

First report on the Siberian sturgeon *Acipenser baerii* Brandt, in the Reda River (Baltic Sea basin)

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Abstract. The Siberian sturgeon, *Acipenser baerii* Brandt, is reported in the Reda River, which flows into the Puck Bay, for the first time. In total, 12 specimens of *A. baerii* were caught during monthly surveys in June and July 2006. The fish were captured during downstream movement between 18:00 and 06:00. The specimens collected in Reda River ranged from 10.3 to 15.5 cm standard length (SL). It is hypothesized that the fish originated from one of the hatcheries located on the banks of the Reda River. This is also the first report of Siberian sturgeon in Polish Pomeranian rivers.

Keywords: *Acipenser baerii*, non-native species, Reda River, Puck Bay, Baltic Sea

The Siberian sturgeon, *Acipenser baerii* Brandt, inhabits large Siberian rivers from the Ob to the Kolyma and Lake Baikal (Hochleitner and Gessner 2001). In the 1960s, *A. baerii* was deliberately released into the Gulf of Riga and the Gulf of Finland (Kairov and Kostrickina 1970). Since the beginning of the 1990s, the development of intensive sturgeon aquaculture in Central and Western Europe has been expected to have negative consequences by increasing the number of non-native sturgeon species in the by-catch of German, Polish, and Dutch coastal fisheries (Arndt et al. 2002). These introductions

were reflected in several reports of Siberian sturgeon in internal Polish marine waters and its territorial sea. Most reports from Polish Marine Areas were from the Szczecin Lagoon to the Pomeranian Bay (Gessner et al. 1999, Arndt et al. 2000). According to Kolman (2000), there have not been any reports of *A. baerii* in Polish rivers, although a few earlier reports were made of originated in the Regalica River, a part of the Oder River (Gessner et al. 1999). The present paper is the first report of Siberian sturgeon in the Reda River.

Fishing surveys were conducted monthly in the Reda River from June 2005 to July 2007. The sampling lasted between two to five days. No sampling was performed in January and February 2006, and in January 2007. Fish moving upstream and downstream were caught separately with two connected three-wing fyke-nets. The fishing gear had 15 mm starched mesh and covered the entire river width and water column. It was located between 1.1 km from the river mouth in the Puck Bay and 7.9 km downstream from a 2 m weir (Figure 1). The weir has an inefficient fish pass which can only be overcome by adult salmonids migrating upstream.

Among the 320 000 individuals comprising 37 fish and lamprey species caught in the Reda River, there were 12 individuals of *A. baerii*. Detailed information on the dates, times of catch, and the biometric characters of the Siberian sturgeon caught are

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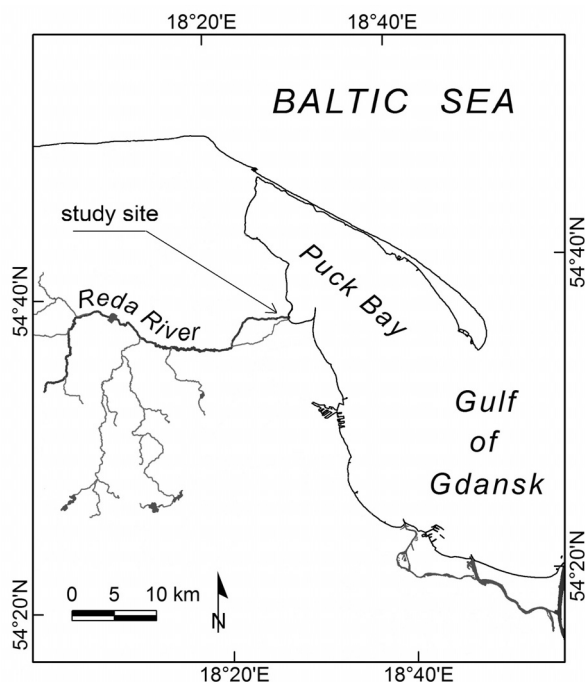


Figure 1. Sampling station on the Reda River.

presented in Table 1. The *Acipenser baerii* specimens caught in the Reda River were preserved in 4% formalin. All the sturgeon caught were deposited in the fish collection of the Hel Marine Station.

The sturgeon were caught between 18:00 and 06:00. Similar behavioral patterns were observed by Fredrich et al. (2008) and Kapusta et al. (2008) in a radio-tagged Atlantic sturgeon, *Acipenser oxyrinchus* Mitchill, and the downstream movement of stocked *A. oxyrinchus* juveniles was confirmed after sunset in experiments performed in the Barycz and Drawa rivers (Gessner and Skóra unpubl. data).

Based on information from the District Veterinary Inspector in Wejherowo, none of the 12 fish farms operating in the Reda River basin had sturgeon in 2007 (M. Czuj – personal communication). However, the escape of a large number of sturgeon was reported a year later by a fish farm located in Reda-Ciechocino. Lack of experience in sturgeon farming might have discouraged the farmer from notifying the veterinary inspectorate in due time of the arrival of new fish. This scenario regarding the origin of the Siberian sturgeon in the Reda River seems to be the most probable. Theoretically, Siberian sturgeon could have been released deliberately into lakes connected with the Reda River, but the Polish Angling Association in Gdańsk, who holds the fisheries rights in these water bodies, excludes this as a possibility (G. Gęsiarz – personal communication). A third scenario is that the sturgeon could have originated

Table 1

Date, time of catch, and biometric characters of *A. baerii* caught in the Reda River. Fish preserved in 4% formalin

Date	Time	Standard length (cm)	Body weight (g)	Number of bony scutes		
				dorsal	lateral	ventral
28-6-2006	00:00-06:00	12.2	14.6	16	46	12
	00:00-06:00	13.8	20.3	16	47	12
	18:00-00:00	11.2	7.8	14	42	9
29-6-2006	00:00-06:00	12.9	15.5	14	44	10
	00:00-06:00	13.4	17.2	14	48	10
	00:00-06:00	10.4	8.2	14	48	11
	18:00-00:00	10.3	8.1	14	53	10
	18:00-00:00	10.9	9.3	13	36	9
30-6-2006	00:00-06:00	12.1	11.8	15	39	10
	18:00-00:00	12.2	11.6	15	47	10
22-7-2006	00:00-06:00	15.1	22.0	15	48	12
23-7-2006	00:00-06:00	15.5	26.9	14	43	10

from hatcheries located in the Vistula River drainage. They could have escaped to the river during flooding and then migrated via the Gulf of Gdansk to the Reda River. This explanation is the least plausible because of the short period of time during which the sturgeon were observed in the river and the fact that *A. baerii* were only in the fishing gear that caught fish moving downstream.

The Siberian sturgeon was the most common among the non-indigenous sturgeon reported in Polish Baltic coastal waters in the 1980s and 1990s (Gessner et al. 1999), and it was also the dominant sturgeon species noted in the Vistula Lagoon in 2011 (Skóra et al., unpubl. data). According to Arndt et al. (2002), the occurrence of *A. baerii* in the Baltic is caused by accidental escapes from fish farms and, to a lesser degree, deliberate releases by anglers and aquarists. The Siberian sturgeon is currently the most widely-available sturgeon species for sale as a pond fish on the Internet.

The current coexistence of the Siberian sturgeon with the reintroduced *A. oxyrinchus* in the Baltic basin is undesirable. As described by Gessner et al. (1999) the adverse impact might range from the introduction of pests and pathogens to direct competition and even hybridization, putting at risk the rehabilitation of the native sturgeon species. Unfortunately, exotic sturgeon species occurring in the fish catch distract fishermen from the protected *A. oxyrinchus* which as a result becomes an object of poaching.

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