

Ramsar Declaration on Global Sturgeon Conservation

May 9 to 13, 2005, Ramser, Iran

Presented by the participants of the 5th International Symposium on Sturgeons

Preamble

Considering that

- Sturgeons and paddlefishes (Order Acipenseriformes families Acipenseridae, Polyodontidae) represent a small group of ancient fish,
- Sturgeons and paddlefish are recognized as an unique phylogenetic entity
- Sturgeons and paddlefish are evolutionary, ecologically, commercially, and recreationally important fish species of the northern hemisphere,
- Sturgeons and paddlefish are mostly migratory fish forming partially straddling stocks, often crossing borders of neighbouring countries,
- Sturgeons and paddlefish can serve as reliable long-term biodiversity indicators,
- Sturgeons and paddlefish and their products (mainly caviar) are traded globally with CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) providing means of trade control,
- Sturgeons and paddlefish are all listed in the CITES Appendices for Endangered Species because most stocks declined dramatically,
- Sturgeons and paddlefish are in need of stringent protection and rehabilitation measures to recover in order to achieve a sustainable resource which serves our future generations,

the participants

of the 5th International Symposium on Sturgeons jointly declare that:

- the state of sturgeon stocks worldwide has declined to crisis level because of:

- a) habitat destruction and habitat loss (e.g. damming, river regulation, flood control and dredging with drastic changes of the hydrodynamics, navigation & coastal constructions, all having serious consequences for the ecosystems in which sturgeon thrive)
- b) over-exploitation (uncontrolled fishery, poaching, lack of enforcement of regulations), and
- c) increasing pollution in riverine, estuarine and coastal habitats where sturgeons reproduce and juveniles thrive.

Because of these man-made drastic alterations many sturgeon populations are highly threatened, facing the risk of extinction.

The participants of the 5th International Symposium on Sturgeons (ISS5) express their serious doubts that the present measures are adequate to sturgeon resource management and therefore further

declare that:

- unless immediate actions are taken we are in danger of losing species and key populations;
- concerns are global with many populations already lost or at a level of near extinction (e.g. Azov Sea, Black Sea, North and Baltic Seas, several Siberian regions). The situation is particularly dire in the Caspian Sea which can

be considered the "last sturgeon bastion" in urgent need to be saved;

- short-term projects will not solve the problems and therefore, long-term commitments with substantial support (minimum 30 to 50 years time horizon) will be necessary to regain self-sustaining populations.

In light of the above considerations ISS5 participants (supported by the organizations named at the end of this document) agreed to the recommendations listed below, strongly requesting serious and immediate actions in the following areas (detailed in part II of the declaration):

- A) Sturgeon stock assessment and fisheries management
- B) Sturgeon habitat evaluation, protection, and restoration
- C) Sturgeon stock enhancement and Rehabilitation (including genetic and management considerations)
 - C1 Brood stock development /establishment
 - C2 Conserving Genetic integrity in Restocking and enhancement projects
 - C3 Restocking strategies and accompanying measures
- D) Environmental pollution and abatement measures
- E) aquaculture development for market production
- F) socio-economic and public awareness measures
- G) development of adequate national and international regulatory instruments (including enforcement)

We call upon all sturgeon range states, intergovernmental, international and national agencies concerned with environmental protection issues as well as on all NGOs of countries in which sturgeons once provided a healthy bio-resource **and strongly request immediate action to provide the means and resources for implementation of the recommendations outlined above and detailed below:**

Detailed Recommendations & Justifications

A. Sturgeon Stock assessment and Fisheries Management

It is strongly recommended to

1. Promote the use and development of modern population dynamics methods for proper assessment of sturgeon stock size and recruitment mechanisms
2. Develop adequate modelling approaches with predictive forecasting capabilities on abundance and population dynamics, using empirical survey data,
3. Include retrospect modelling runs by using historical assessment data and incorporate them in historic trend analysis (incl. different survey gear and sampling grid).
4. Encourage the use of virtual population modelling with fictive data to simulate scenarios controversially debated (in particular in relation to the use of most appropriate fishing gear and sampling points).
5. Explore new and adequate sampling designs for data acquisition across the borders of countries of straddling sturgeon stocks in order to improve modelling methods on population dynamics while continuing the use of past

sampling strategies for comparative reasons until agreement on improved designs has been reached among participating parties.

