



Strasbourg, 29 September 2022

T-PVS/Inf(2022)49

CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

**First evaluation of the implementation of the Pan-
European Action Plan for Sturgeons (PANEUAP) through
a survey addressed to Contracting Parties to the Bern
Convention**

Report

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Introduction

The Conservation of Sturgeons - within the frame of the Pan-European Action Plan for sturgeons (PANEUAP) adopted by the Standing Committee to the Bern Convention in 2018, the Secretariat of the Bern Convention was entrusted with monitoring progress in the implementation of recommended actions therein by the Contracting Parties. To this end, the author of this report was contracted (Act of Engagement/ Contract No. CC.DGII.142.2022/ DGII Directorate General of Democracy – Bern Convention from February 23rd, 2022) to provide the Secretariate with scientific expertise by implementing the following tasks:

- Develop a questionnaire aiming to take stock of the actions carried out by range Contracting Parties to support the conservation of Sturgeons with respect to the Pan-European Action Plan for Sturgeons.
- Assess the replies to this questionnaire and prepare a synopsis of the answers. Emphasize good practices and point to gaps in conservation actions. Identify areas of improvement.
- Present the findings of the assessment of the replies to the questionnaire at the meeting of the Working Group of National Focal Points for the Conservation of Sturgeons scheduled end of September 2022 (Ann. by author, rescheduled to take place on October 5th and 6th, 2022)

PANEUAP Reference: PAN-EUROPEAN ACTION PLAN FOR STURGEONS by FRIEDRICH, T., GESSNER, J., REINARTZ, R. & STRIEBEL-GREITER, B. (eds.), 2018: CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE AND NATURAL HABITATS, Council of Europe Publishing, 85 p. - <https://rm.coe.int/pan-european-action-plan-for-sturgeons/16808e84f3>

The report at hand contains the method behind the questionnaire, the rationale behind the main topics, the questionnaire and the results, i.e. the answers and content provided by some of the contracting parties in form of a compilation and an interpretation with regard to status, deficits and best practice.

Method

Sturgeon range by country, contemporary and historical distributions of native European species, was determined by means of the mutually accepted scientific website "fishbase.org", cross-checked in some cases with original literature and aligned with the Bern Convention contracting parties. The resulting list of 42 contracting parties/ countries and the EU contained already denominated national "Sturgeon Focal Points" (SFP) and contracting parties/ countries to potentially appoint their own SFPs, due to the current or historic occurrence of sturgeons and the intention to work on their conservation and restoration respectively.

A questionnaire covering information, deemed pivotal for sturgeon conservation in general and the implementation of the PANEUAP in particular, was developed in close cooperation between the Secretariate of the Bern Convention, the contact group of WWF with the World Sturgeon Conservation Society (WSCS) and the author of the report at hand.

It was agreed between these actors to conduct the questioning in form of an online-questionnaire. A support document containing additional info and rationale was developed and sent out to:

- Facilitate online-work by giving the chance to read through the questions in advance and prepare for them.
- Share the questions with other experts in the respective countries in advance, since it was not expected to fill in the online-form "on the fly" and all by oneself. The questions were seen as sometimes being quite challenging, calling for significant time and effort and one wanted to

offer the opportunity to share this burden, in hope for comprehensive detailed answers covering the entire spectrum of knowledge and expertise within a given country.

Invitations to fill in the questionnaire were sent out on May 19th 2022 with a deadline of June 22nd 2022. A first cut-off date was set for July 1st 2022, which was later postponed to July 8th 2022.

Due to current events, Ukraine, Belarus and Russia were not involved. Five countries refrained from participating in the questionnaire in advance or from nominating a NFP, due to the perceived absence or rarity of sturgeons in the respective countries and thus also the absence of a perceived need for conservation and/ or recovery measures (Iceland, Malta, Norway, Switzerland, Turkey).

Due to the fact, that only a portion of the contracting parties participated in the survey, a comprehensive overview, breaking down detailed information to the national or basin level, on specific topics, cannot be given.

Unfortunately, important and potentially important "sturgeon countries" are still missing from this survey. Therefore, the focus in compilation and analysis was on qualitatively identifying underlying patterns, deficits and best practices considered representative for the community of countries (represented by the current sample of participants), rather than quantitatively describe the current situation on the level of contracting parties. Single statements with special relevance were also listed and/ or cited, as to not lose this information during the process of compilation. Questions and relevant answers are compiled in the first part of this report. The second main part focusses on the general status, conceivable deficits and best practice. Additionally, indicators for progress were identified for each major topic of the questionnaire.

General results and observations

15 answers from countries/ contracting parties could be counted, i.e. all nine European sturgeon species (in alphabetical order: *Acipenser gueldenstaedtii*, *A. naccarii*, *A. nudiventris*, *A. oxyrinchus*, *A. persicus colchicus*, *A. ruthenus*, *A. stellatus*, *A. sturio*, *Huso huso* and an additional form from the *A. gueldenstaedtii*-complex *A. persicus colchicus* in Georgia) and all major European marine basins could be included in this survey (Atlantic Sea, Baltic Sea, Mediterranean Sea, Black Sea).

