CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA

Current Trends in the *Huso huso* fishery in the Caspian Sea and the Beluga Catch and Export Quotas for 2003

1. This document was prepared by the Secretariat and is based on information provided by the Caspian littoral States (i.e. Azerbaijan, Islamic Republic of Iran, Kazakhstan, and the Russian Federation).

2. CITES Resolution Conf. 12.7 on conservation of and trade in sturgeons and paddlefish, adopted at the 12th meeting of the Conference of the Parties (Santiago, 2002), recommends, with regard to catch and export quotas for Acipenseriformes to be established in 2003, that Parties not accept the import of specimens of Acipenseriformes species from stocks shared between different range States unless, *inter alia*, the Secretariat is satisfied that catch and export quotas are agreed by all relevant range States, on the basis of information provided to it on the status of stocks of the species concerned. The export quotas must be derived from catch quotas agreed amongst States that provide habitat for the same stock, and the catch quotas must be based on an appropriate regional conservation strategy and monitoring regime for the species concerned.

   This document describes the basis on which the Secretariat 'is satisfied' that the requirements of Resolution Conf. 12.7 have been met for specimens of *Huso huso* from the Caspian Sea.

Huso huso management in the Caspian Sea

3. The five range States of the Caspian Sea have made strong commitments to support cooperative research on a number of important issues such as stock assessment, monitoring, the genetic structure of stocks, and other issues highlighted in the recommendations of the Animals Committee. These recommendations are detailed in a document presented to the CITES Standing Committee (SC47 Doc. 11) and available on the CITES web site (www.CITES.org). Priority actions include i) the development of an internationally acceptable stock assessment and monitoring system; and ii) the development of a transparent, robust and internationally acceptable method for deriving catch and export quotas from stock monitoring data.

4. All of the Caspian States have been formally participating, since March 2002, in the Commission on Aquatic Bioresources of the Caspian Sea, which serves as the coordinating body for sturgeon management and monitoring in the Caspian Sea. This body represents the interests of the five Caspian littoral States. Based on the scientific data presented by the various States, the Commission sets the catch and export quotas for the littoral States for the coming year and, in compliance with Resolution Conf. 12.7 [and in 2001 and 2002 in compliance with Decision 11.58], communicates these agreed quotas to the CITES Secretariat.

5. The 2003 catch and export quotas for *Huso huso* were discussed in the Commission on Aquatic Bioresources of the Caspian Sea at their 18th meeting in Baku (8-12 December 2002) and at various meetings during 2003. The Commission advised the Secretariat of the quotas and these were finalized in September 2003.

6. The status of the *Huso huso* population in the northern part of the Caspian Sea is monitored through trawl surveys in the Caspian Sea and data collected on the spawning segment of the population that migrates into the main rivers of the Caspian Basin (mainly the Volga and Ural Rivers). The KaspNIRKh institute, based in Astrakhan in the Russian Federation, has conducted research and observations in the northern and middle part of the Caspian Sea basin since 1962. The Islamic Republic of Iran, which focuses on the southern part of the Caspian Sea, uses a catch-per-unit-effort (CPUE) stock assessment within an adaptive management approach to monitor *Huso huso* and determine total allowable catch limits. Both countries have a considerable time series of data on sturgeon stocks and catches, and have used their methods to adjust total allowable catches (TACs) upwards or downwards as circumstances require. The Caspian littoral States are aware that the two methods are complementary but not directly compatible, and are working towards the use of a standard method applicable to all five countries. This work is being conducted in collaboration with FAO.

7. The estimated total *Huso huso* population in the Northern and Middle Caspian in 2002 is 11.6 million specimens, based on sea trawl surveys together with biomass estimations of the spawning stocks in the rivers.