6. Employ modern techniques such as acoustic surveys and tagging as well as individual tracking systems to identify stock size, to follow cohorts and to determine migration pathways.
7. Involve the recreational and commercial fisheries to responsibly contribute to appropriate and reliable data acquisition on sturgeon fishery landings through building of partnerships between the fisheries sector, regulatory authorities and scientists.
8. Actively involve in the collection of catch and harvest records all stakeholders, the commercial and recreational sturgeon fisheries, individuals and businesses in local, regional and state sturgeon management programmes.
9. Promote regional agreements between range states of sturgeons and paddlefish species, aiming at sustainable management and utilization of these species
10. Obtain assistance on stock assessment issues – whenever appropriate - from organizations heavily involved in stock assessment such as FAO-EIFAC (European Inland Fisheries Advisory Commission) and ICES (International Council for the Exploration of the Sea).
11. Revise, where appropriate, the regulation of fisheries with a significant bycatch of sturgeon to reduce the impact of bycatch on sturgeon stocks through incentives for developing improved gear (allowing escapement of non-target species such as sturgeons) and for encouraging immediate (stress-reduced) release of sturgeons in by-catches.

Justification

Methodologies for sturgeon stock assessment are fragmentary and insufficiently tested. Often they are borrowed from commercial teleost fisheries. Procedures to assess recruitment mechanisms are likely to be different from those developed for teleosts because of variable multi-year interval spawning, difficulties in age determination leading to discrimination problems in cohort development, thereby causing serious biases in estimates of year-class strength and mortality rates.

There is a need to adjust the methodologies also in light of changing environmental conditions in the marine habitats (such as the Caspian, Black and Mediterranean seas) as these may affect growth patterns in various year classes as well as various populations ranging across national borders. Active participation of the commercial sector in data acquisition will also stimulate responsiveness and commitment towards the need for reliable stock assessment methods for management. Fisheries techniques currently employed are too unselective, resulting in large amounts of by-catch. More applied work has to be devoted to the improvement of the gear selectivity, reducing bycatch and discards of sturgeons more effectively to protect mature migrants.

B. Sturgeon Habitat Evaluation, Protection and Restoration

It is strongly recommended to

1. Conduct national inventories of spawning habitats using internationally defined scientific criteria.

2. Identify critical habitats for all life cycle stages of sturgeon species (e.g. nursery grounds for juveniles in rivers, estuarine and coastal habitats) and define limiting habitat factors for species and sub-populations world-wide and protect these habitats,
3. Effectively protect immediately and to the highest degree possible all known active spawning habitats of Acipenseriformes through national legislation.
4. Include the inventories into a global databank to serve as the basis for immediate and future conservation planning.
5. Consider the removal of barriers (dams) in known acipenserid rivers where these structures impose a significant threat to populations (migration obstacle, hydrological alterations) while developing alternative solutions to water management (e.g. construction of by-passes)
6. Include strategies that either would allow fish to overcome these obstacles to reach the historic spawning grounds or provide adequate compensation for their loss at an early stage of the planning process for hydro-power dams and other structures that obstruct river flow.
7. For all migration obstacles already existing promote the construction of artificial spawning sites in rivers or river beds constructed nearby in order to replace lost habitat.
8. Integrate the protection of sturgeon habitat into national conservation priorities, relevant legislation, policy, and environmental impact procedures as well as international regulations (e.g. EU WFD, inter-governmental environmental conventions such as Oslo, Paris, London, Bern and CBD, CITES and CMS)
9. Integrate the protection of sturgeon habitat into regional (e.g. EU Water Framework Directive= WFD) and national legislation and enforce strictly the established protection measures.
10. Build strong linkages (potentially through the development of a Memorandum of understanding, MOU) to the Convention on Wetlands of International Importance (Ramsar Convention) as this convention defines wetlands to include rivers, estuaries and all shorelines to a depth of 6 m (at low tide), thereby covering the entire spawning and particularly the nursery habitats of most sturgeon species.
11. Cross-link studies on sturgeon habitat with regional and global investigations on environmental and climate change

Justification

Despite ongoing efforts on sturgeon conservation in the Aral, Caspian and Black Seas as well as in other areas, in particular in Asia (e.g. China), the risk of losing most of the populations and bringing several species close to extinction is rapidly increasing. Habitat destruction and river damming (with subsequent impacts on the hydrodynamic regimes) are among the major obstacles threatening the sturgeon stocks. As a consequence, ecosystem changes do occur, affecting the food web in large downstream areas. These changes may drastically alter the carrying capacity of the Lake or Sea for sturgeon stocks. Studies on ecosystem change should accompany any sturgeon rehabilitation programme to understand the consequences of management decisions. Damming of rivers used by sturgeons as migratory path to spawning sites will continue to expand in most parts of the world in order to maximize the utility of the scarce and highly demanded water and energy resources.

