

## PROPOSAL FOR INCLUSION OF SPECIES ON THE APPENDICES OF THE CONVENTION ON THE CONSERVATION OF MIGRATORY SPECIES OF WILD ANIMALS

A. PROPOSAL: Inclusion of the following species of *Acipenser persicus* in **Appendix II** of the Convention on the Conservation of Migratory Species of Wild Animals:

B. PROPONENT: **Federal Republic of Germany**

### C. SUPPORTING STATEMENT

#### 1. Taxon

1.1_	Classis:	Actinopterygii
1.2	Ordo:	Acipenseriformes
1.3	Familia:	Acipenseridae
1.4	Species:	<i>Acipenser persicus</i> Borodin, 1897
1.5	Common names:	English: Persian sturgeon French: German: Russian: Persidskiî osetr Spanish:

#### 2. Biological data

##### 2.1 Distribution

*Acipenser persicus* inhabits the Caspian Sea, the Eastern part of the Black Sea and the large rivers which enter these basins (Vlasenko et al., 1989).

In the northern part of the Caspian Sea a small spawning populations migrates into the Volga and Terek rivers (Russian Federation). The main spawning population of the Persian sturgeon concentrates in the Southern Caspian Sea and ascends the rivers on the Azerbaijan (Kura) and Dagestan (Sulak and Samur) coasts (Vlasenko et al., 1989) as well as the Gorgan-Chaii river (Iran). Historically, the main spawning grounds of the species on the Iranian coast were located in the Sefid-Rud river. However, they have been destroyed by the Mangil Dam (J. Holcik, personal communication).

In 1986, investigations by Artyukhin and Zarkua (1986) revealed the presence of *Acipenser persicus* in the Black Sea where specimens were obtained from the Rioni River in the Caucasus. The authors suppose that *Acipenser persicus* may also be present in the Inguri River as well as in other Caucasian mountain rivers and possibly in rivers along the Anatolian coast, but there is no recent record of the species within these rivers.

##### 2.2 Population

Information about the total size of the population of *Acipenser persicus* has not been published.

The only information available is about the size of the Rioni River population (Georgia)

that, in the early 1980s, was estimated to consist of about 17,000 specimens (Pavlov et al., 1994).

Lelek (1987) classified the status of *Acipenser persicus* in the Caspian Sea as Endangered.

The IUCN (1996) classifies the status of the Black Sea population in Russia, Georgia and Turkey as Endangered and the status of the Caspian Sea population in Russia, Azerbaijan and Iran as Vulnerable.

### 2.3 Habitat

Little information is published about the ecology of this anadromous (definition see on p. 12: 2.4) species since its taxonomic status is debated and it is usually not distinguished from the Russian sturgeon *Acipenser gueldenstaedtii* (see also 7. Additional remarks). The special habitat requirements for *Acipenser persicus* are unknown.

Vlasenko et al. (1989) state that the main feeding grounds of the Persian sturgeon in the Caspian Sea are located in the southern and central region.

### 2.4 Migrations

*Acipenser persicus* is anadromous (definition see on p. 12: 2.4) and cyclically undertakes long migrations from the open sea into the rivers for spawning (Vlasenko et al., 1989).

In the Caspian Sea, the main spawning rivers of the species were located in the southern part along the Iranian coast (Sefid-Rud, Gorgan and Babol'). A smaller spawning population is reported from the Kura (Azerbaijan) and the Sulak (Dagestan, Russian Federation) and from the Volga and Terek Rivers in the northern Caspian basin. The migration routes of the spawning populations and the migration pattern are not described in recent studies.

However, it is known that like for the Russian sturgeon *Acipenser gueldenstaedtii* there is a distinction between a spring and a winter race according to the time of the migration (Vladykov, 1964). The spring race begins the spawning run into the rivers in early spring, in the mid or late summer the run reaches a peak and finally ceases in late autumn. The so-called winter race generally does not spawn the same year they enter the river. They hibernate in the rivers and reproduce the following year.

The information about the spawning populations in the Black Sea basin is also very scarce. The location of the spawning grounds and the migration pattern is not described in recent studies. According to Artyukhin and Zarkua (1986) the Rioni River population is represented by the spring race.

In the Caspian Sea, *Acipenser persicus* is widely distributed in all parts, but it feeds and spends the winter mainly in the southern and central Caspian Sea (Vlasenko et al., 1989). Most of its population remain near the south and south-eastern coasts (Kazancheev, 1981) but long distance migrations between the northern and southern part are also reported.

## 3. Threat data

### 3.1 Direct threat of the population

The main threats to the species are the loss of critical habitat such as spawning grounds due to dam constructions (see 3.2), the high level of pollution in almost all rivers within its range, and the legal and illegal fishing during the spawning season.