Table 1: Estimated numbers of *Huso huso* in the Caspian Sea and percentage of adults, based on summer trawl surveys*

Year	1998	1999	2000	2001	2002
Numbers	7.6 mil.	9.3 mil.	5 mil.**	9.3 mil.	11.6 mil.
% adults***	0 - 17.4%	8.7 - 10.0%	5.5%**	14.8 - 22.0%	20.6 - 42.9%

**Sea surveys are conducted in the Caspian in spring, summer and autumn, but only the summer trawls are used to determine the annual status of the* Huso huso *stocks, as during this time the species does not migrate. Summer trawls provide the most reliable estimates of population size and excludes double recording.*

***Northern Caspian Sea only*

****The first percentage refers to the Northern Caspian Sea; the second percentage to the Middle and Southern Caspian Sea.*

The proportion of *Huso huso* constituting the reproductively mature commercial stock has been steadily increasing in recent years (Table 1). In 1999, the proportion of adult specimens in the Northern Caspian Sea stood at 8.7%.; in 2001 the proportion had increased to 14.8%; and in 2002 it reached 20.6%. Significantly, the proportion of adult *Huso huso* catches at the feeding grounds of the northern part of the sea has more than doubled since 1999.

8. Replenishment of stocks of *Huso huso* occurs through natural spawning and through releases of hatchery-reared specimens. Some natural spawning

replenishment is still occurring for the *Huso huso* population in the lower Volga River (c. 3% annually) and particularly in the Ural River, which remains pristine and productive and the source of most of the natural spawning replenishment for *Huso huso* in the Caspian Sea. The proportion of adult individuals is reported to increase annually, and the number of spawning individuals entering the main rivers of the Caspian Sea is stable and at higher levels than in previous years. For example, the number of beluga spawners that are entering the major Caspian rivers each year has increased in the 1998-2002 five-year period (when some 28,000 spawning individuals entered the rivers) compared to the five-year period of 1961-65, which predates the time of the dramatic decline of the fishery (when only 26,000 spawning individuals entered the rivers). The facts are that the number of spawning belugas is being maintained at higher figures than in previous years, under CITES regulation.

However, the *Huso huso* fishery in the Caspian Sea is maintained largely through artificial reproduction programs that have been operating since 1959. For the period from 1959-2002, some 515 million fingerlings were hatcheries-reared and released into the Caspian Sea. More recently, over 11 million *Huso huso* fingerlings have been released by the littoral States into the Caspian Sea in 2002. Currently the share of hatchery-produced *Huso huso* in commercial catches in the Volga is estimated to exceed 97%, indicating that the beluga fishery in the Caspian is maintained largely through a stock enhancement programme.

Table 2: Effectiveness of *Huso huso* natural reproduction in the lower Volga River

Year-classes	Abundance of larvae (million specimens)	Yield to fishery of year-classes (tons)
1997	0.13	10
1998	1.28	99
1999	1.18	91
2000	1.92	148
2001	2.08	160
2002	2.00	154

The *Huso huso* fingerling release program is now more effective and has been increasing in output and efficiency since the trade has been regulated under CITES (see Table 2). The release weight of individual fingerlings has steadily increased over the years, from a low average of 3.58 grams in 1997 to a high average weight of 5.58 grams in 2000; the survival rate of fingerlings increases relative to its release weight. More resources are required to raise fingerlings to the higher release weights and maintain them, and correspondingly fewer fingerlings are released each year. However, the number that survives to breeding age is of greater relevance than the total number of releases.

The Islamic republic of Iran and the Russian Federation have striven to increase the survival rate of released fingerlings, mainly by increasing the release weight. Whilst these experiments have been proceeding (1995-2001 in Iran; 1999/2000 in Russia), the total number of released fingerlings declined in these countries. These declines relate to the capacity of the hatcheries to produce and maintain larger-sized fingerlings. Hatcheries are now consistently releasing fingerlings weighing in excess of 5 grams and the number of fingerlings released is steadily increasing each year (Table 3).

Table 3: Numbers of hatchery raised *Huso huso* fingerlings released per year

Year	Azerbaijan	Iran	Kazakhstan	Russian Federation	Totals
1998	--	687 400	300 000	11 900 000	12,587,700
1999	162 000	406 100	516 000	7 780 000	8,864,100
2000	357 000	1 900 919	1 860 000	2 800 000	6,917,919
2001	274 000	700 000	1 684 000	5 240 000	7,898,000
2002	163 000	2 403 794	2 016 000	6 600 000	11,182,794
2003 (proposed)	c. 1 500 000	c. 4 000 000	c. 2 300 000	c. 8 000 000	c. 14,300,000

9. In 2001, some 5,700 spawning individuals of *Huso huso* entered the major Caspian Rivers, and in 2002 the estimate stood at 5,524 individuals. In 2001, some 1,000 individuals were caught in the rivers (i.e. approx. 19% of the spawning population was harvested). In 2002 this was 1,100 individuals (approx. 20%). The number of spawners entering the rivers each year is only a small proportion of the actual population of mature individuals that exist in the Caspian Sea: only 0.5% to 2% of the population of mature fish in the sea enter the rivers to spawn each year.