There are options to mitigate the negative effects of most of

these activities and methodologies presently available should be fully utilized to derive at BEPs (Best Environmental Practices) while employing the best available technology (BAT). The application of both BEPs and BATs can also be considered rehabilitate/ enhance the functional quality of critical sturgeon habitats.

There are long-term trends of environmental change in many regions, partly linked to global climate change. Including these trend observations into the long-term programmes on sturgeon habitat improvement measures will benefit future generations.

C. Sturgeon Stock Rehabilitation and enhancement (genetic and management considerations)

C 1. Brood stock development /establishment

It is recommended that

for the remaining sturgeon species for which rehabilitation programmes are intended or underway

- 1) brood stocks should be established as soon as possible without any delay
- 2) Brood stock establishment should follow clear guidelines as to the system layout and safe operation.
- 3) Rearing guidelines must include aspects of behavioural needs of the species.
- 4) The development of codes on Best Environmental Practice (BEP) and the application of Best Available Technology (BAT) for sturgeon species is strongly encouraged while the necessary scientific work needed to develop these codes should be undertaken as soon as possible.
- 5) Studies on basic physiology (e.g. metabolism, nutrition, reproductive physiology and environmental quality requirements, osmoregulation, and behaviour such as habitat choice) are urgently needed to improve culture methodologies

Justification

Maintaining sturgeons in captivity for brood stock development requires professional handling, appropriate technical management of culture systems, adequate care of behavioural needs of the species concerned, and adequate nutrition for growth to full maturity (production of healthy and fully viable gametes).

Because of the high longevity of sturgeons and the large size of mature fish, the technical requirement for optimal culture conditions differ greatly from those of most teleosts which mature at much smaller size and have commonly a much shorter life cycle.

The need to carefully study the specific requirements of sturgeon culture for re-stocking and ranching programmes is obvious: to produce fish with a high fitness for survival in the natural environment.

Standards for the Best Available Technologies (BATs) are still lacking and can only be derived from sound scientific data obtained via solid studies on the physiology, metabolism, behaviour and genetic structure of the species under consideration (for the latter see also C2).

Declining stocks imply diminishing genetic diversity. Captive broodstock programmes can help prevent this loss of genetic variety, thereby enhancing the species "future ability to withstand and adapt to changing environmental challenges. To ensure the successful establishment of such broodstocks, it will

be essential to identify precisely the species physiological and behavioural needs, and to design holding systems which meet these needs adequately.

As stated above, this will entail more basic studies on physiology and behaviour, since for most acipenserids these features are inadequately understood. Knowledge so gained is required for developing the best culture practices and for ensuring best possible training of aquaculture staff.

Brood stock size will also have to be sufficiently large to avoid loss of genetic heterogeneity and this has consequences for system layout and operation for which criteria are insufficiently defined.

C 2. Conserving Genetic integrity and develop/ establish Brood stocks/Restocking

It is recommended to

- 1) Perform an initial analyses on the natural populations of native species in order to identify the conservation units to be separately managed.
- 2) Incorporate the current guidelines on conservation genetics fully into the management of endangered or threatened sturgeon populations
- 3) Develop/enhance reproduction procedures, and effective sturgeon restocking measures separately for species conservation, conservation of genetic integrity of stocks, and for stock enhancement.
- 4) Establish a broodstocks as founder population in a properly planned manner in order to minimize the loss of genetic diversity and to avoid inbreeding and outbreeding depression (hatchery brood stock composition must be based on the diversity exhibited by wild stocks).
- 5) Initiate standard sampling practices (e.g. tissue preservation) from all animals used as breeders and for the production of stocks that are to be released to allow for future genetic tagging.
- 6) Record all reproductions completely to serve the purpose identified under 5.
- 7) Discourage restocking activities which have been planned without prior analysis of the genetic diversity of both, the natural population and the stock to be released.

