

# WILDLIFE DIVERSITY NOTEBOOK: Bowfin



Ryan Bosserman

Matt Stender with the new state weight record bowfin from the Ohio River. The fish weighed 9 pounds, 4 ounces.

## By Jeff Hansbarger

**Common Name:** Bowfin, Grindle, Dogfish, Mudfish, other local names

**Scientific name:** *Amia calva*

**West Virginia Status:** Bowfin are found in most large rivers and their immediate tributaries in West Virginia, including the Ohio, Kanawha and Little Kanawha rivers.

**Description:** The bowfin is a stout predatory fish occasionally caught by freshwater anglers while fishing for largemouth bass or sunfish. Coloration ranges from olive to brown, often with a camouflaged pattern of dark and light tones fading into lighter tones on the belly. The entire head is covered with a bony plate-like armor instead of scales. The large mouth is filled with strong, sharp teeth. A unique gular plate is

located in the throat area. Bowfin are equipped with a long dorsal fin and a powerful rounded tail, usually displaying a false “eyespot” or ocellus located at the base of the tail. Males have an eyespot rimmed with yellow and orange, while the female’s spot is basic black or missing entirely.

The bowfin is the only remaining living specimen of an ancient group of fishes that lived over 180 million years ago. Its relatives are presently found only as fossils in the rocks of Europe and the United States. An artifact of the bowfin’s ancient lineage is its ability to gulp air and use their swim-bladder as a primitive lung. Once the air is gulped, it is absorbed through the swim-bladder walls into the blood-

stream. Gulping air allows bowfin to use stagnant or poor quality water with very little oxygen which other fish cannot use.

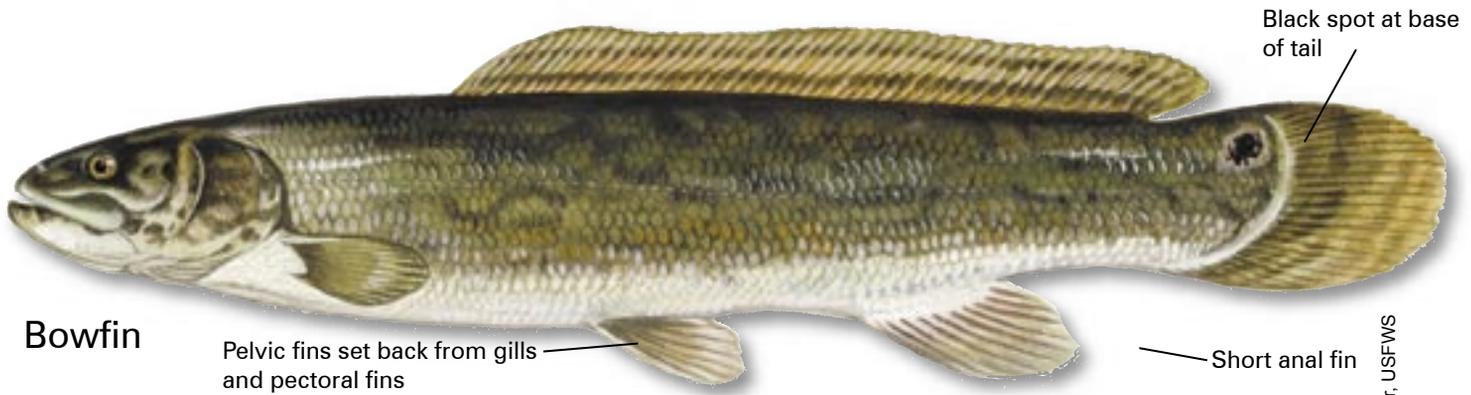
Anglers enjoy the bowfin’s strength and endurance when hooked, but the bowfin is not highly sought after as a food fish. Bowfin average 2 pounds to 5 pounds in weight and 18 inches to 24 inches in length in West Virginia. Recently, Matt Stender caught a new state weight record bowfin from the backwaters of the Ohio River at Green Bottom Wildlife Management Area. Stender’s fish weighed a hefty 9 pounds, 4 ounces. In the southern United States, bowfin can weigh in excess of 20 pounds.

Anglers many times are unaware of what they have caught after landing a bowfin. These fish are frequently misidentified as the invasive snakehead that has recently shown up in Maryland and Virginia. The main distinguishing feature between bowfin and snakeheads is the anal fin. Bowfin have a short anal fin, while snakeheads have a long anal fin running down a large portion of the underside of their body. Also the head of a bowfin is large, while the head of a snakehead constricts down near the mouth and is smaller than the surrounding neck and gill area.

**Habitat:** The bowfin is primarily a lowland species, widespread in rivers, oxbow lakes, bayous, swamps and flooded backwater areas of large rivers. Bowfin prefer sluggish, clear waters with aquatic vegetation, but are extremely opportunistic and can be found in a variety of habitats and water bodies.