During the last 15-18 years, the level of pollution increased drastically in almost all rivers entering the Caspian Sea, the main sources being oil and other industrial sewage (Vlasenko, 1994). In the southern part of the Caspian Sea, pollution may soon affect the main population of the species. The Kura River is one of the major sources of pollution: due to draining mining and industrial sewage from the upper part of the river (Georgia and Armenia) the river water carries high concentrations of heavy metals such as copper and molybdenum (Dumont, 1995). Additionally, the intensifying oil pollution in the southern part of the sea along the coast of Azerbaijan threatens the environment. In this region "lakes" of spilled oil and toxic waste have formed which are gradually engulfed by the raising sea water and will be transported to the open sea and along the southern coast. The Caspian Sea water level rapidly raised during the last 15 years and increased in about 2 m within this period (Rodionov, 1994; Dumont, 1995). The effects of toxins on *Acipenser persicus* have not been investigated but are reported for *Acipenser gueldenstaedtii* (p. 14).

There is no information about the total amount of legal and illegal catch of the species since it is usually not distinguished from its close relative *Acipenser gueldenstaedtii*. However, it can be concluded that *Acipenser persicus* is also subject to poaching and that the spawning population is threatened by the illegal catch.

### 3.2 Habitat destruction

The construction of hydroelectric power stations as well as of water reservoirs in almost all rivers where the species spawns led to a sharp reduction of available spawning grounds. In the Caspian Sea basin, all sturgeon species lost approximately 80% of their spawning grounds (Barannikova et al., 1995). In the Volga, there remained only 430 ha of the total 3,600 ha after the damming of the river by the Volgograd Dam. The area of the natural spawning grounds in the Kura River has been reduced by dam constructions to about 160 ha, in the Terek River to 132 ha and in the Sulak River to 201.6 ha (Vlasenko, 1994). The spawning grounds in the Sefid-Rud River on the Iranian coast were completely destroyed by the Mangil Dam and heavy pollution (J. Holcik, personal communication). There is no further information about the total loss of spawning grounds in Iranian waters.

The reduction of available natural spawning grounds due to river flow regulations subsequently led to a reduction of the natural reproduction of several sturgeon species (Barannikova et al., 1995; Khodorevskaya et al., 1997). Although not reported for *Acipenser persicus*, it can be concluded that the species is also affected.

### 3.3 Indirect threat

Indirect threats to the populations of *Acipenser persicus* are not described. Effects of environmental contaminants have not been investigated for the Persian sturgeon but for

the sympatric Russian sturgeon *Acipenser gueldenstaedtii* (p. 14). A total degeneration of the gonads and an increased number of aberrations especially in the gameto- and gonadogenesis have been noticed for this species as well as for other sympatric sturgeons - signs which clearly demonstrate that the natural reproduction sharply declines due to pollution. As *Acipenser persicus* is living in the same watersheds, similar effects on the natural reproduction are most probable.

Although the water quality in the Caspian Sea has improved during the last years and subsequently some signs of degeneration disappeared, there is a threat of increasing pollution in the whole basin in the near future with the sea level still raising and the oil industry in Kazakhstan and Azerbaijan developing.

### 3.4 Threat connected especially with migrations

The migration pattern of *Acipenser persicus* (anadromous spawning migration and seasonal migration in the sea basins) makes the species especially vulnerable to overfishing because several national boundaries are cyclically passed and several range states are fishing for sturgeons in the Caspian and Black Sea basin. Only international agreements between the range states concerning the sturgeon fishery, a ban on the fishery in the open sea (protection for juveniles and immature fish) and a setting of sustainable quotas can help to stop the further decline of the species.

Especially in the Caspian Sea where the species is most abundant and the commercial exploitation is highest such an agreement between Azerbaijan, the Russian Federation, Kazakhstan, Turkmenistan and Iran is strongly needed. Although the international trade of all sturgeon products, especially of the highly priced caviar, is controlled by CITES regulations since April 1998 and poaching is consequently hoped to cease, further action for the conservation of the sturgeon species is required.

Despite the fact that the five range states of the Caspian Sea has set up a *Committee for the Conservation and Use of the Biological Resources in the Caspian Sea* during the last years, the proposed international agreement governing Caspian sturgeon catch and drawn up by this Committee has not been signed so far (till the end of 1998).

### 3.5 National and international utilization

*Acipenser persicus* is a highly appreciated fish. The products, caviar and flesh, have a great nutritional value (Vlasenko et al., 1989). However, the Persian sturgeon escapes any official catch statistic since it had not been distinguished from the commercially important *Acipenser gueldenstaedtii*.

