relatively small size and age at maturity in comparison to the other two larger sturgeon species found historically throughout its range (i.e. lake sturgeon and pallid sturgeon). The shovelnose matures at a younger age than the other two species and so is subject to fewer years of fishing pressure before reaching maturity and being able to reproduce itself. And unlike the paddlefish and white sturgeon, there is presently little interest by private aquaculturists in working with shovelnose as a commercial source of flesh or caviar. However, in some localities (Upper Mississippi, Ohio and White rivers) of some states (Illinois/Iowa, Ohio and Arkansas, respectively) where the large river sturgeon habitat is still fairly intact, the species continues to support modest commercial fisheries. There is also some interest in the potential trade of shovelnose sturgeon as an aquarium fish. As a gamefish the species is taken occasionally on hook and line in deep waters around snags, using worms or other live baits. The shovelnose is also important as the host to glochidia (larvae) of the mollusks *Quadrula pustulosa* (Pimpleback), *Obovaria olivaria* (Hickorynut) and *Lampsilis teres* (Yellow sandshell). It is the only known host for the Hickorynut mussel which inhabits water 4-6 ft deep over sand or gravel in good current.

What is being done to protect the shovelnose sturgeon? The shovelnose sturgeon is managed by the state conservation agencies where it occurs. Since the species remains relatively abundant there is no need for federal regulations, however, there is some federal concern regarding harvest of the species since it is similar in appearance to and, at smaller sizes, can be easily mistaken for the endangered pallid sturgeon. Each state evaluates the shovelnose sturgeon populations in its waters and sets fishing (recreational and commercial) regulations annually. States also regularly communicate with one another and with federal authorities, through various cooperative interstate organizations (especially on the Upper and Lower Mississippi, Missouri, Ohio and Tennessee rivers), to work toward standardized regulations. The federal government through the U.S. Fish & Wildlife Service and the states are also closely monitoring sturgeon harvest and trade as it relates to the caviar industry and international trade under authority of the Convention on the International Trade of Endangered Species (CITES). The collapse of the Soviet Union lead to overharvest of the eastern European sturgeon stocks which formerly supported the international caviar industry. Since that time increasing pressure has been placed on harvest of North American sturgeon species, including the shovelnose sturgeon.

What can you do? Purchase appropriate state fishing licenses before fishing for any species. Carefully inspect any sturgeon caught for identification to species, and immediately and carefully release any individual suspected of being the endangered pallid sturgeon to the waters where taken. If in doubt about the identity of a sturgeon species, error in favor of the fish and return it to the water unharmed. Purchase habitat management and special program stamps for riverine management and protection when offered by local, state and federal natural resource management agencies. Become informed about pollution and river management issues in your area by consulting with state and federal agencies, conservation groups and the media. Inform appropriate decision makers (local, state and national) of your support for issues related to the protection and management of rivers for the maintenance of healthy ecosystems and fish populations. If we all work together we can help to ensure that our ancient sturgeon species can live along side of thriving economies and human populations!

For more information contact:

U.S. Fish and Wildlife Service
La Crosse Fishery Resource Office
555 Lester Avenue
Onalaska, Wisconsin 54650
(608) 783-8434

Revised 16 May 2001

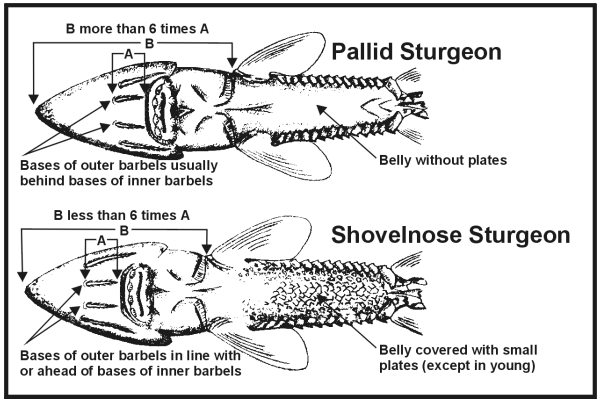
U.S. Fish & Wildlife Service

Shovelnose Sturgeon

Scaphirhynchus platorynchus

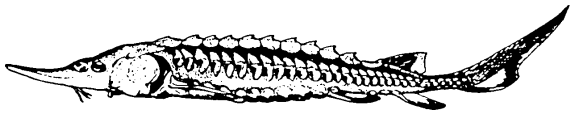
Description: The shovelnose sturgeon, smallest of the ancient sturgeon species in North America, is similar in appearance to the pallid sturgeon. The shovelnose has a flattened and shovel-shaped snout and is distinguished by pale, bony plates instead of scales, a reptile-like body, a sucker-type mouth and large barbels or whisker-like sensors next to its mouth. The shovelnose uses its strongly fringed barbels to sense the river bottom and to identify prey, and then capture it with its protrusible, vacuum cleaner-like mouth. Prey consists of aquatic insects and invertebrates. The base of the tail of the shovelnose is flattened in cross section and completely covered with armor-like plates. The upper lobe of the tail fin is elongate and shark-like, except that it has a long filamentous thread attached in younger individuals. This thread is often missing (apparently broken off) in older individuals. The shovelnose is darker in color (tan to gray or yellow-

