

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 *Acipenser sturio* 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>Acipenser sturio</i> Linnaeus 1758
1.5 Common names	Croat: Štrljun, Jesetra, Atlanska Jesetra
	English: Atlantic sturgeon, Common sturgeon, Baltic sturgeon, German sturgeon
	French: Esturgeon commun
	German: Gemeiner Stör
	Portuguese: Esturjão, Solho, Solho-Rei
	Russian: Atlanticheskiĭ osëtr, Baltiĭskiĭ osëtr
	Spanish: Esturión comun, Esturión atlántico
	Swedish: Europeisk stoer

2. Biological data

2.1 Distribution

Acipenser sturio is confined to the North-eastern Atlantic Ocean, especially to the shallow parts of the North and Baltic Seas and some coastal water bodies in the Mediterranean and Pontic region, including the Ligurian, Tyrrhenian, Adriatic, Ionian, North-Aegean, Marmara, and Black Seas (Holcik et al., 1989). The species has also occasionally been reported from Iceland, the White Sea coast, and also from the North African coasts of the Atlantic and Mediterranean at Casablanca, Oued Bou Regreg and Fedalla (Holcik et al., 1989).

However, the reproduction of *Acipenser sturio* is confined to European waters. Mature adults migrate into freshwater for spawning. Historically, *Acipenser sturio* ascended all major European river systems to spawn. Holcik et al. (1989) compiled all information on the historic range of the species which has been recorded in more than 30 river basins throughout Europe until its dramatic decline begun at the end of the 19th century and the beginning 20th century.

At present, *Acipenser sturio* is a threatened species close to extinction throughout its entire range. Only two spawning populations of the Common sturgeon still exist in the Gironde (France) and in the Rioni (Georgia) (Holcik et al., 1989; Debus, 1997).

2.2 Population

The total size of the present populations is unknown.

In France, the Gironde population is estimated to consist of a few thousand individuals (Lepage and Rochard, 1995). In 1994, French researchers caught several juvenile sturgeon in the Gironde (Debus, 1997), a fact showing that natural reproduction of *Acipenser sturio* still occurs in this river.

The population of *Acipenser sturio* in the Black Sea basin which enters the Rioni River for spawning has been estimated to consist of about 300 specimens (Pavlov et al., 1994). However, recent efforts to catch a broodstock for a restocking programme in Germany failed and no fish has been caught until now (end of 1998).

During the last years, there were still some records of individual *Acipenser sturio*: 1992 in the Gulf of Cadiz near the estuary of the Guadalquivir River, Spain (Elvira and Almodovar, 1993), 1993 in the North Sea basin, Netherlands (Timmermanns and Melchers, 1994), and 1996 in the Baltic Sea near Saaremaa Island, Estonia.

2.3 Habitat

All available data indicate that during its stay in the sea, *Acipenser sturio* is a littoral species limited mainly to estuaries with muddy bottoms (Holcik et al., 1989). Younger specimens (50 to 100 cm in TL) usually stay within a radius of more than 100 km of the river mouth, and in the sea the majority are caught at depths of 20 to 50 m. Rarely, they are taken as deep as 70 m at salinities below 32 ‰. Large specimens occur at depths between 100 to 200 m in the Adriatic Sea (Holcik et al., 1989). Most young of the year sturgeons stay in rivers close to the spawning grounds where they hatched, but some of them move downstream to the estuaries during their first summer (Magnin, 1963; Kinzelbach, 1987; Holcik et al., 1989).

2.4 Migrations

Acipenser sturio is a typical anadromous species (Holcik et al., 1989) (definition see on p. 12: 2.4). Mature individuals leave the sea and enter freshwater to spawn. The time for the spawning migration varies with the location of the rivers and the temperature. Usually, the sturgeons enter the rivers from January to October with a peak from the beginning of April to the end of May during periods of high water (so-called spring race). There are also some historical records (Kinzelbach, 1987) of sturgeons in the Rhine River which migrated upstream in autumn (August, September, October). These fishes probably stayed in the river during the winter (so-called winter race) and spawned during spring of the following year.

The distance of the spawning migration seems to be positively correlated with a water discharge or water level, as indicated by Mohr (1952), Klausewitz (1974) and several authors (compiled in Holcik et al., 1989), and a distance of 1,000 km or more may be covered during years of high water. Spent fishes immediately return to sea. The young sturgeons usually stay for a period of 2-4 years in the rivers, but there are also some juveniles that move downstream to the estuary in the same year they hatched.

Acipenser sturio also undertakes long-distance migrations (feeding migrations) during its

stay in the sea: Ninua (1976) indicates that Common sturgeons may migrate as far as 1,000 km from their spawning sites or even more in the open sea. Although the migration routes of the species are not well documented, it seems most probable that the species is cyclically many national boundaries throughout its range area (see 2.1 and 5.) when migrating in the open sea.