Justification

Releasing captive-bred fish is a common practice in many countries to manage aquatic resources that are heavily exploited (e.g. for commercial or sport value, and threatened species). There are many problems associated with such releases, in particular with regard to genetics. Among them are the potential for „introgression“ (when genetic characteristics of the captive population differs from those of the wild ones), the potential loss of adapted genes or gene complexes as well as the homogenization of a previously distinct genetic mix of populations through swamping unique characteristics in a region with a common gene pool. The question also is how much gene flow from hatchery-reared individuals can natural populations sustain before compromising genetic integrity, particularly when the natural populations are declining to near extinction level. The recommendations reflect these concerns and should be considered as conditional measures to **minimize risk of inbreeding** (exposure to the effects of deleterious recessive genes through matings between close relatives) **or outbreeding depressions** (hybrid vigor or heterosis). It is

imperative to maintain genetic diversity to the extent possible for any of the managed sturgeon populations in order to allow adequate adaptation capacity of wild (or re-established) populations to changing environmental conditions (including climate change, disease resistance, trophic alterations).

Synergistic effects of overharvest and environmental threats as well as poorly designed reproduction programmes have – in several cases – drastically reduced the available of genetic heterogeneity.

The recommendations aim to allow a sufficient conservation of the remaining genetic variability in selected stocks of threatened or endangered populations and to provide practical means to achieve this.

C3 Restocking strategies and accompanying measures

It is strongly recommended to

accompany restocking efforts by a sound monitoring programme and research projects that focus on

- 1) Habitat improvement for young fish and evaluation of the suitability of release sites
- 2) Monitoring of survival and growth of released fish, using most advanced technologies available (including marking and tagging; tracking over longer periods and distances)
- 3) Studying the genetic and behavioural interactions of wild and cultured sturgeons with subsequent strategies for stock enhancement methods aiming at preventing loss of genetic population diversity
- 4) Initiating releasing programmes with fish at different developmental stages at various release times (identifying the best “time-size-release window”). Such projects should be undertaken over a number of years with consistent criteria to derive sound data on best stocking practices leading to good survival and demonstrable contributions to stock enhancement (including home fidelity). Complementary release of eggs and larvae should be undertaken to avoid relaxing natural selection
- 5) Studying the factors that trigger habitat choice of adult fish in relation to (e.g.) eco-hydraulics and bottom topography of the river bed in order to understand what attracts fish to (a) spawning sites and (b) fish path structures
- 6) Monitoring egg deposition and drift as well as survival and predation in order to gain insight into recruitment capacity and survival potential thereby assisting to develop better strategies for effective culture-release projects
- 7) Promote and develop long-term assessments of sturgeon stocking practice

Justification

While stocking has been employed as a sturgeon management and rehabilitation tool for several decades, only limited definitive information exists at this point about the long-term effects of stocking on natural sturgeon populations, the most practical and cost-effective stocking strategies to ensure success, and the habitat utilization of stocked sturgeon. Research into these aspects need to be carefully planned to allow for consistent long-term assessments over many decades, and requires close coordination between governments that share common sturgeon stocks and waters.

Restocking works only when the developmental and ecological needs of a species are understood. More data are needed on the precise match of developmental stages and ecological needs

for best survival and recruitment into fishable stocks. This will be obtained best by long-term monitoring studies of the fate of released fishes. Information gained can be fed back into improving designs of release programmes. As the culture environment cannot reproduce exactly the diverse sensory input that wild fish receive,

rearing experience leaves the cultured fish at some behavioural disadvantage compared with wild ones. It also tends to distort social structures, favouring some genotypes that might not flourish so well in the wild. Hence, on release, the behavioural interactions of cultured and wild fish are unpredictable and may be undesirable (especially agonistic and spawning behaviour). Furthermore, the hatchery environment may select for characteristics that are inappropriate in the wild: therefore eggs and larvae should also be released to the wild to allow natural selection to act on at least a part of the populations. The recommendations on adequate monitoring the fate of released fish intend to assist in minimizing these effects while allowing to adjust release strategies as knowledge improves.

In view of the present status of ecosystems in which sturgeon thrive and in view of the increasing trend in habitat loss (particularly natural spawning grounds), the above recommendations are also made to foster the development of effective and joint strategies for range states to

- consider the carrying capacity of shared ecosystems for species to be stocked,
- set incentives for joint quality standards of early life history stages produced for release
- determine best release strategies in space and time (effective “time-size release window!”)