It has to be taken into account, that the answering countries represent a wide variety of "sturgeon situations/scenarios" like e.g. the conservation/ securing of existing wild relict populations (in-situ measures), supporting existing populations by releases of juveniles from controlled propagation in aquaculture or distinct conservation breeding (ex-situ measures), as well as restorations and the rebuilding of former sturgeon populations by releases.

However, also contracting parties, just taking their initial steps towards sturgeon restoration and conservation, participated in this survey. Also, there are countries with access to important sturgeon spawning rivers and marine habitat and others without either sturgeon river or sea. Some countries developed a central document or strategy as plan for sturgeon conservation, others rely on frameworks taken from several documents or are in the process of developing their own strategy. Some countries are part of regional agreements/ organizations, others are not. Thus, we are looking at very diverse situations and also answers.

A remark on "best practice" with regard to the sturgeon scenarios in Europe. A **best practice** can be defined as a method or technique, that has been generally accepted as superior to other known alternatives, because it often produces results that are superior to those achieved by other means, or because it has become a standard way of doing things.

In this sense, "best practice" surely has to be applied to main technical tasks and generally, when working in or up to certain standards is required, especially with regard to cooperation within a certain region or conservation tasks by several countries on shared populations. The same holds true, when it comes to standardization, needed comparability and compatibility with regard to methodologies and results.

However, this survey has shown, that there may be several and distinct legitimate approaches to a task. Approaches and priorities may differ and still be best practice in a sense of ensuring the functioning of actions and implementation towards the recovery of current relict populations and/ or the restoration of former populations.

For the implementation of the PANEUAP this means, that it is primarily important, that the objectives of the PANEUAP are reached using approaches that fit best for the country and region and that best practice and standardization is applied wherever necessary and as agreed upon within the region and within the range countries (e.g. genetics, ex-situ support, population and habitat monitoring, sturgeon passing solutions at migration barriers) but also, that, due to the fact that a parallel and synchronized approach is deemed necessary in any sturgeon case scenario, measures and implementations are prioritized within a country, region or catchment to achieve a maximum of beneficial results for the applied effort and funding. Here, reliable communication, cooperation and coordination within a country, between contracting parties and within a region becomes key for "best practice" and the successful implementation of measures.

Questions and answers

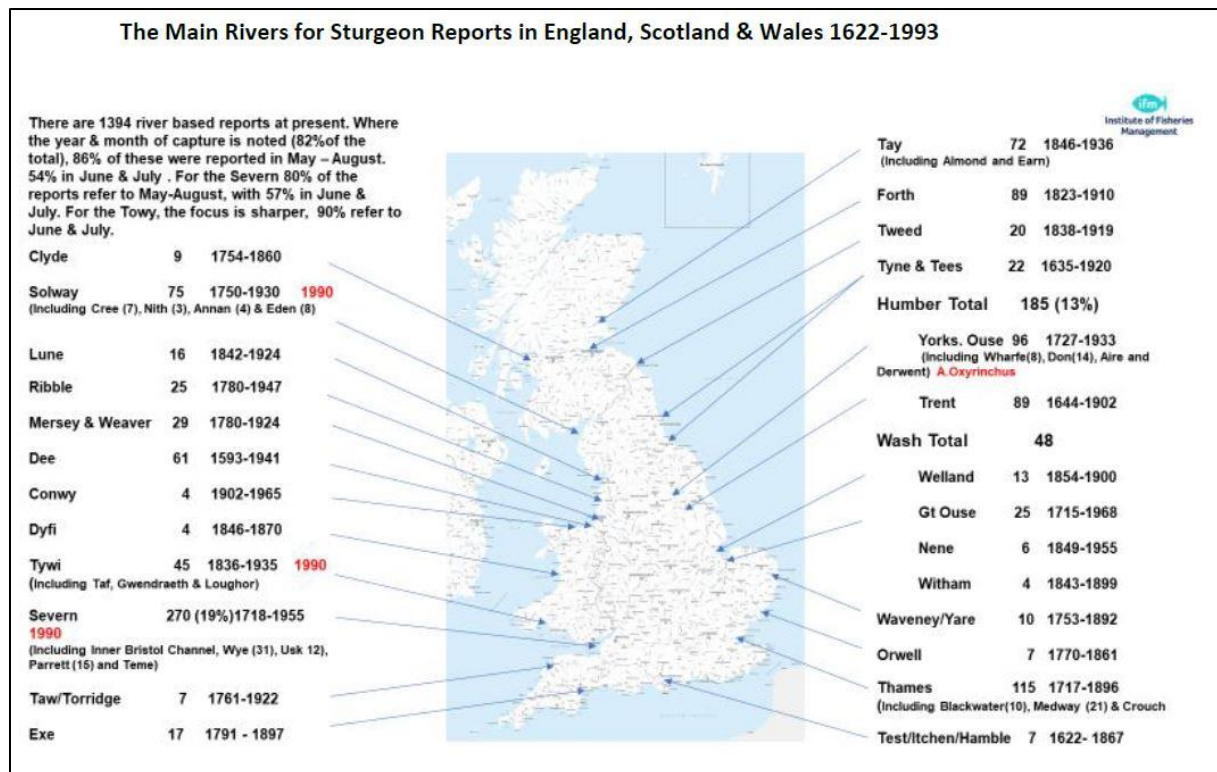
1 Occurrence/Distribution

Rationale: We want to know, if basic information for the planning and implementation of sturgeon conservation and/or restoration is available already.

