

**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 ruthenus* 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 ruthenus</i> Linnaeus, 1758 Subpopulation of the Danube River
1.5	Common names	Croat: Keèiga English: Sterlet Finnish: Sterletti French: German: Sterlet Hungarian: kecsege Polish: Sterlet a. czeczuga Russian: Sterlyad' Slovak: Jeseter malý Slovene: Keèiga Spanish: Sterlet

**2. Biological data**

**2.1 Distribution**

The sterlet is a Eurasian freshwater species inhabiting rivers flowing into the Caspian, Black, Azov, Baltic, White, Barents and Kara Seas (Sokolov and Vasil'ev, 1989). This proposal concentrates on the Danubian population of *Acipenser ruthenus*, since this population is the only „migratory,, population in the sense of the Convention.

The Danube, which is the second longest river in Europe with a total length of 2,857 km, is currently divided into three main regions:

- the upper Danube from the source to Vienna (approx. 890 km river length) flowing through Germany and Austria
- the middle Danube, shared by Romania, Serbia, Croatia, Hungary and Slovakia, running from Vienna to Iron Gates Dam I (approx. 933 km river length), and
- the lower Danube extending from the mouth of the Cerna River in the Iron Gates region to the estuary, shared by Ukraine, Moldova, Romania, Bulgaria and Serbia (approx. 942 km length).

Historically, the sterlet was abundant throughout the whole Danube River. It regularly

occurred in the upper region up to Vienna, frequently to Linz, and sometimes to Passau, Regensburg and even up to Ulm (Fitzinger and Heckel 1835, Heckel and Kner, 1858, Siebold, 1863). It has been very abundant near Bratislava (Kornhuber, 1863) and occurred in some tributaries of the upper Danube. The sterlet was also present in the lower course of the Danube and the tributaries Prut, Olt, Arges, Siret and Jiul (Bânârescu, 1964).

At present, the sterlet has a very limited distribution in the middle and upper Danube (Hensel and Holcik, 1997; Bacalbasa-Dobrovici, 1997). The species is extirpated from the German section of the Danube (Reichenbach-Klinke, 1968, Balon et al., 1986) and only rarely encountered in the Austrian section (Jungwirth, 1975; Schiemer and Spindler, 1989). It greatly diminished in the Slovakian section: it disappeared from the Hron River, but still occurs in the mouth of the Váh River as well as in the lower course of the Morava. In the Hungarian waters *Acipenser ruthenus* is still present in the Danube proper and its tributary Tisza. In the Serbian part, the sterlet is most abundant in the Danube near Belgrade and in the upstream section near Vojvodina as well as in the lower stretches of the Sava and Tisza (Jankovic, 1995). The continuing presence of sterlets was also recorded in the Rába, Drava, Sava, Mura and Kupa (Kolpa) Rivers (Hensel and Holcik, 1997).

In Slovenia, the species has always been rare, but accidental catches of specimens which migrate from the lower parts of the rivers in the Danube basin (Drava, Mura, Sava and Kolpa) to the Slovenian section are still possible (R. Bolješič. J. Vidic – personal communication).

## 2.2 Population

The status of the various populations of *Acipenser ruthenus* is insufficiently known and there is no information about the total size of the population.

In the Danube River, the populations are currently restricted to the middle and upper reaches. The species is extirpated from the German section of the Danube River, endangered in the Austrian section, it greatly diminished in the Slovakian river section and has practically disappeared from the lower Danube (Jancovic, 1995; Birstein, 1996; Bacalbasa-Dobrovici, 1997; Hensel and Holcik, 1997).

The IUCN (1996) classifies the status of the Danube River population as Vulnerable.

Several authors (Sokolov and Vasil'ev, 1989; Birstein, 1993; Jankovic, 1995) indicate a sharp decline of the size of almost all populations of *Acipenser ruthenus*. In the Danube river, the sterlet population inhabiting the lower river segment declined drastically since the construction of the Iron Gate II Dam in 1984 (Jancovic, 1995; Birstein, 1996; Bacalbasa-Dobrovici, 1997). Sterlet inhabiting the Upper and Middle Danube decreased in the 1970ies due to pollution, but from the beginning of the 1980ies its abundance increased again as a result of significant improvement of the water quality. Specimens again entered the mouth of the Morava (March river) (Holcik, 1995). However, the Gabèikovo River Barrage System, constructed and put in operation on 1992, resulted in a substantial decline of the sterlet population in the Slovak and Hungarian river segment (J. Holcik – personal communication).

A further decline of the species is predicted due to bad environmental conditions and further destruction of the habitat.