Since 1981, the French Ministry for Agriculture has been organising sturgeon studies at the Atlantic coast (Gironde River). The mark / recapture experiments have shown that a small portion (< 10%) of the Common sturgeon migrates into the North Sea and to the estuary of the Elbe River (Debus, 1993) - a fact that indicates the long-distance migration of the still existing spawning population of *Acipenser sturio*.

3. Threat data

3.1 Direct threat of the population

Almost all populations of *Acipenser sturio* have been extirpated due to overfishing (at the beginning of this century), as well as damming of all spawning rivers, gravel extraction and pollution.

One major threat to the still existing small populations is presumably the high level of pollution in all Eurasian watersheds, including the Atlantic Ocean, North Sea and Black Sea basin. However, the recent direct impact of environmental toxins on *Acipenser sturio* have not been studied.

Moreover, poaching may still threaten the small populations of the Common sturgeon. Although the species is formally protected, there is no real control on its catch in international waters (Elvira and Gessner, 1996). Hence, immature and juvenile sturgeon may still be caught in the open sea. Only a full protection of the species throughout its entire range and a corresponding control will guarantee the survival of the Common sturgeon.

3.2 Habitat destruction

Acipenser sturio which is reproducing in freshwater has been deprived of almost all natural spawning grounds in the Eurasian rivers where the fish has been common in former times.

The agricultural development in all range states at the beginning of this century, which included deforestation along riverbanks, changed the flow of the rivers and destroyed fish spawning grounds. The extraction of sand, gravel and rocks from the spawning sites in the river Danube, Guadalquivir and Garonne was particularly devastating (Debus, 1997). This activity also reduced the benthic biomass which is the main food resource of the sturgeon.

With the beginning industrialisation, almost all river system in Europe have been regulated by dams and other hydrotechnical facilities which prevented the anadromous fish from reaching their spawning grounds. The extent of the loss of this critical habitat was so enormous, that the populations of *Acipenser sturio* dramatically declined since the beginning of this century.

Dams also prevent the downstream migration of sturgeons and the passage through the hydroelectric power turbines is usually lethal for the juveniles. Furthermore, the flow regulations in the spawning rivers caused considerable fluctuations in the water level. As a result, the spawning sites dried out from time to time and the spawning success of the species has been further reduced.

3.3 Indirect threat

Indirect threats to the species are not described in recent studies. It is very likely that the high pollution rate in all watersheds throughout the entire range of the sturgeon also affects its natural reproduction as it is described for many other sturgeons (see for example 3.3 p. 16). However, the impact on the rare *Acipenser sturio* has not been studied and the extent of degeneration is unknown.

3.4 Threat connected especially with migrations

The survival of *Acipenser sturio* is strongly dependant on the success of the spawning migration of mature individuals and the subsequent spawning success. During its life cycle in the sea, the species migrates long distances and crosses several national boundaries. Although the Common sturgeon is protected in all range states, there is no real control on its catch in international waters. Hence, immature and juvenile sturgeon may still be caught in the open sea and are threatened due to their migration pattern.

3.5 National and international utilization

The Common sturgeon was among the most valuable fishes. Its flesh is highly palatable and appreciated. The eggs from ripe females were used for the production of caviar, and its gelatines were utilized in the food industry (Holcik et al., 1989). The collagen of the gas bladder has been used in the optic industry („isinglass,,).

Fishery. *Acipenser sturio* has been subject to a large fishery and was caught in almost all known former range states. At the end of the 19th century, the Common sturgeon was among the most widespread sturgeons and had a high commercial importance, especially in Europe. Holcik et al. (1989) estimated the total world catch of the species at 150 to 200 metric tons at the beginning of this century. This amount would approximately correspond to 14,000 to 16,000 fishes. During the following 50 years, the catches from the North and especially the Baltic watersheds dropped to a few fishes, and *Acipenser sturio* became a very rare fish everywhere. Since the 1920s, the fish lost its commercial importance in almost all range states. Shortly after World War II, the only commercially important population, providing a mean annual catch of about 50 tons of fish and 3 tons of caviar, remained in the Gironde River (Magnin, 1963). While in 1947 an amount of approximately 4,000 individuals has been caught in the Gironde, the catch declined to 195 specimens in 1963 and was 0 in 1980. Finally, the catch of *Acipenser sturio* in France has been banned in 1984 (Rochard et al., 1990).

Nowadays, the world population of *Acipenser sturio* is so depleted that the species is very rare throughout its entire range. There is no doubt that the main reason for the catastrophic decline of this species is overfishing, which already had begun at the end of the last century and is closely linked with the establishment of the trawling fishery in the sea (Holcik et al., 1989).

4. Protection status and needs

4.1 National protection status

Acipenser sturio is listed in the Red Data Books of France, Germany, Poland, the Russian Federation, and Spain.

4.2 International protection status

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

The species is listed in Appendix III of the Bern Convention.