1.1 Do you have records on the historical distribution of sturgeons in your country?

All 15 countries have records on the historical distributions of sturgeons. The records include official reports, current and historic scientific literature as well as databases. One answering country however, sees the need for additional research in historical information and documents.

Figure 1: Main sturgeon rivers in the UK (from "The Common or European Sturgeon *Acipenser sturio* (L., 1758) An evidence report of the history and status of the species in Great Britain")



1.2 What is the latest information you have on the occurrence and recent distribution of sturgeon species in your country?

The information on the latest occurrences in the answering countries is quite diverse. Not every country has reliable data. These data include incidental catches by anglers, recent trawls as population assessments, official reports as well as personal and/ or anecdotal information and communication, but also from regular monitoring and notably online reporting services from citizens. However, it is mentioned that probably some occurrences of potentially native species are caused by human activities and that it is not always possible to distinguish between e.g. escapees from aquaculture and wild individuals in the field and especially in marine areas.

1.3 Which are the relevant water bodies for sturgeon conservation and restoration in your country (freshwater & marine)?

All countries have picked or are able to name their relevant riverine and marine water bodies for sturgeon conservation and restoration.

Table 1: Relevant water bodies for sturgeon conservation mentioned in the questionnaire

Country	Water Bodies
Austria	Danube
Bulgaria	Danube and Black Sea
Czech Republic	Freshwater, Dyje, Morava
Finland	marine areas, Gulf of Finland, no spawning rivers
France	Garonne-Dordogne-Gironde water basin, Atlantic Coast, The Channel, North Sea, to a lesser extent Spanish and Portugueses coasts
Georgia	Rioni and marine areas in the Black Sea, historically also Enguri and Tskhenistskali

	and others)
Hungary	Freshwater, Danube, Drava, Mura, Tisza, Szamos, Bodrog, Körös, Maros
Italy	Veneto basin: Livenza, Piave, Tagliamento; Atesino basin: Adige, Brenta, Bacchiglione; Padano basin: Po, Ticino, Adda, Mincio (Ann.: and presumably adjacent marine areas)
Netherlands	North Sea, Rhine
Poland	Freshwater, Vistula, Odra
Serbia	Danube, Sava, Tisza
Slovakia	Danube, Váh, Malý Dunaj, Tisa, Bodrog, Latorica
Slovenia	Drava, Sava, Mura
Sweden	Swedish coastline, Baltic Sea, Kattegatt, Skagerrak
United Kingdom	most river systems in the UK, most frequented were in England: Severn catchment, including the Wye, Usk and Parrett tributaries – 270 records Humber – Trent – 104 records, Yorkshire Ouse and tributaries – 94 records Thames catchment, including the Blackwater and Medway – 115 records Wash, including Great Ouse, Welland, Nene and Witham – 48 records Ribble catchment – 27 records Mersey and Weaver – 27 records Exe catchment – 18 records Lune catchment – 18 records Tees catchment – 17 records; in Scotland: Forth catchment - 92 records Tay catchment – 73 records; in Wales: Twyri catchment – 63 records Borders: Solway catchment – 83 records Welsh Dee catchment – 62 records Tweed catchment – 20 records Marine: Data collated to date indicates that sturgeon were and continue to be encountered in most coastal waters off the Scottish, English and Welsh coasts.

2 Ongoing protection measures

Rationale: We want to know how far you've come already and where your priorities and potentials lie.

2.1 Are there any national plans/strategies for the protection and/or recovery of the sturgeon species (please list)?

Only three countries have developed official national plans solely for the protection and/or recovery of sturgeon species.

Seven countries have included sturgeon protection and recovery measures within other documents and strategic conservation frameworks, or are in the process of developing such documents and frameworks (such as river basin management plans, strategy for restoring the ecological corridor, national biodiversity strategies and action plans, HELCOM AP).

Five countries list legal protection as main conservation measure or have established specific plans for single species, rivers or regions or finished to draft recommendations for a favourable conservation status.

2.2 Were these plans, strategies and measures inspired by the PANEUAP or do they already put the Action Plan into practice at national level?

5 countries explicitly mention that their measures for sturgeon conservation and restoration were inspired by the PANEUAP to a certain extent. However, three additional countries state, that certain measures are in line with the PANEUAP, that it is referenced in their own documents or that it was introduced to relevant bodies for the development of national plans and measures.

One country states that national plans and measures were developed and put into effect before publication of the PANEUAP.

One country states that it is rather vice-versa and that the PANEUAP could not have been developed without their own national APs.

Countries that do not have any distinct sturgeon conservation and/ or restoration plans up to this date cannot state any inspiration by the PANEUAP of course. However, one country in the process of developing plans and measures for sturgeon conservation in marine waters states, that the own plans may develop in the PANEUAP direction, as it contains a lot of good ideas.

2.3 Which specific measures for the protection of wild populations (if still present) are applied in your country (for protected areas, see question below)?

All countries except one, mention legal protection of the native sturgeon species/ populations, with the legal construct/ method often labelled as "fishing ban". In one case of fisheries that is still allowed (federal country with distinct fishing laws and regulations in place in the states, *A. ruthenus*), a size limit is in place. Also the prohibition of possession, transport and trade for *A. sturio* is mentioned by another country.