ish green dorsally, light ventrally) than the pallid sturgeon (greyish-white) and is much smaller in maximum size. The shovelnose sturgeon rarely exceeds 5 lbs in weight, while the pallid can exceed 6 ft in length and weigh over 100 lbs. Also, the belly of the adult shovelnose sturgeon is completely



covered with bony plates and the barbels are positioned differently (see figure above). In the shovelnose all four barbels are in line and evenly spaced in front of the mouth. In the pallid, the outer barbels are placed slightly farther back than the inner barbels.

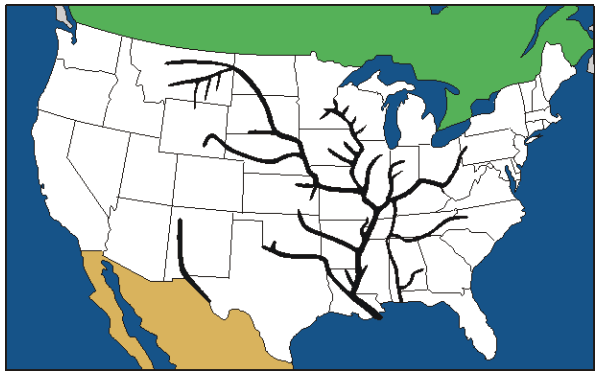
Biology: Shovelnose sturgeon can tolerate high turbidities and are usually found in the strong currents and deep channels of large rivers over sand and gravel substrates. They are apparently intolerant of the quiet waters of lakes and reservoirs, and dams restrict their movements. Shovelnose sturgeon frequent waters that are 6.5-23 ft deep and are relatively sedentary most of the time, but occasionally move long distances (as much as 7.5 mi in one day) exhibiting some homing behavior. During high water stages in the spring they frequent areas downstream of wing dams or other obstructions and remain near shore, while during summer low water levels they remain near mid-channel. Shovelnose sturgeon are opportunistic feeders; taking any aquatic insects, mussels, worms, or crustaceans that are available. Spawning normally occurs from April through early July with mature shovelnose migrating upriver to spawn over rocky substrates in flowing water between 66 and 70 °F. Well adapted as a bottom dwelling fish, the shovelnose sturgeon changes this habit by swimming near the surface during spawning. Males mature at Age V, females at Age VII at lengths of approximately 20 in and 25 in, respectively. Weights at maturity range between 2 and 3 lbs, but some individuals have been recorded to weigh nearly 15 lbs. Females do not spawn every year, and spawning chronology is not readily evident. However, shovelnose are known to hybridize with pallid sturgeon in the Missouri and lower Mississippi rivers, presumably because their former unique habitats have been altered or lost



"Larval Sturgeon"

largely due to damming, altered hydrology, and channelization. This has forced the two species to share the same spawning sites, and since fertilization occurs externally hybridization occurs when the eggs and sperm of the two species mix in the water flowing over their spawning beds.

Historic and Present Range: The shovelnose sturgeon is strictly a freshwater species that was historically found throughout most of the Mississippi and Missouri river basins, from Montana south to Louisiana, and from Pennsylvania west to New Mexico (see map). While the shovelnose has not experienced the range reduction of some of the larger Mississippi River Valley sturgeons (i.e., lake and pallid sturgeons), it is no longer found in Pennsylvania, New Mexico, and large parts of Kansas, Kentucky, Tennessee, and other states where it was once abundant. Alteration of large rivers by channelization, construction of high dams, and construction of navigation locks and dams have contributed significantly to the decline of this species by blocking access to ancestral spawning grounds and by eliminating its requisite lotic habitat.



Historic Range and Distribution of the Shovelnose Sturgeon.

Dams occurring throughout the Mississippi River Basin hinder upstream shovelnose sturgeon movements.

Artificial Propagation: Federal and State hatcheries have developed spawning techniques for the shovelnose sturgeon, and these are similar to those used to produce paddlefish in Missouri and white sturgeon in California.

Human Uses: The roe or eggs of shovelnose sturgeon is used as an acceptable caviar and it's flesh is considered a delicacy especially when smoked, but overharvest has not been a major detriment to this species. This may be due to its