

PALLID STURGEON

Endangered Species

Quick Stats:

Adult Length - 30 to 72 inches

Adult Weight - In the Missouri River below Gavins Point Dam, 2 to 5 pounds. In the northern portion of its habitat, like Montana and North Dakota, they can weigh up to 85 pounds.



A scientist holds a Pallid Sturgeon with a jar seal stuck around its body.

Identification:

Pallid Sturgeon are very light, gray on top and on the sides of the body, with a smooth white belly. The body is mostly cartilaginous and lacks scales, and instead has rows of plates, called scutes, on the back, mid-line, and along each side of the belly. The Pallid Sturgeon has a heterocercal tail, similar to sharks, where the upper lobe of the tail is longer than the lower lobe. The base of the tail, or caudal peduncle, is completely armored with scutes. It has a broad flat snout, or rostrum, with a toothless protrusible mouth that can extend outward from the snout. The mouth is set far back below and behind the tip of the rostrum. In front of the mouth, toward the head, there are four filament-like structures, called barbels, that are in two pairs. The inner barbels are positioned further forward and are half the length of the outer barbels. The barbels, elongated head, and smooth belly are some of the keys to visually identifying a Pallid Sturgeon from their relative, the Shovelnose Sturgeon, which is very similar in appearance. The Shovelnose Sturgeon also has 4 barbels, but the Shovelnose Sturgeon's are all the same length and in a straight line, their heads are shorter, and their bellies are not smooth due to the presence of scales.

Habitat: Pallid Sturgeon can be found in the Missouri River and middle and lower Mississippi River main stem and lower portions of large tributaries. They prefer the swift current of the large, turbid/muddy, sand-bedded rivers.

Reproduction: Females spawn once every 2 to 5 years and males may spawn once every 1 to 3 years. Spawning occurs from March through July in water temperatures between 60 and 73 degrees. A large female can produce as many as 150,000 eggs, which are deposited and fertilized by males at the bottom in current near coarse gravel or rocky substrate. Eggs hatch in about 3 to 5 days after spawning and hatched, free embryos drift with the current for 11 to 17 days, dispersing the young sturgeon downstream from their spawning grounds.

Diet: Pallid Sturgeon are bottom-feeders. Juvenile Pallid Sturgeon primarily eat insect larvae. Adults eat mostly small fish, such as chubs, minnows, and even small catfish.

CONT. PALLID STURGEON



Adaptations: Pallid Sturgeon are highly adapted to swim and feed in swift, turbid water. Their bodies are slender with a broad, flat rostrum or snout to swim along the bottom of the river with little effort. While their eyes are small and not useful for detecting prey in the deep, muddy water, their broad rostrum is covered in specialized receptors that detect the minute electrical signals produced by its prey. The four fleshy barbels on the underside of the rostrum and their lips have chemical receptors, or taste buds, that can detect food before their protractile mouths reach out and capture it using powerful suction.

Reasons for Endangered Status: Pallid Sturgeon were commercially harvested from the mid-1800s until they were listed as endangered in 1990. They were harvested primarily for their valuable eggs to make caviar. However, by far the largest threat to this species is thought to be habitat alteration associated with dams and channelization. The dams have impeded spawning migrations, potentially disrupted river flow spawning cues, and fragmented the Missouri River so larvae now drift into reservoir habitats where they cannot survive. Channelization and bank stabilization have reduced the variety of the Lower Missouri River and Mississippi River so there is not as much slow, shallow water. Because of this, there has been a huge reduction in the amount of habitat available for spawning and rearing, as well as reduced populations of the smaller native fishes the Pallid Sturgeon feeds upon. Pallid Sturgeon also have another unexpected disadvantage: their longevity. Although they can live 40 years or more, and females may not reach maturity until they are 7 to 15 years old, while males may take 5 to 7 years to become reproductively ready. This longevity, coupled with the time to reach maturity, makes them less adaptable to change and slow to respond to management actions designed to restore populations.

Sources:

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For More Information: This is issue number 2 in volume I of issues all related to the Missouri River. To access the rest of the collection, visit the Missouri River Relief Education page at riverrelief.org. This issue was published in June 2018.