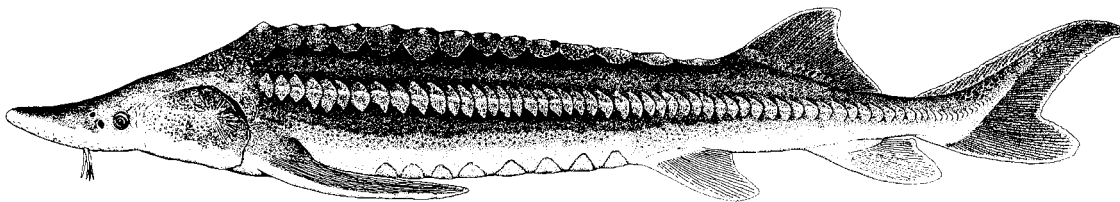


## Threatened fishes of the world: *Acipenser nudiiventris* Lovetsky, 1828 (Acipenseridae)

Paul Vecsei<sup>a</sup>, Evgenii Artyukhin<sup>b</sup> & Douglas Peterson<sup>a</sup>

<sup>a</sup>Warnell School of Forestry, Department of Fisheries, University of Georgia, Athens, GA 30602, U.S.A.  
(e-mail: pjev3402@owl.forestry.uga.edu)

<sup>b</sup>Laboratory of Fish Reproduction, 24/52 Popov Street, St. Petersburg, Russia



**Common names:** ship sturgeon, spiny sturgeon, fringebarbel sturgeon, bastard sturgeon (E), esturgeon a barbillons franges (F), glatttick (G), szintok (Hu), szyp (Po), ship (Ru). **Conservation status:** IUCN considers the Aral Sea population as extinct, the Caspian and Black Sea populations as endangered and the Danube population as critically endangered. The ship sturgeon is listed under Appendix II of CITES. **Identification:** D 39–57, A 23–37 rays, dorsal scutes 11–17, lateral scutes 49–74 and ventral scutes 11–17. Body elongated with greatest depth occurring at first dorsal scute which is unusually large in relation to other scutes. Rostrum rounded and perfectly conical in shape in adults but somewhat more spatulate in juveniles, usually 32–44% of head length. Two pairs of fimbriated barbels, originating slightly closer to mouth than tip of rostrum. Mouth inferior with upper lip barely indented and unlike any acipenserid, lower lip uninterrupted. Pectoral fins are large with strongly ossified leading edge. Adults have a peppering of small denticles covering their body but it is so fine as to give a smooth overall appearance and feels sand paper-like to the touch. Scutes lack a prominent hook appendage, even in juveniles it is barely noticeable. Lateral scutes tightly arranged and seem small compared to other acipenserids except *A. ruthenus*. Ventral scutes undergo total absorption in large adults. Postdorsal plates present as a tight conglomeration of tiny platelets. No postanal plates. Ship sturgeon of over 100 kg have been reported but specimens over 220 cm and 80 kg are exceptional. Typical size of females entering the Kura River is approximately 175 cm while males average 140 cm (Sokolov & Vasil'ev 1989). Color in adults is usually olive green or grey-blue dorsally turning lighter along the flanks. Ventral surface white. Juveniles can be identical to adults but sometimes dark gray to almost black on dorsal and lateral surface and white ventrally. Drawing by Paul Vecsei of an Ural River 55 cm juvenile now residing at the Krasnodar Research Institute of Fisheries. **Distribution:** Ship sturgeon inhabit the Azov, Black, and Caspian seas but is believed to be extinct in the Aral Sea basin. The ship sturgeon occurs in the Danube, primarily in resident form, and was known historically to ascend as far upstream as Bratislava, river km 1869 (Balon 1967, Hensel & Holčík 1997). In 1933–1934 adult ship sturgeon from the Aral Sea were stocked into the Ili River which flows into Lake Balkhash, Kazakstan. These sturgeon began reproducing and in the ensuing years, a thriving commercial fishery had developed. **Abundance:** Ship sturgeon are rare in the Azov and Black seas historically, only the Caspian had large populations, particularly in the north east region, migrating into the Ural River and into waters of Azarbaijan where they spawn in the Kura River. The Mingechaur Dam now blocks access to historic spawning grounds. This species is rarely observed in rivers along the Iranian coast but status is unknown. The ship sturgeon is near extinction in Lake Balkhash because of unregulated fishing and low water levels. The Aral Sea population lost access to the Amu Darya and Syr Darya rivers. Irrigation of cotton increased in the 1980s and salinity of the Aral Sea increased to intolerable levels (Zholdasova 1997). The number of adults entering the Kura annually is in the range of 100 individuals and only the Ural River stock is estimated in the low thousands (Avetisov 1992).

Continued fishing, both legal and otherwise will likely bring these numbers down. Ship sturgeon have not been observed in the Danube for many years and is likely extirpated (Pinter 1991). Ship sturgeon never reached the abundance of other sturgeon species probably because of their unusual life history. Juveniles can spend 2–8 years in freshwater prior to migrating out to sea. Many die during winter while susceptible to predators and limited food resources. **Habitat and ecology:** During their lifetime, ship sturgeon are often found in or near shallow river deltas, rarely venturing into deep water. The non migratory form of the Danube feeds primarily on mayfly larvae, mollusks and crustaceans. In the Caspian Sea, adults feed on small fishes such as gobiids as well as molluscs. In the south Caspian, the crabs, *Rhitropanopeus harrisi*, have become abundant since its accidental introduction in the 1950s. It now makes up a significant portion of ship sturgeon diet (Sokolov & Vasil'ev 1989). In the Kura River, juveniles consume a variety of insect larvae. The ship sturgeon is a spring spawner with most populations being diadromous. In the Danube, there has always been a permanent resident population. As with the beluga, *Huso huso*, there is a spring and autumn peak in migration to fresh water. Spring runs begin as water temperatures reach 6°C while autumn runs usually begin in October as water temperatures cool to 12–18°C (Sokolov & Vasil'ev 1989). Historically, the autumn migrants would venture further upstream and overwinter in deep pools near spawning grounds. Dams have largely upset this natural cycle. **Reproduction:** In the Kura, spawning takes place in late April and May at temperatures of 15–25°C. In the Danube, ship sturgeon spawn at lower water temperatures, usually between 10–15°C. Eggs are deposited over a gravelly bottom in current velocities of 1–2 m s<sup>-1</sup>. Depending on the population, female ship sturgeon reach sexual maturity between 12–22 years; males 6–13 years (Sokolov & Vasil'ev 1989). **Threats:** Following the Second World War, all spawning rivers of ship sturgeon had been dammed except for the Ural River. Pollution levels throughout the ship sturgeon's geographic range are high and further oil development in the Caspian Sea in the Kazakhstan region will threaten remaining populations of this species. **Conservation action:** During the 1960s and 1970s, ship sturgeon were artificially reproduced to help increase numbers. These efforts tapered off by the early 1990s and now there are not enough mature breeders caught to undergo artificial propagation.

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