**Fishery and Caviar.** Kazanchev (1981) reports that from 1974 to 1978, the catch in the Kura River fluctuated between 90 and 220 metric tons. No further catch statistics for the species, neither from the Russian Federation nor from Iran are available. It can be supposed that the reported catch of *Acipenser gueldenstaedtii* possibly includes a part of *Acipenser persicus*. The species was estimated by Kazanskii (1979, in Vlasenko et al., 1989) to account for 10-15% of all of the sturgeons in the Volga, while Artyukhin (1979, in Vlasenko et al., 1989) did not think that more than 6-7% of sturgeons in the Volga belonged to this species. It may be concluded that according to its main distribution along the southern and south-eastern coast, the species is also included in the catches of *Acipenser gueldenstaedtii* in Iran. Subsequently, it seems probable that eggs of *Acipenser*

*persicus* processed as caviar are sold under the name of "osietra", "asetra" or "osietre" which are usually used for caviar made from the roe of *Acipenser gueldenstaedtii*. Josupeit (1994), in her book about the world trade of caviar does not even mention the species. From official statistics it remains unclear, to what degree *Acipenser persicus* is nationally utilized and the relationship between national and international trade is not reported.

**Illegal trade.** Illegal trade of products of *Acipenser gueldenstaedtii*, i.e. caviar, increased since the collapse of the former USSR and it might be supposed that there is also an illegal trade of caviar made from the roe of *Acipenser persicus*. However, the level of the illegal trade of *Acipenser persicus* products is unknown.

**Artificial Propagation.** Iran has intensive ranching programmes for sturgeon species, which may include *Acipenser persicus*. The total number of the produced fry is not given in the literature. Barannikova (1995) reports that biotechnology of the Persian sturgeon artificial propagation at hatcheries in the Volga River has been suggested, but the species rearing was not common in 1993. Pavlov et al. (1994) proposed a ranching programme for the Rioni River population of *Acipenser persicus*, but there is no further information on this programme available.

#### 4. Protection status and needs

##### 4.1 National protection status

According to the available information *Acipenser persicus* is not protected by law in any of the countries of origin.

##### 4.2 International protection status

*Acipenser persicus* is listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

##### 4.3 Additional protection needs

A special conservation programme for *Acipenser persicus* is not reported. Pavlov et al. (1994) pointed to the need in creating a protected marine zone in the area of the Rioni River delta in the Black Sea.

Detailed recommendations for the conservation of the Eurasian sturgeon species - worked out during the 1<sup>st</sup> Meeting of Representatives of the Range States on Developing Measures for the Conservation of Sturgeon Species under CITES Provisions (Moscow, Russia, 19-23 January 1998) - are attached in the Appendix at the end of the document.

#### 5. Range States

The Range States of the **Caspian Sea population** of *Acipenser persicus* are

- Azerbaijan
- Iran
- Kazakhstan
- Russian Federation and
- Turkmenistan.

**Proposal II / 20**

The Range states of the **Black Sea population** of *Acipenser persicus* are

- ? Georgia and
- ?Turkey.

According to FAO-data these countries are also the major fishing countries in the range area of the species.

#### 6. Comments from Range States

The Range states of the species have been provided with a copy of a draft proposal (Inclusion of 18 species of Acipenseriformes in Appendix II of CMS) and were asked for their comments. The appreciated scientific comments and corrections are integrated in the text. The position of each Range state on the proposal are as follows:

- Caspian Sea population:
  - **Azerbaijan** agrees to the proposed inclusion of 18 sturgeon species in Appendix II of CMS and considers that it is very important to protect sturgeons in the Caspian Sea.
  - **Iran** has not submitted any comments until the end of May 1999
  - **Kazakhstan** expressed the opinion that it considers possible the inclusion of sturgeons in Appendix II of CMS with the aim of taking measures on their conservation in the Caspian Sea.
  - The **Russian Federation** wishes to discuss its comments on the proposal with Germany in a German-Russian working group „Nature Conservation and Biodiversity“ in Munich, Germany, in September 1999.
  - **Turkmenistan** has not submitted any comments until the end of May 1999.
- BlackSea population:
  - **Georgia** fully agrees that the population status of almost all sturgeon species gives reason for major concern. It states that the conservation of sturgeon species would be even more facilitated in case of inclusion of these species into Appendix II of CMS. Furthermore, Georgia envisages the elaboration of a strategy for the conservation of sturgeon species and expresses its interest in the creation of a global network for the exchange of information on research, monitoring and conservation of all sturgeon species. Finally, it notes that the conservation of migratory species – including sturgeons – is only conceivable by the means of international conservation.
  - **Turkey** has not submitted any comments until the end of May 1999.

#### 7. Additional Remarks

*Acipenser persicus* is sympatric with *Acipenser gueldenstaedtii*, *Acipenser ruthenus*, *Acipenser stellatus*, *Acipenser nudiiventris* and *Huso huso*.