However, also the installment of specific protected areas, habitat protection in general and specific measures to protect habitat properties and resources (prohibition of gravel/sand extraction, EIA required for projects) are mentioned.

Important measures mentioned, that could also be regarded as "best practice" (by a country that is already very developed in sturgeon conservation and restoration and another one) are awareness raising (general public and stakeholders), established procedures for accidental captures, assessment of the impact of invasive species, improvement of aquaculture with regard to exotic species and preserving native genetic traits and biodiversity in ex-situ measures, the support of populations by juvenile releases and established release procedures, but also the strengthening and/or increased effort of law enforcement. Last but not least the securing of funding for measures and activities.

One country in the process of developing plans and measures mentions "Mostly research, investigations and good ideas for projects so far".

2.4 Are there any designated protected areas specifically addressing sturgeon conservation in your country?

Four countries that participated in the survey have designated riverine and estuarine/marine protected areas specifically for sturgeons. One additional country states, that these are by conservational logic already included in the generally protected riverine and marine areas of said country.

One country states, that there are no designated protected areas for sturgeon, but that territorial authorities restrict fishing on several spawning grounds and wintering places for fish in general, some of which are potential habitats for Sterlet or other sturgeons.

Table 2: Protected areas as mentioned by answers from the questionnaire

Bulgaria	"Esetrite – Vetren" on the Danube River
France	Natura 2000 (Site Code - Site Name, all <i>A. sturio</i>): FR7200660 : La Dordogne, FR7200677 : Estuaire de la Gironde, FR7200700 : La Garonne en Nouvelle-Aquitaine, FR7200811 : Panache de la Gironde et plateau rocheux de Cordouan (Système Pertuis Gironde), FR7200812 : Portion du littoral de la côte aquitaine, FR5400469 : Pertuis Charentais Prefectural Biotope Protection Orders, FR3800268 : Cours De La Garonne, FR3800269 : Frayère À Esturgeons (Garonne), FR3800353 : Garonne Et Section Du Lot

Georgia	Kolkheti National Park incorporating the marine area, the Rioni River estuary and its section from the river mouth upstream – up to 7 km.
Hungary	Territorial authorities restrict fishing on several spawning grounds and wintering places, some of which are potential habitats for Sterlet or other sturgeons.
Italy	Several Natura 2000 (N2000) sites are designated for sturgeons in Italy, both for <i>A. naccarii</i> and for <i>H. huso</i>. None of these N2000 sites included <i>A. sturio</i>. (Species name - Site Code – Site Name): <i>Acipenser naccarii</i> - IT1120030 - Sponde fluviali di Palazzolo vercellese, IT1150001 - Valle del Ticino, IT4060016 - Fiume Po da Stellata a Mesola e Cavo Napoleonico, IT2030005, IT2050005 - Boschi della Fagiania, IT2060015 - Bosco de l'Isola, IT2080019 - Boschi di Vaccarizza, IT2080301 - Boschi del Ticino, IT2080701 - Po da Albaredo Arnaboldi ad Arena Po, IT2080702 - Po di Monticelli Pavese e Chignolo Po, IT2080703 - Po di Pieve Porto Morone, IT2090002 - Boschi e Lanca di Comazzo, IT2090003 - Bosco del Mortone, IT2090006 - Spiagge fluviali di Boffalora, IT2090007 - Lanca di Soltarico, IT20A0501 - Spinadesco, IT20A0503 - Isola Maria Luigia, IT20B0001 - Bosco Foce Oglio, IT20B0003 - Lanca Cascina S. Alberto, IT20B0006 - Isola Boscone, IT20B0501 - Viadana, Portiolo, San Benedetto Po e Ostiglia, IT3320030 - Bosco di Golena del Torreano, IT3320037 -Laguna di Marano e Grado, IT3330005 - Foce dell'Isonzo - Isola della Cona, IT4010018 - Fiume Po da Rio Boriacco a Bosco Ospizio, IT1180028 - Fiume Po - tratto vercellese alessandrino, IT2010013 - Ansa di Castelnovate, IT2010014 - Turbigaccio, Boschi di Castelletto e Lanca di Bernate, IT2080002 - Basso corso e sponde del Ticino, IT2080014 - Boschi Siro Negri e Moriano, IT20A0006 - Lanche di Azzanello, IT20A0007 - Bosco della Marisca, IT20A0008 - Isola Uccellanda, IT20A0009 - Bosco di Barco, IT20A0016 - Spiaggioni di Spinadesco, IT20A0017 - Scolmatore di Genivolta, IT20A0019 - Barco, IT20A0020 - Gabbioneta, IT20B0010 - Vallazza, IT20B0401 - Parco Regionale Oglio Sud, IT20B0402 - Riserva Regionale Garzaia di Pomponesco, IT4030020 - Golena del Po di Gualtieri, Guastalla e Luzzara, IT2090008 - La Zerbaglia, IT2090010 - Adda Morta, IT2090501 - Senna Lodigiana, IT2090503 - Castelnuovo Bocca d'Adda, IT2090701 - Po di San Rocco al Porto, IT2090702 - Po di Corte S. Andrea, IT20A0004 - Le Bine, IT3250046 - Laguna di Venezia, IT3270017 - Delta del Po: tratto terminale e delta veneto, IT3270022 - Golena di Bergantino, IT3270023 - Delta del Po, IT4060005 - Sacca di Goro, Po di Goro, Valle Dindona, Foce del Po di Volano. Huso huso - IT20A0501 Spinadesco, IT20A0502 - Lanca di Gussola, IT20A0503 - Isola Maria Luigia, IT20B0501 - Viadana, Portiolo, San Benedetto Po e Ostiglia, IT20A0016 - Spiaggioni di Spinadesco.

