

Young-of-the-year pallid sturgeon collected in the Mississippi River

The pallid sturgeon, *Scaphirhynchus albus*, inhabits open channels in large, turbid rivers. It occurs in the Missouri River and the Mississippi River below the mouth of the Missouri River. In these rivers, pallid sturgeon live on the bottom in strong current, but may also be found along sand bars and in deep scour holes along wing dams. The pallid sturgeon was designated a Federally endangered species in October, 1990 because its survival was jeopardized by over-fishing, habitat destruction, and hybridization. Young-of-the-year (Y-O-Y) pallid sturgeon were not documented from the wild.

On 24 July 1998, we collected a Y-O-Y pallid sturgeon from the Mississippi River at river mile 49.5L, approximately 2.5 miles south of Cape Girardeau, Cape Girardeau County, Missouri. The specimen, measuring 79 mm, fork length, was captured in an experimental bottom trawl. The experimental trawl is a modification of the standard Long Term Resource Monitoring Program (LTRMP) slingshot balloon trawl. The trawl is 4.8 m wide x 4.5 m long with 18 mm mesh (16 feet x 15 feet with 3/4-inch mesh). We attached a 4-mm (3/16-inch) delta style mesh to the outside of this net to more effectively capture small fish, particularly *Macrhybopsis* chubs. A standard trawl sample is 350 meters (1,148 feet) long.

The pallid sturgeon was collected over primarily a sand substrate; some gravel was present. Bottom dunes to 31 cm high were recorded at the sample site. The water averaged 2.7 m deep and the bottom water velocity averaged 0.55 m/s. Surface water velocity averaged 1.07 m/s. The water temperature was 29.6°C.

The collection site is classified as main channel border-unstructured strata (no revetment or wing dams) and was located on an inside bend. Typically, inside bends in the Mississippi River near Cape Girardeau have large sand flats with a point bar at the downstream end. Sand dunes occurring in these areas range from 15 cm to 1.2 m high. We determined substrate types by dragging a metal pole on the bottom. Substrate firmness could be estimated as the pole ascended and descended a dune. In general, the substrate was soft to firm sand when ascending a dune and firm sand or cobble/gravel in the trough below the dune. We do not know if the pallid sturgeon was captured on or below a dune or in some interstitial space between dunes.

We captured 46 fish along with the pallid sturgeon at the collection site. Species composition was 52% channel catfish (*Ictalurus punctatus*), 32% blue catfish (*Ictalurus furcatus*), 9% unidentified sturgeon, 2% gizzard shad (*Dorosoma cepedianum*), and 2% sicklefin chub (*Macrhybopsis meeki*). Three of the four unidentified sturgeon were 100 - 150 mm long (these were probably Y-O-Y); the other was 258 mm long (probably age-1). All of the other species captured were Y-O-Y.

We sampled 105 sites with the experimental trawl in 1998. Nineteen samples produced 32 unidentified sturgeon that were less than 258 mm long; 28 were less than 150 mm long. Twelve of the 19 samples (63%) occurred at inside bends and 20 of the 32 unidentified sturgeon were captured in inside bends (62%). This suggests that Y-O-Y sturgeon may be using inside bends as rearing habitat from June through October. More research is needed to determine sturgeon distribution throughout the seasons and over its entire historical range.

The Y-O-Y pallid sturgeon we collected was killed during the trawl sample, probably the result of trauma. The specimen has been preserved and is in ichthyological collections at the University of Alabama. Bobby Reed (Louisiana Department of Wildlife and Fisheries), an active member of the Louisiana Pallid Sturgeon Recovery Team, made the initial verification of the vouchered specimen. The specimen was also verified by Dr. Richard Mayden (University of Alabama).

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