

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

**PROPOSAL:** Inclusion of the following species of *Pseudoscaphirhynchus fedtschenkoi* in **Appendix II** of the Convention on the Conservation of Migratory Species of Wild Animals (CMS):

**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>Pseudoscaphirhynchus fedtschenkoi</i> (Kessler, 1872)
1.5	Common names	English: Syr-Dar shovelnose (sturgeon) French: Nez-pelle du Syr daria German: Russian: Syrdar'inskii lzhelopatonos Spanish:

**2. Biological data**

**2.1 Distribution**

*Pseudoscaphirhynchus fedtschenkoi* is endemic to the Syr Darya River where it inhabits the middle reaches of the river from the Fergana Valley to the lower reaches (Nikol'skii, 1938; Berg, 1948; Reshetnikov and Shakirova, 1993).

**2.2 Population**

*P. fedtschenkoi* has always been reported to be rare within its distribution range (Nikol'skii, 1938). Like other members of the ichthyofauna of the Syr Darya, it has been studied rather extensively. Nikol'skii (1938) and Berg (1948) describe the species as polymorphic and distinguish three forms: "the type form" with a long snout and without cercus, "morpha brevirostris" with short snout and long cercus and "morpha intermedia" with moderately elongate snout and a cercus. After Berg (1948) all these forms were not infrequently found in the same catch.

At present, the population of *P. fedtschenkoi* is practically extinct (Birstein, 1993 and 1997). For the last 25 years there have been no reports of the species being caught (Mitrofanov et al., 1986; Salikhov and Kamilov, 1995).

*Pseudoscaphirhynchus fedtschenkoi* is listed as Extinct by Pavlov et al. (1994) and as Critically Endangered by IUCN (1996).

### 2.3 Habitat

*Pseudoscaphirhynchus fedtschenkoi* spends its whole life in freshwater. Unfortunately, little is known about the biology and ecology of the species. The Syr Darya is characterised as a turbid river with a mean annual sediment out wash from the Naryn and Kara Darya drainage (which meet to form the Syr Darya) of 357 t/km<sup>2</sup> (Salikhov and Kamilov, 1995). The native fish fauna of the Syr Darya including *P. fedtschenkoi* is especially adapted to turbid waters.

The spawning of the Syr-Dar shovelnose has been reported from near Chinaz on rocky sediments in the second half of April (Berg, 1948).

### 2.4 Migrations

*P. fedtschenkoi* is not anadromous (definition see on p. 12: 2.4) like other sturgeons but spends its whole life in freshwater. The migration pattern as well as the distances that the species usually travels through the river system of the Syr Darya are insufficiently known. It can only be presumed that during the cyclical migration to the spawning grounds the national boundaries of Kazakhstan and Uzbekistan (and probably Kirgistan and Tadjikistan) are crossed.

## 3. **Threat data**

### 3.1 Direct threat of the population

The Syr Darya shovelnose is threatened by a complete loss of its natural habitat, i.e. the complete regulation of the river flow of the Syr Darya because of the construction of a large irrigation system for cotton industry (see 3.2).

In addition, runoff waters are carrying large amounts of salts as well as mineral fertilisers and toxic chemicals used for cotton growing which, undoubtedly, affect the ichthyofauna in many aspects (growth rate, fecundity, survival, etc.) (Salikhov and Kamilov, 1995). However, this effect has not been studied for the basin of the Syr Darya and its inhabitants including *P. fedtschenkoi* but has only been demonstrated for other fish species in the Lake Sarykamysh of the Amu Darya basin (Salnikov and Reshetnikov, 1991).

As a consequence of the large irrigation system all main river basins of the Aral Sea - the Amu Darya, Zeravshan, Kashka Darya and Syr Darya - have been connected, with the result that faunas are mixing and some species have been dispersed (Salikhov and Kamilov, 1995). The consequences for *P. fedtschenkoi* are not investigated, however it is a well-known fact that native fish species have been suppressed by non-native species which occupy the same ecological niche.

In the 1930s the introduction of non-native fish species into the river systems of the Aral Sea basin was started in order to increase the diversity of commercial fishes. This also involved the middle course of the Syr Darya and the wide dispersal of a number of newly introduced species has affected the local ichthyofauna. Some Far Eastern invaders crowded out native species from their typical niches (Salikhov and Kamilov, 1995). A specific effect on *P. fedtschenkoi* has not been studied but may be highly probable.