Table 4: Numbers of *Huso huso* spawners entering the main Caspian Sea tributary rivers

Year	Kura River (Azerbaijan)	Ural River (Kazakhstan)	Volga River (Russian Federation)	Totals
1998	290	3 100	2 700	6 090
1999	472	2 100	2 700	5 272
2000	55	2 500	2 800	5 355
2001	135	2 700	2 860	5 695

2002	124	2 500	2 900	5 524

Table 5: Status of *Huso huso* populations in the Caspian Sea and levels of harvest in the tributary rivers.

Year	Population estimates (mil. specimens)	Number of adults in the sea**	Number of spawners entering rivers	Number of spawners harvested	% of harvested spawners held for the hatcheries
1998	7.6	0	6 090	2 118	41.1
1999	9.3	809 000	5 272	1 454	72.3
2000	5.0*	275 000*	5 355	1 182	48.4
2001	9.3	1 376 400	5 695	1 059	69.1
2002	11.6	2 389 600	5 524	1 121	61.9

**Northern Caspian Sea only*

***The number of adults is based on the first percentage of the adult figure range provided in Table 1*

10. The data presented in Tables 4 and 5 above are conservative, since they do not include the figures for Iran. These figures are presented in Table 6.

Table 6: Numbers of spawners taken by the Islam Republic of Iran, and numbers taken for artificial breeding programmes for hatcheries in the country.

Year	Spawners taken	Spawners taken for hatchery	% of harvested spawners taken for hatchery
1998	1 617	49	3.03
1999	1 387	40	2.88
2000	1 209	61	5.05
2001	1 279	89	6.96
2002	830	75	9.04
2003	520	90	17.31

11 In recent years there has been a stronger commitment from the Caspian range States to the conservation management of their beluga sturgeon stocks. A greater proportion of harvested beluga eggs are being sent to the hatcheries for

hatchery production programmes (see Table 7). Although harvested egg figures for the hatcheries in Iran are not available, an increased percentage of harvested stock is also being used for hatchery production in Iran (see Table 6).

The beluga fingerling release programmes are now more effective and has been growing steadily under CITES regulation. The average release weight of fingerlings has increased each year, from a low of 3.58 grams in 1997 to a high of 5.58 grams in year 2000. The survival rate of fingerlings increases as their release weight increases. Importantly, the release effectiveness (i.e. the proportion of released fingerlings that survive to reproductive age) has been improving steadily in the Caspian Sea.

Table 7: *Huso huso* catch [kg], and amounts of eggs for caviar export and for hatchery [in kg]; % of eggs going into hatchery enhancement programmes

Year	Azerbaijan catch caviar/hatchery	Iran catch caviar/hatchery	Kazakhstan catch caviar/hatchery	Russian Federation catch caviar/hatchery	Total eggs for hatchery [kg]*	*Proportion of eggs for hatchery (as a % of commercial caviar)*
1998		139 060 5 000 /	/ 22	71 000 5000 / 1 700	**	**
1999	13 000 434 / 50	117 070 3 000 /	/ 68	50 000 3 000 / 1 100	**	**
2000	10 850 700 / 60	104 020 3 000 /	56 000 3 600 / 142	45 000 2 500 / 400	608	*13*
2001	6 600 520 / 56	93 900 3 950 /	55 800 4 200 / 102	41 900 2 300 / 700	858	*23*
2002	5 500 530 / 45	85 060 2 950 /	51 300 5 140 / 120	35 000 1 500 / 900	1 065	*37*
2003	7 200 400 / c.212	53 200 2 130 /	55 000 4 720 / 160	40 000 1 600 / 1 240	1 612	*44*