2.5 Have you set priorities for implementation? If so, which objectives of the PANEUAP are considered most pressing?

The participants were asked, to rate each of the nine different PANEUAP objectives by five different levels of importance (objective is of 1. utmost/ 2. raised/ 3. general/ 4. subordinate/ 5. low importance). 11 answers were recorded for this question. Remaining wild populations are few and even fewer countries with access to these populations participated in this questionnaire, but there seems to be a tendency for countries with still existing populations of anadromous sturgeons to rate this objective as one of the higher priorities.

Interpretation of results

All objectives are seen important to a certain extent, but priorities differ within the answering countries. An overall ranking of objectives was therefore considered useful (see below).

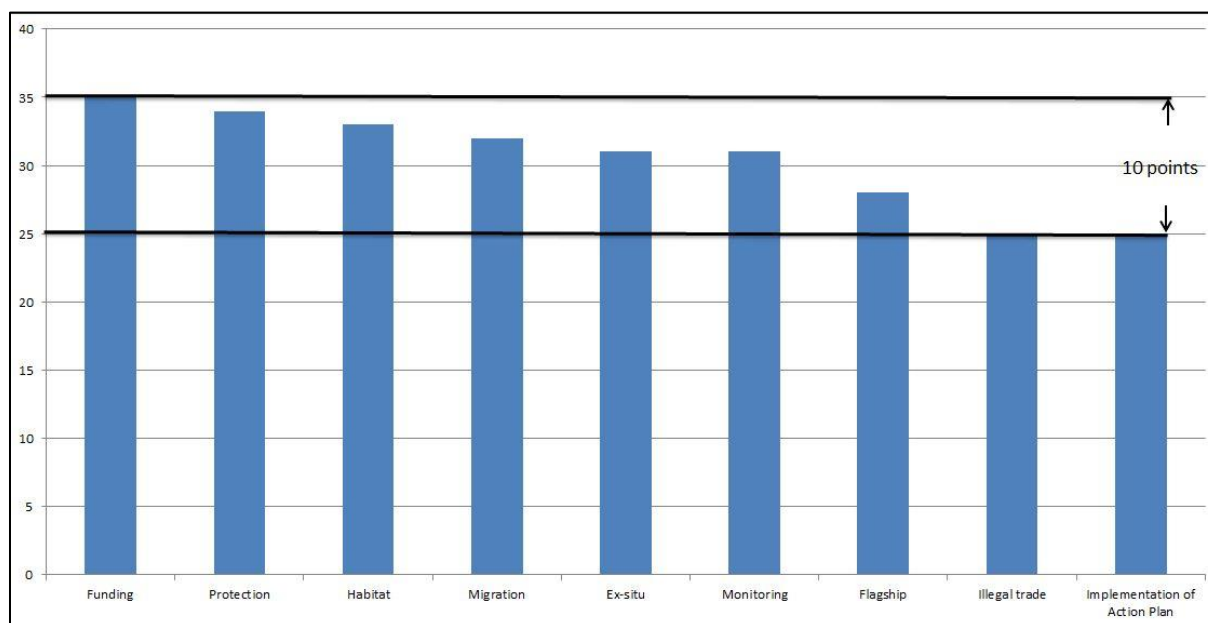
Overall Ranking

Assigning points to a ranking might be considered useful, if one aims at getting a higher resolution of results and a clearer trend of overall importance, although there were only 11 answers. There were five rankings of importance, thus the highest number of ranking (utmost importance) was considered to be equivalent with 4 points and so on (low importance equalling zero points). To achieve an overall ranking, the country count for a ranking was multiplied with the number of points for each ranking, and then added up to a total. The following list and figure show the resulting points and thus order of ranking of the objectives.

points objective

35	Funding is available for the implementation of the AP
34	Protection of wild populations
33	Habitat protection and restoration
32	Sturgeon migration secured and/or facilitated
31	Support of populations by releases from ex-situ
31	Monitoring of wild populations is in place
28	Sturgeons are in place as flagship species and generate sufficient support
25	Illegal trade of sturgeons and products is eliminated
25	Implementation of Action Plan is monitored, evaluated and adaptively managed

Figure 2: Ranking of PANEUAP objectives. Ranks vary within a range of 10 points.



It has to be kept in mind, that this is not a significant and robust statistical analysis by far (just 11 answers), but the visible trends basically support the following statements.

- The PANEUAP is basically on target, all of the objectives are seen as important and none of the objectives was seen as utterly irrelevant.

- All objectives are seen as important to a certain degree, but national priorities vary of course (probably due to the specific national "sturgeon situation").
- This result also supports the idea of a parallel approach across the range of objectives, meaning national priorities might vary, yet all objectives may become important to a certain degree within one population range and/ or catchment and have to be taken care of, i.e. provisions have to be taken for all of the objectives, regardless of their local/regional urgency.