### 3.2 Habitat destruction

Being one of the two rivers feeding the Aral Sea, the Syr Darya is the longest river in Central Asia with a total catch area of around 462.000 km<sup>2</sup>. The Syr Darya and its tributaries flow through the economically most important regions of the Central Asian Republics of Tadjikistan, Uzbekistan and Kazakhstan and are the main sources of their water supply (Salikhov and Kamilov, 1995). Their waters had been used for centuries for irrigation, particularly in the Fergana Valley and Tashkent Oasis; however, irrigation systems were local and their impact on the composition of the ichthyofauna was slight (Shul'ts, 1956).

From 1950 on, large-scale hydroconstruction has been started using the waters for an irrigation system for the newly settled cotton industry. In the following years, by increasing agricultural production (90% of all cotton grown in Russia is produced in this region) through expansion of irrigation, the Syr Darya, perhaps more than any other river, was subjected to massive hydroconstruction. 22 reservoirs with a total area of 1854 km<sup>2</sup> were constructed in its basin and as a result the Syr Darya and all of its tributaries were regulated (Salikhov and Kamilov, 1995). At present time, a branched irrigation network exists virtually throughout the entire middle course of the Syr Darya. Water depletion increased annually and reached 50 km<sup>2</sup>/a in the 1980s (Salikhov and Kamilov, 1995). The whole water regime has been destroyed and due to the formation of channel reservoirs, the flow velocity changed. Thus, life conditions for endemics of the turbid waters of Central Asia, like the Syr Darya shovelnose as well as the main aboriginal core of the ichthyofauna of the middle and piedmont sections of the Syr Darya basin, became extremely unfavourable.

As a consequence of the large-scale hydroconstruction on both river systems of the Syr Darya and Amu Darya, the Aral Sea is drying and since 1960 lost up to 70% of its volume (Feschbach and Friendly, 1991; Peterson, 1992; Smith, 1994).

As a consequence of the enormously large irrigation system new habitats in form of drainage lakes, like the Arnasayskaya lake system and Lake Sarykamys (Fergana Valley), appeared and offered new life conditions for typical lake forms (Salikhov and Kamilov, 1995). However, the original habitat is lost for the main aboriginal core of the ichthyofauna which is especially adapted to turbid waters.

### 3.3 Indirect threat

There is no information about an indirect threat of *P. fedtschenkoi*. However, the high level of pollution (see 3.1) may certainly affect the breeding success of the species.

### 3.4 Threat connected especially with migrations

No information available.

The migration routes of the Syr-Dar shovelnose are not described in the literature. It might be concluded that the fish travelled probably throughout its entire range within the Syr Darya from the mouth to the middle reaches in the Fergana Valley. The destruction of this migration routes evidently threatens the survival of this critically endangered species.

**Proposal II / 28**3.5 National and international utilization

*Pseudoscaphirhynchus fedtschenkoi* has no commercial value and is not caught (Birstein, 1993).

**4. Protection status and needs**4.1 National protection status

*Pseudoscaphirhynchus fedtschenkoi* is listed as Endangered in the USSR Red Data Book (1984), in the Kazakh SSR Red Data Book (1978) and the Uzbek SSR Red Data Book.

4.2 International protection status

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

4.3 Additional protection needs

Since there is obviously no conservation programme for this critically endangered species, a concerted international action to save this unique sturgeon which should include experts from all range states is strongly needed.

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 *P. fedtschenkoi* are

- Kazakhstan
- Uzbekistan
- and probably
- Kyrgyzstan and
- Tajikistan

**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:

- **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.
- **Kyrgyzstan** has not submitted any comments until the end of May 1999.
- **Tajikistan** has not submitted any comments until the end of May 1999.
- **Uzbekistan** supports the proposal (verbal communication to the German Embassy in Tashkent).

## 7. Additional Remarks

The Aral population of the ship sturgeon, *Acipenser nudiventris*, is another victim of the Aral Sea disaster (i.e. drying of the Aral Sea as a result of using the waters of Syr Darya and Amu Darya for irrigation for the cotton industry). *A. nudiventris* is a migratory species and its members of the Aral population were reported to spawn together with *P. fedtschenkoi* in the Syr-Darya near Chinaz (Berg, 1948). At present, the Aral population of *A. nudiventris* is considered to be Extinct (Zholdasova, 1997).

Two other species of the same genus *Pseudoscaphirhynchus*, *P. hermanni* and *P. kaufmanni* (status after IUCN (1996): Critically Endangered and Endangered) inhabit the second big river of the Aral Sea basin, the Amu Darya.

## 8. References

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