The taxonomic status of *Acipenser persicus* was not clear for a long time (discussion in Birstein and Bemis, 1997) although Vladykov (1964) already recognized it as a different and valid species. The population of *Acipenser persicus* in the Kura and Sefid-Rud Rivers was believed to be a subspecies of *Acipenser gueldenstaedtii* and was named *Acipenser gueldenstaedtii persicus* by Berg (1933 in Vlasenko et al., 1989). The population of *Acipenser persicus* in the Volga and Ural Rivers was thought to be an intraspecific group of *Acipenser gueldenstaedtii*.

In 1973 and 1974 several scientists (summary in Vlasenko et al., 1989) investigated the antigenic components in the blood serum proteins of specimens from the Kura and Volga and found that they were identical but different from those of *Acipenser gueldenstaedtii*. Subsequent analyses of morphometric and meristic characters of both species revealed that they are different. These investigations induced Vlasenko et al. (1989) to regard *Acipenser persicus* as a valid species. However, this taxonomic evaluation is often ignored until today and *Acipenser persicus* is very often not mentioned as a separate species in the recent literature.

## 8. References

- Artyukhin, E. N., and Z. G. Zarkua. 1986. On the question of taxonomic status of the sturgeon in the Rioni River (the Black Sea basin). *Voprosy Ikhtiologii*, 26 :61-67 (in Russian).
- Barannikova, I.A. 1995. Measures to Maintain Sturgeon Fisheries under Conditions of Ecosystem Changes. Proceedings of the Second International Symposium on Sturgeons, September 6-11, 1993. Moscow-Kostroma-Moscow (Russia). VNIRO Publication. Pp. 131-136.

- Barannikova, I.A., I.A. Burtsev, A.D. Vlasenko, A.D. Gershanovich, E.V. Makarov and M.S. Chebanov. 1995. Sturgeon Fisheries in Russia. Proceedings of the Second International Symposium on Sturgeons, September 6-11, 1993. Moscow-Kostroma-Moscow (Russia). VNIRO Publication. Pp. 124-130.
- Birstein, V. J., and W. E. Bemis. 1997. How many species are there within the genus *Acipenser*? In: V. Birstein, J. R. Waldman, and W. E. Bemis (eds.). Sturgeon Biodiversity and Conservation. Kluwer Academic Publishers, Dordrecht. pp. 157-163.
- Borodin, N. A. 1897. A report about a summer 1895 zoological expedition on board of the cruiser "Uralets" in the northern part of the Caspian Sea. Vestnik Rybopromyshlennosti, 1 :1-31 (in Russian).
- Dumont, H. 1995. Ecocide in the Caspian Sea. Nature, 377 :673-674.
- IUCN. 1996. IUCN Red List of Threatened Animals. IUCN, Gland, Switzerland.
- Kazancheev, E.N. 1981. Ryby Kaspiiskogo morya. Izd. Lëgkaya i pishchevaya promyshlennost', Moskva. (In Russian).
- Marti, V. Yu. 1940. Systematics and biology of the Russian sturgeon from the Caucasian shore of the Black Sea. Zoologicheskii Zhurnal, 19 :865-872 (in Russian).
- Pavlov, D. S., K. A. Savvaitova, L. I. Sokolov and S. S. Alekseev. 1994. Rare and endangered animals. Fishes. Vysshaya Shkola, Moscow. 334 pp. (in Russian).
- Rodionov, S. N. 1994. Global and Regional Climate Interaction: The Caspian Sea Experience. Kluwer Academic Publishers, Dordrecht. 241 pp.
- Vladykov, V.D. 1964. Inland Fisheries Resources of Iran, espec. of the Caspian Sea with special reference to sturgeon. Report to the Government of Iran. Expanded Program of Technical Assistance. FAO, Rome, 1964. 51 pp. (Unpublished).
- Vlasenko, A.D. 1994. The Present Status and Conservation of Sturgeons (Acipenseridae) in the Caspian Basin. Proceedings of the International Conference on Sturgeon Biodiversity and Conservation, New York 1994.
- Vlasenko, A.D., A.V. Pavlov and V.P. Vasil'ev. 1989. *Acipenser persicus* Borodin, 1897. In: Holcik, J. (ed). The Freshwater Fishes of Europe. Vol. 1/II: General Introduction of Fishes. Acipenseriformes. Wiesbaden, AULA-Verlag. Pp. 345-366.
- Volovik, S.P., V.G. Dubinina and A.Q.D. Semenov. 1993. Hydrobiology and Dynamics of Fisheries in the Azov Sea. Studies and Reviews. General Fisheries Council for the Mediterranean. No. 64. FAO, Rome. Pp. 1-58.