The recommendations are intended to foster sustainable restocking activities that pay due attention to the population structure and to genetics.

D) Environmental pollution and abatement measures

It is strongly recommended to

- 1) Aggressively develop and implement overall environmental and bio-resource conservation measures in coastal and sea areas where sturgeons thrive
- 2) Identify the major sources of pollution threatening sturgeon stocks and aggressively promote mitigation measures to reduce the contaminant burden derived from man-made activities
- 3) Compile existing data on contaminant concentrations in sturgeon species, their food organisms, water and sediments in sturgeon habitats and incorporate them into a relational databank for rapid assessment and for structuring future trend monitoring
- 4) Employ cost-effective and easily applicable methods in environmental monitoring programmes relevant to sturgeon conservation
- 5) Perform intercalibration exercises and training workshops in various parts of the world where sturgeons are at risk in order to improve contaminant data quality assurance while improving expert competence in data interpretation and comparability.
- 6) employ the „Precautionary Approach“ according to the Oslo Paris Commission(1995) when managing sturgeon habitats to foster the health status of the populations. Industries identified as polluters should contribute to shared cost models to finance the biological effect monitoring

programmes (polluter pay principle).

Justification

There is an urgent need to reduce immediately and effectively the massive release of environmental contaminants to sturgeon habitats. There is also an essential need to assess the effects of environmental contaminants on the ecosystems on which sturgeons depend. In particular, environmental effects monitoring for sturgeon populations is needed because of three important conservation issues:

- To guarantee continued natural reproductive success of sturgeon species
- To effectively support restocking programmes
- To further reduce accumulation of contaminants in sturgeon stocks and products

Without a sound conservation programme for the ecosystems and bio-resources on which sturgeon populations depend, no effective protection of endangered sturgeon species will be possible. This holds in particular true for the Caspian Sea and other enclosed seas where protection strategies will only be effective if jointly developed, monitored, implemented, and enforced by all coastal nations. The recommendations aim specifically on means towards effective monitoring and control measures.

E) Aquaculture development for market production

It is recommended to

- 1) Develop/enhance technology and procedures for sturgeon aquaculture specifically to use endemic species in order to minimize live transfer of fish to aquaculture facilities outside the native range of the species
- 2) Develop guidelines for brood stock handling, hatchery operation and grow-out facilities based on BATs and BEPs particularly suited for commercial cultivation
- 3) Improve our understanding of the nutritional requirements of sturgeons to
 - rear larvae from the onset of feeding to healthy and strong juveniles
 - produce adequate fish during the grow-out period, and
 - grow high quality broodfish capable of multi-year spawning.
- 4) Invest with industry participation in the development of cost-effective feed formulations to meet nutritional needs identified under 3
- 5) Encourage scientific studies to find alternative protein sources for sturgeon feeds
- 6) Improve quality control and monitoring methods for sturgeon products in line with internationally agreed food safety measures and standards such as HACCP (Hazard Analytical Control Points).
- 7) Enhance methods for effective diagnostics on sturgeon diseases and promote the development of appropriate prophylactic measures to prevent disease outbreaks and transmission
- 8) Promote interdisciplinary research to advance sustainable aquaculture production through the use of modern tools (e.g. genetic markers for sex identification at early developmental stages; identifying the farm-site origin of escaped fish).

Justification

The demand for aquaculture products is globally increasing and has already outstripped supplies due to (a) the growth of the human population, and (b) the globalization of markets reaching any area where a part of the population enjoys a higher income that supports a luxury lifestyle. Therefore, globalization has led to a rapidly increasing demand for high-priced and luxury commodities Sturgeon products, in particular caviar, are no exceptions. One way of compensating the pressure on the over-exploited sturgeon resources is to cultivate the species with due involvement of the low-income local fishing community who need alternative livelihoods. In order to insure that the development of the sturgeon aquaculture industry is sustainable, internationally agreed standards on culture technology and general husbandry, adequate nutrition, disease prevention and product quality control are necessary. The long-distance transfer of juveniles from one to the next aquaculture facility needs to be minimized to avoid the introduction of nonnative sturgeon species into areas where rehabilitation and restocking programmes are underway. The appropriate development of biochemical and genetic markers will enable to monitor and detect the origin of escapees, thereby providing means for liability measures against "biological pollution". This will create an incentive to industry to take adequate safety measures to prevent escapement.

