray pan with cooking spray. Bake 15 minutes.

The World Catfish Festival



Every April the World Catfish Festival is held in Belzoni. At the first festival, held in 1976, around 3,000 people attended. The festival has since become a major tourist attraction that draws more than 10,000 people from around the world. The festival includes art and crafts vendors, live entertainment, a 5K walk/run, activities for children, and an annual Miss Catfish pageant. While there, be sure to visit the Catfish Museum at 110 Magnolia Street!



Top: Welcome sign on Hwy 49W North. Above Left: Catfish Museum. Above Right: Miss Catfish 2013 and Miss Catfish 2014. MDAH Museum Division Education.

Catfish on the Web!

Learn more about farm-raised catfish from Mississippi State University at <http://msucares.com/aquaculture/catfish/index.html> and the Catfish Institute at <http://uscatfish.com/>

Show What You Know!

Vocabulary

Aquaculture: farming of fish and other aquatic organisms.

Barbels: whisker-like sensory organs around the mouth of fish.

Broodfish: mature fish used for breeding purposes.

Cash crop: a crop grown to sell.

Catting: fishing for catfish.

Electroreception: ability to detect natural electrical stimuli.

Fingerlings: young fish.

Hushpuppies: small ball of cornmeal dough deep fried.

Invasive Species: a plant or animal not native to a specific area.

Seine: vertical fishing net.

Trotline: strong fishing line strung underwater with hooks along its length.

Crazy Catfish Around the World!

Where do catfish live? Draw a line from each catfish to the continent where it came from.



Mississippi Farm-Raised Catfish

Electric Catfish

Glass Catfish

Walking Catfish

Talking Catfish

Upside-Down Catfish

*Crazy Catfish Answer Key:
North America: Farm-Raised, Africa: Electric, Asia: Glass, Walking, South America: Talking*

Word Scramble

- Do you know enough catfish vocabulary to unscramble the words at right?
1. CQLERATUURAU
 2. SHAC OPCR
 3. TIACTGN
 4. LBRBSAE
 5. ENTOLERIECO-PERCT
 6. SIGNRIFEGLN
 7. DFBORHOIS

*Word Scramble Answer Key:
1. Aquaculture 2. Cash Crop 3. Catting 4. Barbels 5. Electroreception 6. Fingerlings 7. Broodfish*

Create a Catfish Competition

How would you like to see a catfish of your own creation **on the cover** of the *Mudcat*? If you're an artist — or even if you're not — **craft a cool catfish graphic**, send it in to the *Mudcat*, and **YOUR catfish could win a coveted spot on the cover** of the next issue! Send all entries via mail or email to:

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Congratulations
to Claire G. of
Jackson for her
winning Mudcat!