**since the amount of eggs (in kg) has not been provided for Iran, these figures do not include the amount of eggs used by Iran in their hatchery production programme.*

*** Figures cannot be calculated since data is not available for some countries*

Conclusions

12. Measures approved by the CITES Conference of the Parties, and actively implemented by the Caspian littoral States, are aimed at ensuring that basin-wide management measures in the Caspian Sea are in place, non-detrimental trade in *Huso huso* and other sturgeons can occur, and illegal trade is minimized. The Secretariat believes the current regulatory measures established by the Parties, with the support and endorsement of the Caspian littoral States, are sufficient to

ensure long-term recovery of the species and the fishery.

13. Catch and export quotas for *Huso huso* for 2003 have been agreed by all relevant range States, on the basis of information provided to the Secretariat on the status of stocks.

14. The Secretariat is therefore satisfied that the requirements of Resolution Conf. 12.7 are met, and has published the 2003 quotas for *Huso huso* (and other Caspian Sea Acipenseriformes) from the Caspian Sea on its website on 5 September 2003 (refer Annex 1 for summary figures).

ANNEX 1

Caspian sturgeon catch and caviar export quotas 2001-2003
(in kilograms)

Azerbaijan	2001		2002		**2003**	
	Catch	Caviar	Catch	Caviar	**Catch**	**Caviar**
Beluga	6 400	520	5 500	530	**7 200**	**400**
Russian Sturgeon	37 700	3 450	30 700	2 770	**46 390**	**4 200**
Stellate Sturgeon	30 400	2 840	26 300	2 470	**51 000**	**4 500**
Ship Sturgeon	0	0	0	0	**0**	**0**

Islamic Rep. of Iran	2001		2002		**2003**	
	Catch	Caviar	Catch	Caviar	**Catch**	**Caviar**
Beluga	93 900	3 950	85 555	2 950	**53 200**	**2 130**
Russian Sturgeon	27 300	3 460	20 475	2 100	**18 200**	**1 950**
Stellate Sturgeon	123 000	23 400	96 375	14 827	**65 800**	**11 700**
Ship Sturgeon	14 700	1 000	15 963	0	**13 000**	**0**
Persian Sturgeon	349 000	51 000	467 422	55 890	**526 200**	**63 000**

Kazakhstan	2001		2002		**2003**	
	Catch	Caviar	Catch	Caviar	**Catch**	**Caviar**
Beluga	55 800	4 200	51 300	5 140	**55 000**	**4 720**
Russian Sturgeon	41 800	3 200	44 700	4 480	**40 000**	**3 560**
Stellate Sturgeon	186 300	20 900	172 700	17 280	**146 000**	**18 350**
Ship Sturgeon	30 000	2 500	3 000	0	**3 000**	**0**

Russian Federation	2001		2002		2003	
	Catch	Caviar	Catch	Caviar	**Catch**	**Caviar**
Beluga	41 900	2 300	35 000	1 500	**40 000**	**1 600**
Russian Sturgeon	255 000	17 300	240 000	16 700	**230 000**	**16 200**
Stellate Sturgeon	200 100	13 500	160 000	13 500	**180 000**	**13 800**
Ship Sturgeon	0	0	0	0	**0**	**0**
Sterlet	3 000	100	3 000	100	**3 000**	**100**

TOTALS	2001		2002		2003	
	Catch	Caviar	Catch	Caviar	**Catch**	**Caviar**
Beluga	198 000	10 970	177 355	10 120	**155 400**	**8 850**
Russian Sturgeon	361 800	27 410	335 875	26 050	**334 590**	**25 910**
Stellate Sturgeon	539 800	60 640	455 375	48 077	**442 800**	**48 350**
Ship Sturgeon	44 700	3 500	18 963	0	**16 000**	**0**
Sterlet	3 000	100	3 000	100	**3000**	**100**
Persian Sturgeon	349 000	51 000	467 422	55 890	**526 200**	**63 000**
TOTAL	1 496 300	153 620	1 457 990	140 237	**1 477 990**	**146 210**

(Caviar export quotas for Kazakhstan and the Russian Federation do not include the carry-over from the previous year)