### 2.3 Habitat

The sterlet is a freshwater fish that inhabits the lowland and foothill zones of rivers (Sokolov and Vasil'ev, 1989). It usually stays in the current in deep depressions in the riverbed over stony, gravely or sandy bottoms. Small individuals are often encountered in sandy shallows. In reservoirs, the sterlets usually stay at the upstream end where there is a current and the conditions are similar to those in rivers.

### 2.4 Migrations

The sterlet is a freshwater resident and does not undertake anadromous migrations like many other sturgeon species. However, migrations of the species in the Danube are known and tagging (Unger, 1953; Ristic, 1970 in Hensel and Holcik, 1997) revealed maximum migration distances of 322 km. The migrations may be for feeding or spawning purposes. Thus, the sterlet is likely to travel in the river sections between the dams, crossing more or less cyclically the boundaries of the Danubian range states.

## 3. **Threat data**

### 3.1 Direct threat of the population

*Acipenser ruthenus* is threatened by a loss of suitable habitat due to dam constructions on almost all river sections and tributaries throughout its range (Hensel and Holcik, 1997). Thirty-five dams have been constructed on the upper Danube alone (Bacalbasa-Dobrovici, 1997). The middle Danube was cut off from the lower Danube by construction of the Iron Gates Dam I, built in 1970. In 1984, the lower Danube was divided by the Iron Gates Dam II, located 80 km downstream from Iron Gates Dam I (see also 3.2 Habitat destruction).

The high pollution in the Danube River (Bacalbasa-Dobrovici, 1997) certainly affects the health of sturgeons. However, there are no recent investigations concerning the impact of environmental contaminant on the sterlet population in the Danube.

### 3.2 Habitat destruction

The damming of almost all rivers throughout the species range (see 3.1) which started in the 1930s led to a sharp decline in critical habitat such as spawning grounds. The flood plains of the Danube changed drastically when dikes were built. Historically, the lower Danube flood plain included areas adjacent to the river (573,000 ha) and the delta (524,000 ha). At present, about 85% of the flood plains have been diked (Bacalbasa-Dobrovici, 1997). About 300 reservoirs in the Danube basin were formed by damming. These lakes affect water level and velocity in the Danube.

The spawning success of this freshwater resident sturgeon species depends directly on the water level which is drastically influenced by the operation of the hydroelectric power systems. Especially in the spring season, when spawning occurs, the water level of many of the rivers was artificially lowered by such operations and led to a mass death of sterlet eggs and fingerlings along the river bank (Jankovic, 1995).

The inappropriate fishing method of bottom trawling which is used in some rivers for the

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harvest of *Acipenser ruthenus* and other ground living fish further destroys the habitat of the species and threatens its survival.

**3.3 Indirect threat**

Changes in the water regimes, especially a decline in the flow velocity, also led to a degeneration of the reproductive system of *Acipenser ruthenus* (Lukin et al., 1981). However, the extent of degeneration in the whole population is not reported.

Although the water pollution by heavy metals and pesticides in the Danube is very high (Bacalbasa-Dobrovici, 1997), the impact on the reproduction of sturgeons has not been investigated so far.

**3.4 Threat connected especially with migrations**

Since the present migration routes of *Acipenser ruthenus* in the Danube are not described in recent studies, there is no detailed information about the threat connected especially with migration. However, it may be presumed that there is no common fishery regulation between the range states and the fishery for the sterlet is still continued by several states although the population status gives reason for concern. Despite the fact that the sterlet is not anadromous but a freshwater resident, it has been proved that the fish is migrating more than 300 km (see 2.4). Hence, the fish most probably cross the national boundaries of the range states and populations are not restricted to constant areas belonging to one state only. More scientific knowledge about the migrations of *Acipenser ruthenus* is required as well as an international concerted action to save the sterlet in the Danube River.

**3.5 National and international utilization**

The sterlet was always of small commercial interest as compared to other sturgeon species. Sterlets are usually marketed alive, and rarely refrigerated, frozen or smoked (Sokolov and Vasil'ev, 1989). According to Josupeit (1994) the fish does not constitute a substantial source of caviar. It is not clear whether the fish is only subject to a national market or if a part of the products (possibly frozen or smoked flesh) is exported.

**Fishery.** *Acipenser ruthenus* is caught in numerous different ways: in various kind of nets, fish traps, willow baskets (called "vandams") and with barbed lances and bottom trawls (Sokolov and Vasil'ev). According to Sokolov and Vasil'ev (1989) the size of the catch was considerable in the past and the largest amount of *Acipenser ruthenus* was caught in the Volga River system (Russian Federation). From 1935 to 1939, the world-wide sterlet catch amounted to 750-800 metric tons (of which about 700 metric tons were caught in the USSR). Nowadays, the fishery for the sterlet is banned in most of the water bodies in the former USSR, and only a limited number of males is caught to produce a commercially important hybrid with females of *Huso huso* (Sokolov and Vasil'ev, 1989).

