

## Threatened fishes of the world, *Acipenser stellatus*, Pallas, 1771 (Acipenseridae)

P. Vecsei<sup>a</sup>, D. Peterson<sup>a</sup>, R. Suci<sup>b</sup> & E. Artyukhin<sup>c</sup>

<sup>a</sup>Warnell School of Forest Resources, UGA, Athens, GA, 30602, USA  
(e-mail: pju3402@smokey.forestry.uga.edu)

<sup>b</sup>Department of Fish Biology, Danube Delta Institute, Tulcea, Romania

<sup>c</sup>Fish Reproduction Lab, 24/52 Popov Street, 197022, St. Petersburg, Russia

Received 21 December 2004

Accepted 4 December 2005

**Common names:** stellate sturgeon, sevruga (E) Sternhausen, sterntor (G) Sevruga (Ru). **Conservation status:** Endangered under IUCN (1996) and Appendix II of CITES. **Identification:** D 40–54, A 22–35 rays, dorsal scutes 9–16, lateral scutes 26–43, and ventral scutes 9–14 (Berg 1948; Hochlechner 1999). Body streamlined and elongated with cross section smaller and more tubular than most acipensers. Rostrum is elongated, slender and spatulate, typically 50–60% of head length (Berg 1948). Two pairs of barbells originate closer to mouth than tip of rostrum. Barbells small compared to other *Acipenser* species. Middle of the upper lip indented; lower lip interrupted. Each of the scutes comprising the five principal rows (dorsal, lateral and ventral) terminates in a prominent, sharp, hook-like appendage. Between rows of scutes, body covered with numerous tiny denticles. Scutes remain prominent on adults and are never absorbed even in old individuals. Post-dorsal plates irregular and barely discernible from surrounding dermal ossification on trunk and caudal peduncle. Leading edge of pectoral fin not strongly ossified. Maximum size 2 m and 80 kg (Kozhin 1964). Body coloration black with white scutes and denticles. Illustration of a Volga River 117 cm adult by Paul Vecsei. **Distribution:** Widely distributed throughout the Ponto-Caspian region. A diadromous species, it is native to the Caspian, Black and Azov Seas. Has been recorded from waters as far west as the Sea of Marmora and Aegean Sea of the Mediterranean (Hochlechner 1999). In the Caspian Sea, the population is comprised of three distinct subpopulations known as intraspecific forms; Volga, Ural, and Kura. Of these, the Volga River stock is the largest. Major runs also occurred in the Danube, Dnieper, Kuban, Don, Terek, Sulak, Samur, and Kura rivers (Berg 1948, Hensel & Holcik 1997). Now believed to be extinct from the upper and middle Danube and spawning migrations in the lower Danube greatly reduced (Bacalbasa-Dobrovici 1997). **Abundance:** Presently, the most abundant of the Ponto-Caspian acipenserids, however most populations suffered major declines in the last decades of the 20th Century, as uncontrolled poaching followed the collapse of the former USSR (Vlasenko & Veshech 2001). **Habitat and ecology:** During its life at sea, inhabits benthic and pelagic habitats widely distributed along coastal waters of the Pont-Caspian (Lövin et al. 1981). Adults more euryhaline than other Caspian sturgeons. Diet depends largely on habitat and seasonal shifts in prey abundance but primarily marine invertebrates and small fishes (Legeza 1973). **Migration:** Timing of peak migrations varies greatly among tributaries. In some rivers such as the Terek, Sulak, Kura and Danube two distinct spawning runs have been reported; the first occurring in late spring or early summer and the second in late summer or early fall (Berg 1948). **Reproduction:** Matures at 5–17 years, after which spawning may occur every 3–4 years. Spawns at 15–26°C in swift water over inundated shorelines or cobble substrate in mainstem of large rivers (Borzenko 1964). Eggs are adhesive and remain on the rock gravel substrate until hatching. **Threats:** Following World War II, the construction of hydroelectric dams resulted in a major reduction in spawning and nursery habitats. **Conservation action:** Concerns over the widespread decline of *A. stellatus* led many countries to develop large-scale stocking programs during the late 1900s, however results have been mixed. **Remarks:** To meet CITES recommendations, countries bordering on the Azov and Black Sea have established a joint working group (Black Sea Sturgeon Management Action Group-BSSMAG) to develop a regional management plan for the sustainable development and conservation of sturgeons. Romania is currently constructing a permanent international research station to monitor annual sturgeon recruitment on the lower Danube.



- Borzenko, M.P. 1964. The present state and forecasting of fluctuations in the stocks of *Acipenser stellatus* in the Caspian Sea with regulated river flow. pp. 259–286. *In: Sturgeons of the Southern Seas of the USSR*. VNIRO Proceedings 52, VNIRO Publishers, Moscow (in Russian).
- Berg, L.S. 1948. *The Freshwater Fishes of the USSR and Adjacent Countries*. English translation. Israel Program for Scientific Translations, Jerusalem, 1965. 505 pp.
- Hensel, K. & J. Holcik. 1997. Past and current status of sturgeons in the upper and middle Danube River. *Environ. Biol. Fish.* 48: 185–200.
- Hochlechner, M. 1999. *The Sturgeons and Paddlefishes (Acipenseriformes) of the world*. Aquatech Publications, Vienna. 163 pp.
- Kozhin, N.I. 1964. Sturgeons of the USSR and their reproduction. pp. 32–59. *In: Sturgeons of the Southern Seas of the USSR*. VNIRO Proceedings 52, VNIRO Publishers, Moscow (in Russian).
- Legeza, M.I. 1973. The present distribution of sturgeons (the Family Acipenseridae) in the Caspian Sea. *J. Voprosy Ichthyologii (Problems of Ichthyology)* Vol. 13, 6(63): 1008–1015.
- Lövin, A.V., O.P. Bezrukavnikov & M.I. Pirogovskii. 1981. Vertical distribution of Acipenserids in Northern part of the Caspian Sea. pp. 143–144. *In: Efficient Methods of Sturgeon Management*. Book of abstracts, Volgograd (in Russian).
- Vlasenko, A.D. & P.V. Veshchev. 2001. Assessment of the status of Caspian stellate sturgeon stocks and predication of its catch in 2002. pp. 155–163. *In: Fisheries Research in the Caspian Sea*, Astrakhan.