2.6 Where do you see the strengths and the greatest potential for sturgeon conservation within your country?

The answers given to this question reflect either the inherent potential of the specific "sturgeon situation" within a country, past and current achievements to build upon and/ or planned future work on the topic of sturgeon conservation and restoration.

One country rates the access to a wild population (*A. sturio*) as an important asset and potential, as well as access to an important spawning river by another one (Rhine).

Ex-situ facilities, releases from ex-situ, ongoing ex-situ programmes and projects, experience in the controlled propagation of sturgeons and existing sturgeon broodstock in captivity were mentioned several times. However, when taking information into account from all of the input from the questionnaire it becomes clear, that these activities document very different levels of practice and organization. One country reports of occasional releases of juveniles from aquaculture, not resulting from a programme with recurring standardized activities, another of releases of just one species (Sterlet) from aquaculture without any genetic considerations, one of releases for the restoration of a specific river population and one of future facilities as an asset for future measures. Three countries state, that they have or are part of an ex-situ programme using captive broodstock and complying with best-practice standards, presumably.

Habitat protection and restoration, access to and protection of specific habitat (e.g. spawning grounds, well preserved habitat, long and unobstructed river networks) but also experience in river restoration and the restoration of the migratory corridor were mentioned several times (specifically, also passability at Gabčíkovo).

Another perceived strength was the installment of fishing bans as basis for conservation and recovery, as well as established legislation favourable for sturgeon conservation and restoration.

Ongoing research programmes and projects for monitoring were seen as potential strength by several countries.

There is also a wide range of statements emphasizing the significance of the human factor within the sturgeon topic. This included research programmes (scientific community), conservation and restoration programmes, sensitized professionals who contribute by observations to a programme, a university fishery research group established as platform for sturgeon research and conservation for instance, decades of experience in fishery research and river restoration, but also a good cooperation among sturgeon farmers, scientists, public research institutes and international organization (e.g. WSCS), social acceptance of sturgeon remediation, an already high level of awareness and international cooperation.

Explicitly mentioned was the exchange of experience and coordination of activities in the Baltic Sea basin (within HELCOM), but also activities within the EUSDR, ICPDR and DSTF of the Danube River and Black Sea, knowledge of scientists and engineers, enthusiastic people in the project as a great potential and strength, a strong NGO community (e.g. in the form of the UK Sturgeon Alliance

and UK Sturgeon Working Group), national and international networks of interested and knowledgeable parties and renowned experts in species conservation and reintroduction.

2.7 Which are the greatest difficulties to overcome in the conservation of the sturgeons in your opinion?

The lack of wild populations and viable populations, general knowledge and practice as well as the effects of climate change were mentioned as very basic detrimental factors for sturgeon conservation and restoration.

Technical information and standards on certain topics was seen as limiting factor for sturgeon conservation and restoration measures, such as requirements for migration aids and monitoring methodology (sturgeon passes/ fish passage facilities at migration barriers, population and habitat monitoring).

But also a lack of reliable information about wild populations and their distribution and habitats (i.e. lack of population and habitat monitoring) e.g. a specific lack of reliable and precise information on the historic presence of various sturgeon species in the Drava, Sava, and Mura Rivers in Slovenia.

A lack of funding was seen as another important inhibiting factor for a whole list of activities, such as habitat protection and restoration, the maintenance of ex-situ stock, controlled propagation and juvenile releases ("having enough sturgeons to release and patience") and sufficient research infrastructure for monitoring of sturgeon populations. It was stated explicitly, that successful and sustainable sturgeon restoration is a long-term process requiring significant financial investment.

Habitat quality, availability, accessibility and continuity, quality of water and substrates and corresponding irreversible habitat changes due to river engineering and damming was seen as a still remaining issue with regard to the life-cycle. Also invasive species (European Catfish - *Silurus glanis*) and the increasing occurrence of alien species and exotic sturgeons, as well as a lack of control of trade and origin of sturgeons in fish farms was mentioned. Creating the right conditions for sturgeon migration specifically at the Iron Gate I and II hydroelectric dams on the border between Romania and Serbia and at the Gabčíkovo Hydropower Waterwork in the Middle Danube were mentioned as key to sturgeon conservation success in this region, but difficult to achieve.

Poaching and bycatch was mentioned as relevant and important.

Apart from this, a whole list of other difficulties was given in the 15 answering documents like a low level of awareness among local communities, weak advocacy of nature conservation, poor enforcement of measures, low level of interest in sturgeon conservation problems from angler associations, political resistance, lack of willingness for supporting of sturgeon research and river restoration efforts, lack of awareness by some regional authorities on the state of conservation of sturgeon species, lack of specific policies (Ann.: specificity not specified), a lack of strategies and plans for sturgeon conservation, an important ongoing national project focused on the renaturation of the Po river and biodiversity conservation (EU-IT Recovery Plan), in which sturgeon conservation is not even included. A lack of capacities and coordination between institutions, scarce communication and dissemination of information, insufficient exchange of information on sturgeon conservation measures among the national authorities. A lack of coordinated work with HPP operators and gravel/sand extractors and unsustainable operating standards for HPPs and gravel/sand extraction.