**Range:** Bowfin are found in most parts of the United States, from the Mississippi River drainage eastward to the St. Lawrence River and from the Great Lakes south to Texas and Florida.

# Do You Know The Difference?



**Bowfin**

Pelvic fins set back from gills and pectoral fins

Short anal fin

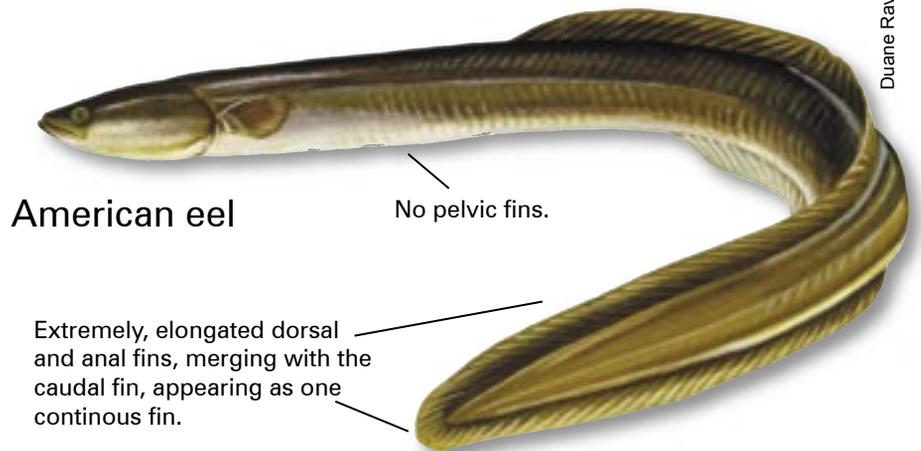
Black spot at base of tail

Duane Raver, USFWS

**Diet:** Bowfin are opportunistic generalists. Fish compose upward of 80 percent of this voracious feeder's diet, with crayfish making up the remainder along with a variety of other prey items they encounter.

**Life History:** Spawning occurs from April to June, depending on the water temperature of the locality. It takes place in quiet bays or inlets containing vegetation. Males establish a nest which they defend by biting off vegetation in a small area and brushing it away with their tail and fins. Once completed, a small bed of soft rootlets, sands, or gravel remains for the eggs. Spawning usually takes place at night with up to 2,000 to 5,000 eggs fertilized and deposited into the nest. After one or more females have spawned with the male in the nest, the male guards the nest for 8 to 10 days until the young bowfin hatch.

As soon as the bowfin hatch, they attach their small black bodies to rootlets and aquatic vegetation by an adhesive organ on their snout or lie on their side on the bottom of the nest until they are approximately one-half inch long. Male bowfin actively guard the nest through development. After the young develop into free-swimming fry, they continue to be herded and guarded by the male in the vicinity of the nest up until they reach around four

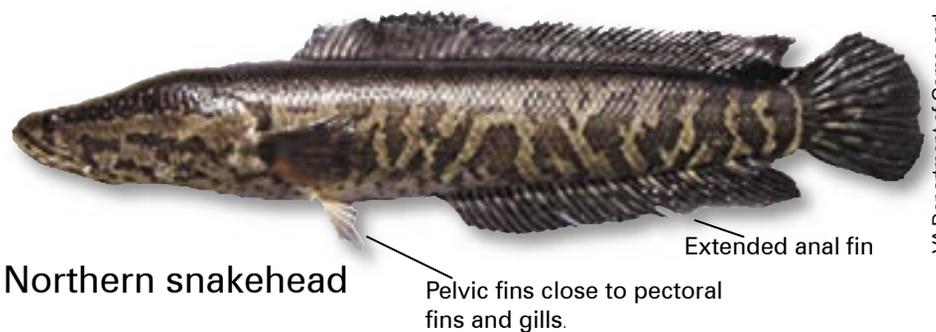


**American eel**

No pelvic fins.

Extremely, elongated dorsal and anal fins, merging with the caudal fin, appearing as one continuous fin.

VA Department of Game and Inland Fisheries



**Northern snakehead**

Pelvic fins close to pectoral fins and gills.

Extended anal fin

inches in length. The bowfin is the only primitive bony fish to show such intensive parental care. When approximately four inches long, the juvenile bowfin move out and establish individual territories.

Adults are most active at night,

moving into shallower water to feed. During the day they remain in deeper water, but will occasionally seek food.

**Conservation and Potential Threats:** None  
*Jeff Hansbarger is a fisheries biologist stationed in Point Pleasant.*

## Did you know?

- Bowfin are capable of estivation (period of dormancy during extreme heat and drought), similar to lungfish.
- Bowfin can be extremely long lived -- some have been aged in excess of 30 years.
- When an unwelcome visitor approaches the nest, a guarding male will make a noisy escape, probably to decoy the intruder away from the nest.