Acipenser sturio is listed in the Annexes II and IV of the EC Habitats Directive 92/43/EEC).

4.3 Additional protection needs

Acipenser sturio is one of the most severely threatened of European fishes and virtually the only hope of saving it may rest with conservation projects. Since the sturgeon is almost extinct throughout its entire range, only the survival in captivity and the artificial propagation is thought to help the conservation of this unique species.

In France, experts have been successful with a restocking programme of *Acipenser sturio* in the Gironde basin (Williot et al., 1997).

In Germany, a Society to Save the Sturgeon has been founded in 1994 (Elvira and Gessner, 1996). A restocking programme for the species in the Oder River where it has formerly been abundant is planned with specimens from both the Gironde and the Rioni population. However, until the end of 1998, scientists have been unable to catch mature breeders from the Rioni River in Georgia.

The last natural spawning populations of *Acipenser sturio* need special protection. While in France a conservation programme for the species exists and restocking is carried out, the situation at the Rioni in Georgia (which became an independent state after the dissolution of the USSR in 1991) is very unfavourable for the sturgeon because of the poverty of the region and the lack of financial support for nature conservation. Maitland (1995) already pointed out that the prospects for the future of the species look poor and as much as support as possible should be given to conservation projects by countries in Europe and throughout the former range of the sturgeon.

Detailed recommendations for the conservation of the Eurasian sturgeon species - worked out during the 1st 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 **spawning populations** of *Acipenser sturio* are **France** and **Georgia**.

Since the adult Common sturgeon migrates long distances in the sea, possible additional Range

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States are all States bordering the North-eastern Atlantic Ocean, the North and Baltic Seas, the Mediterranean Sea and Pontic region, including the Ligurian, Tyrrhenian, Adriatic, Ionian, North-Aegean, Marmara, and Black Seas. However, there is no recent record of the species in any of the states besides the latest record of the sturgeon in the Baltic Sea in Estonia in 1996.

The following Range states of the species have been recorded:

Albania (EN?); Algeria (Ex?), Belgium (Ex?), Croatia (Ex?), Estonia (Ex?), Finland (Ex?), Germany (Ex?), Greece (Ex?), Hungary (Ex?), Iceland (Ex?), Ireland (Ex?), Italy (Ex?), Morocco (Ex?), Netherlands (EN), Norway (Ex?), Poland (Ex?), Portugal (Ex?), Romania (Ex?), Russian Federation (Ex?), Slovenia (Ex?), Spain (EN), Sweden (Ex?), Switzerland (Ex?), Turkey (Ex? or EN), Ukraine (Ex?), United Kingdom (EN).

According to FAO-data the major fishing countries (reporting over 500,000 metric tons for 1996) in the North East Atlantic and thus potential Range States are Norway, Iceland, Denmark, U.K. and the Russian Federation which all are countries bordering the area.

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:

- **Albania** manifests its interest in the proposal and wishes to be involved in the realisation.
- **Algeria** has not submitted any comments until the end of May 1999.
- **Belgium** has not submitted any comments until the end of May 1999.
- **Croatia** gives its full support to the proposal.
- **Estonia** has not submitted any comments until the end of May 1999.
- **Finland** has not submitted any comments until the end of May 1999.
- **France** shares the position of the proposal (pers. communication to the German Embassy).
- **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.
- **Greece** informs that there have been only sporadically reported sturgeon species in the Greek territory.
- **Hungary** considering the conservation status of these species supports the proposal. Hungary seconds the inclusion of the 18 species of Acipenseriformes in Appendix II, excluding the sterlet (*Acipenser ruthenus*), the status of the population of which does not give reason for major concern in the country.
- **Iceland** has not submitted any comments until the end of May 1999.
- **Ireland** has not submitted any comments until the end of May 1999.
- **Italy** supports the proposal (verbal communication in the EC Habitat Committee, 28.04.1999).
- **Morocco** has not submitted any comments until the end of May 1999.
- **Netherlands** has not submitted any comments until the end of May 1999.

- **Norway** has not submitted any comments until the end of May 1999.
- **Poland** has not submitted any comments until the end of May 1999.
- **Portugal** has not submitted any comments until the end of May 1999.
- **Romania** supports the proposal. Considering the population status, the migration tendencies and areas of the six sturgeon species living in Romania as well as in 4 other Range states, the proposal to list these species in Appendix II is justified. The inclusion in Appendix II of CMS creates the basis for the realisation of international conservation programmes in the Range states of the lower Danube and the Black 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.
- **Slovenia** supports the proposal.
- **Spain** has not submitted any comments until the end of May 1999.
- **Sweden** has not submitted any comments until the end of May 1999.
- **Switzerland** has not submitted any comments until the end of May 1999.
- **Turkey** has not submitted any comments until the end of May 1999.
- **Ukraine** has not submitted any comments until the end of May 1999.
- **United Kingdom** has not submitted any comments until the end of May 1999.

7. Additional Remarks

8. References

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