2.8 What do you want to achieve in sturgeon conservation within the next two years?

Several general and specific activities were mentioned, like securing native sturgeon stocks and increasing fish populations in general. The continuation of ex-situ measures like stocking within a

LIFE project, the maintenance of the ex-situ stock of *A. sturio* and other species, captive breeding for release in the wild, ex-situ specimen exchanges with The Netherlands and Spain for experimental releases in the Rhine and Ebro. Securing the allocation of funding for the Centre for the Conservation of the Biodiversity of the Po basin (CCB-PO) in order to establish an ex-situ facility for all three naturally occurring sturgeon species in Italy, establishment of ex-situ broodstock, improvement of controlled reproduction, increasing numbers of juveniles for release, establishing an inventory of sturgeon farms and efficient control over trade and stocking of sturgeons.

On-going habitat restoration in the Upper Danube (several projects, see River Basin Management Plan), studies on relationships between *A. sturio* and *Silurus glanis* (European Catfish), reduce fishing pressure on sturgeon and reduce level of poaching.

Initiate sturgeon conservation in the Baltic Sea in cooperation with other countries, conduct a feasibility study of the restoration of sturgeon historical spawning grounds, preparation and submission of successful projects, finding good external project partners, strengthen scientific cooperation, capacity building in sturgeon research with development of the Fisheries Management Research Group in the Széchenyi István University (expert exchange with other countries, increase staff, obtaining monitoring and laboratory infrastructure). More communication on the international level sharing information and best practices, more communication on the national level sharing information and best practices and forming an expert group on sturgeon conservation, more knowledge, adaptive management, general progress. Raise awareness of the fisheries sector and get the private sector, represented by HPPs and sand and gravel extraction licensees, to willingly apply sustainable operating standards, overcome political resistance and promote the implementation of the Hungarian Action Plan for Sterlet Conservation.

The development of effective and innovative monitoring methodology, the monitoring of wild populations at sea, in estuaries and rivers as well as their reproduction, success controls of previous stockings by documenting returning adult sturgeons, obtaining data from the monitoring of sturgeon migration, elaborating a feasibility study of fish passage at Gabčíkovo based on Sterlet monitoring data and research on the general effects of sturgeon stocking on the aquatic environment.

2.9 What do you want to achieve in sturgeon conservation within the next five years?

Again, the answers consisted of a mixture of general and very specific aims, like e.g. a positive population trend for Sterlets in the Middle Danube, ensuring viable populations of sturgeons in general and the strengthening of sturgeon populations in the Baltic Sea.

Ensure habitat availability, accessibility and continuity, reduce illegal fishing and bycatch of sturgeons and effective spawning and juvenile survival. Establish the Kolkehi protected areas extension and law enforcement practice. Establishment of the planned Rioni Protected Area for the protection of spawning grounds. Study Sterlet migration and identification of key habitats for protection and restoration. Develop concrete proposals for restoration of the fluvial ecological corridor along the impact area of the Gabčíkovo river barrage system and develop a fish bypass to facilitate Sterlet migration (Hungary and Slovakia). Establish protected areas for e.g. spawning and ensure smooth migration at Iron Gates I and II (Serbia). Apply available data from sturgeon migration routes and habitat monitoring. Apply an ecosystem approach. Get the private sector represented by HPPs and sand and gravel extraction licensees to apply sustainable operating standards.

The establishment of a consistent sturgeon monitoring program (populations and habitat), including the monitoring of individuals from releases, as well as defining the management priorities and

objectives. An effective telemetry monitoring system to be established in the upper section of the Hungarian Danube.

The CCB-PO project (Italy) should be completed and operations have started to produce juveniles, selected and adapted for survival in the wild, implementing a breeding plan that maximizes the conservation of the residual biodiversity of the breeding populations.

By then, the finalization of the feasibility and risk assessment phase also allows for preparing the decision for an official reintroduction of the European sturgeon population in the Lower Rhine by 2030.

Information systems have been established, working groups at national level for fish migration including sturgeons exist, national APs for sturgeons have been elaborated, legislation (fisheries law, National Red List categories) has been amended to better suit sturgeon conservation and restoration, thorough studies to fill knowledge gaps of presence and distribution of sturgeons have been conducted, applications to EU projects dealing with sturgeons have been submitted. The knowledge of stakeholders and general awareness has been raised.

3 Administration

Rationale: We want to know who is involved and how.

3.1 -3.5 Institutions, entities and actors from different categories and countries are listed in Annex 1.

3.6 Do these institutions / entities interact and cooperate on the national level and how is this process organised?

All of the different actors in the answering countries interact and cooperate, according to the answers. However, the interaction and cooperation is described as being on different levels of intensity, organization and based on different foundations.

Descriptions include:

- "These entities cooperate sporadically at national level."
- "Communication takes place as needed on an ongoing basis."
- "The cooperation is weak. However, there is stronger cooperation among them in the field of issues connected to other endangered species."
- "There are multiple meetings a year to discuss the plan as described in the first action plan. The other stakeholders are updated yearly."
- "Currently, effective cooperation between scientists and NGOs (WWF) takes place on an informal basis."

The different organizations of interaction and cooperation are described by the following examples from the answers:

- "Through integration of and exchange with national stakeholders."
- "These are the main organizations working for the protection of the Baltic Sea. They interact through several working groups and meetings. There are no joint actions to protect especially sturgeon."
- "A Steering Committee and a Scientific Committee have been established as part of the 2020-2027 National Action Plan for European Sturgeon (*A. sturio*). These stakeholders are members of the committees. Thematic groups exist in the European sturgeon NAP."