Most of the sterlets captured recently come from the Danube River system. From 1958 through 1981, the sterlet catch in these waters ranged from 117 metric tons in 1963 to 36 metric tons in 1979 and averaged 63.5 metric tons annually. The catch was greatest in the former Yugoslavia and averaged 57.5% of the total catch, the catch in Bulgaria accounted for 21.8%, while Romania accounted for 10.5%, Hungary for 3.5% and the former

Czechoslovakia for 0.5%. Actual data on the catch of *Acipenser ruthenus* are largely unavailable. Official FAO statistics, that do not distinguish between sturgeon species, reveal that the total catch of sturgeons in 1994 was 10 metric tons in Bulgaria and 8 metric tons in Romania, the other countries bordering the Danube are not recorded. Jankovic (1995) reports that the sterlet catch in the former Yugoslavian part of the Danube averaged 4.7 metric tons within the period from 1984-1989. Birstein (1996) and Bacalbasa-Dobrovici (1997) indicate that *Acipenser ruthenus* has practically disappeared from the lower Danube and that there is currently no commercial catch of the species in this river section. However, the domestic catch of the sterlet in Hungary in 1997 amounted 14.2 metric tons, accounting for 0.2% of the total catch in the Hungarian fishery (A. Demeter – personal communication).

**Artificial propagation.** Artificial propagation of *Acipenser ruthenus* has been performed mainly by Hungary during the 1970s till the 1980s when the repopulation work ended (Tamás Gulyás, SSC, pers. communication). In Slovakia the artificial propagation and stocking of juveniles into the Danube is realised since 1988 ( J. Holcik – personal communication).

**Fish farming.** *Acipenser ruthenus* is reared in aquaculture in the Russian Federation, the Ukraine, Hungary and Germany (Anonymous, 1994). Williot et al. (1993) estimated that the total production of sterlet in Germany was about 5 metric tons in 1993 and that the installed capacity of production is 10 metric tons. For the remaining states there are no data available. Evidently, this culturing of the species is mainly conducted for the production of meat for domestic markets.

A hybrid between *Huso huso* and *Acipenser ruthenus* called "bester" which is fast growing and produces fertile descendants is also subject to aquaculture in European countries. The total size of the production of "bester" is not given in the available statistics.

#### 4. Protection status and needs

##### 4.1 National protection status

In **Hungary**, the sterlet population is partially protected including a minimum size of 40 cm and a closed season during spawning from 1<sup>st</sup> of March till 1<sup>st</sup> of July.

The conservation status of *Acipenser ruthenus* in **Slovakia** is Endangered but in the proposal of a new law for protected species of Slovakia, *Acipenser ruthenus* is not included (J. Cibula, Slovak Agency of the Environment, Bratislava, pers. communication).

In **Slovenia**, the sterlet is fully protected by the Decree On the Protection of Endangered Animal Species (Uredba o zavarovanju ogrozenih zivalskih vrst – Ur. I. RS 57/93) since 1993. The legislative protection includes all stages of development, live or dead specimens as well as parts or derivatives thereof. It is also prohibited to sell or mediate at selling, to give as a present, buy, export or take abroad the specimens of protected species or parts and products thereof. (R. Boljesic, J. Vidic – personal communication).

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There is no available information about the legal status of *Acipenser ruthenus* in the remaining range states.

**4.2 International protection status**

*Acipenser ruthenus* is listed in Appendix III of the Bern Convention (protected fauna).

*Acipenser ruthenus* 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**

According to Tamás Gulyás (SSC, pers. communication) an artificial restocking programme for the species is strongly needed in order to guarantee the survival of *Acipenser ruthenus* in the Danube.

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 **Danubian population** of *Acipenser ruthenus* are

- Austria (Ex?)
- Bulgaria
- Croatia
- Germany (Ex)
- Hungary
- Moldova
- Romania
- Serbia
- Slovenia
- Slovakia and
- Ukraine.

**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:

- **Austria** mentions that it is not a Party to CMS. However, Austria supports the proposal and its entire contents.
- **Bulgaria** has not submitted any comments until the end of May 1999.
- **Croatia** gives its full support to the proposal.
- **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.

- **Moldova** 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.
- **Slovenia** supports the proposal.
- **Slovakia** submitted “only” a list of very appreciated scientific comments which are now integrated in the text.
- **Ukraine** has not submitted any comments until the end of May 1999.

## 7. Additional Remarks

## 8. References

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