Of particular concern is the aquarium trade with juvenile sturgeons.

The general access to such fish by the wider public increases the risk of escapement or deliberate release to natural waters and awareness should be created in the public at large of the potential ecological consequences of such releases.

F. Socio-Economic and public awareness measures

It is strongly recommended to

- 1) Increase public awareness on sturgeon issues (locally, regionally, globally), particularly among fishing and near-shore communities through specific awareness campaigns and educational programmes,
- 2) Promote awareness globally of illicit trade in caviar, and encourage the public at large to buy caviar from legal suppliers only.
- 3) Invest aggressively in small-scale and diverse industrial developments (including aquaculture of native sturgeon species, see above) in coastal fishing communities to provide alternative income and livelihood, thereby decreasing pressures on illegal fishing and poaching on wild stocks
- 4) Investigate alternative options concerning the distribution of access to sturgeon resources, and seek the assistance of international development and conservation organizations to do so, particularly to address the issue of large-scale illegal fishing by people with low incomes.
- 5) Ensure adequate funding for anti-poaching activities, and particularly for modern equipment and patrol vessels to control illegal activities
- 6) Stimulate active volunteering and responsible participation of the fishing community and other coastal/ riverine communities in protecting the sturgeon resource and habitat while becoming involved in monitoring and control measures (including the collection of catch and harvest records)

- 7) Involve active participation of recreational fisheries, coastal communities and NGOs in sturgeon spawning habitat protection during the spawning season

Justification

Any conservation strategy and measure cannot effectively function without strengthening the capabilities of stakeholders for direct involvement in sustainable resource management. In most cases the issue is not “Sturgeon Conservation” *per se* but the creation of the “SOCIO-ECONOMIC CLIMATE” that permits to

- (a) improve the general understanding of sturgeon conservation needs by those living and depending on the coastal zone (e.g. the fishing community)
- (b) creating a “well-informed” political leadership (locally and regionally) to provide alternative livelihood or create the socio-economic climate that aggressively fosters alternative income opportunities for poor coastal fishing communities, and
- (c) better control and reallocate natural resource use in habitats and ecosystems crucial to sturgeon survival.

G. Development of adequate national and international regulatory instruments (including enforcement)

It is recommended to

- 1) Improve substantially the enforcement capabilities for sturgeon conservation measures for all highly endangered sturgeon populations at local, regional, and international level
- 2) Designate and empower by law relevant law enforcement agencies to monitor and enforce controls closely from the point of harvest to the point of sale or export
- 3) Introduce new legislation, or strengthen existing legislation to control strictly the harvesting, processing of and trade in sturgeons and sturgeon products for domestic and international markets
- 4) Develop and implement international, interstate, and intrastate sturgeon conservation and management plans with the aim to harmonize efforts and maximize effectiveness in shared watersheds and seas while at the same time increasing the liaison between relevant agencies.
- 5) Encourage training and capacity building for enforcement officials from countries within the distributional range of sturgeons to consumer states, to facilitate the exchange of intelligence, the establishment of networks to continue such exchanges, and the development of strategies to combat illegal harvesting and trade in sturgeon and sturgeon products.
- 6) Ensure full compliance with and promotion of CITES provisions governing trade in specimens of *Acipenseriformes*, including those contained in Resolutions and Decisions adopted by the Parties to this Convention
- 7) Provide adequate penalties for illegal activities and by ensuring that illegal harvesting, processing and trade can be dealt with as a criminal offences

Justification

Without due enforcement of urgently needed regulations, nationally and internationally, announced protection measures

and quota limitations will remain ineffective because of the market driven demand that encourage illegal trade internationally for scarce products high in demand (such as Caviar). Removing political and bureaucratic barriers for enforcement authorities via close networking of intelligence agencies will greatly assist to tighten the net through which illegally organized trade escapes from being stopped at national borders and distant markets. It is believed that implementing the above recommendations will reduce illegal fishing and trade drastically so that conservation measures can become effective.

Ramsar, May 13th, 2005

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- Members of the Scientific Advisory Committee (SAC) of ISS 5
- the Board of Directors of the World Sturgeon Conservation Society (WSCS)
- Members of the Sturgeon Specialist Group (SSG) of the IUCN Species Survival Commission, and

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