- "WWF, FFI and Ilia State University are cooperating in terms of development of monitoring program, field studies, genetic studies, consultations with the local communities etc.."
- "With the initiative of the WWF Caucasus with the Ministry the Multistakeholder platform was established, which engages all relevant stakeholders, including state and non-governmental sector representatives. The first official kick-off meeting happened in the summer 2021."
- "The main functions are more or less distributed among the stakeholders."
- "The Ministry of Environmental Protection and Agriculture is responsible for overall policy of the sturgeons conservation and implementation of strategies."
- "Agency of protected Areas is responsible to defining targets and activities in it's program of work and implement the activities during next management plan cycle."
- "There is a Fisheries Management Research Group (FMRG) in the Széchenyi István University."
- "The FMRG initiates negotiations with the targets groups and stakeholders to achieve an effective cooperation on the national level. Organization of this process will be facilitated by competent advisers."
- "The NGOs and ministries all work together under the First Action Plan for the European Sturgeon (*A. sturio*) for the Lower Rhine."
- "At the national level, cooperation takes place between government offices, NGOs and research institutes. Currently, effective cooperation between scientists and NGOs in Poland (WWF) takes place on an informal basis, by financing restitution activities (financing of meetings, financing telemetry transmitters and other restitution activities from NGO funds) in exchange for support in promoting the protection of sturgeon as a flag species, whose survival is possible in natural and patent rivers, as well as in many other two-environment fish, especially those not having the ability to effectively overcome even small obstacles on the rivers."
- "The main competent institution is the Ministry of Environmental Protection, which is responsible for the nature protection system, including recreational and professional fishing. In its work, the Ministry of Environmental Protection uses professional guidelines of the Institute for Nature Conservation of Serbia and Institute for Nature Conservation of Vojvodina as well as scientific data from universities/academia. Enforcement of sturgeon conservation measures are sometimes linked with relevant NGO activities."
- "These organisations meet on seminars (e.g. in special occasion WFMD), communicate through working and expert groups preparing of some sectoral documents and plans, or on individually base. The last seminar (December 2021) was specially devoted to the issue of protection, research and management of sturgeons in Slovakia. Next meeting is planned for October 2022 by Water Research Institute/VÚVH."
- "The Department for the Environment, Food and Rural Affairs leads on species protection, conservation and restoration. The UK Sturgeon Alliance promotes sturgeon conservation and restoration within the UK. It is envisaged that the UK Action Plan, which is currently being developed by the Zoological Society of London on behalf of the UK Sturgeon Alliance, will bring about a detailed focus within the UK Sturgeon Working Group at the national level on the specific conservation and restoration requirements of sturgeon in the UK."

4 International Cooperation

Rationale: Sturgeons cross borders and are threatened by extinction internationally.

4.1 Are you cooperating with neighboring countries, or countries sharing the same populations in implementing coordinated protection/conservation measures (please list cooperations and countries)?

All answering countries cooperate with other countries on their sturgeon populations, except one, stating that there are no shared sturgeon populations with other countries within the basin.

These cooperations include direct agreements between countries and/ or institutions and entities thereof as well as the interaction of teams and individuals from different countries during actual project work, as mixed expert groups and/ or the exchange of knowledge and experience.

However, also the cooperation within international plans, agreements and organizations of different kinds like the European commission, as contracting party to the Bern Convention, the International Commission for the Protection of the Danube (ICPDR), the EU Strategy for the Danube Region (EUSDR), the OSPAR Convention, the HELCOM Expert Group on Sturgeon Remediation (EG STUR), the Danube Sturgeon Task Force (DSTF), the Danube River Basin Management Plan (DRBMP) play an important role according to the answers.

One answer states, that the cooperation on the level of state authorities or agencies is not coordinated and another that the NGO sector has a leading role in international cooperation.

4.2 How is this process coordinated?

This was answered in accordance with the answers to 4.1 above. A lot of international cooperation is coordinated within the framework of international organizations, agreements and plans. (e.g. within ICPDR and its DRBMP, the ICPR – International Commission for the Protection of the Rhine, EG STUR by HELCOM).

Coordination of international cooperation also takes place within projects, meetings, scientific committees, inter-governmental agreements, regional agreements, agreements between NGOs and also as informal exchanges.

Mentioned are also preliminary negotiations on cooperation to develop a bilateral research program and set up a joint monitoring system to study fish migration and habitats between countries (e.g. Hungary and Slovakia).

The following interesting statements were also made:

- "Coordination activities and structures can bring a sense of order to the resulting chaos."
- "These groups solve common plans on the Danube (e.g. Hungarian Danube navigation route/ shipway modification planned in the Sap – Szob section), where data between countries are exchanged including sturgeons (e.g. data on the occurrence of significant habitats of the Sterlet obtained from monitoring)."
- "not coordinated"
- "Whilst UK agencies are aware of developments, it is the NGOs and UK Sturgeon Alliance more broadly who are cooperating and liaising with similar minded countries, experts and stakeholders."

4.3 In your opinion, how could the Bern Convention foster exchange of information, experience and expertise on the topic among Contracting Parties?

One statement summed up the answers to this topic quite nicely: " The Bern Convention can foster exchange of information, experience and expertise on the topic among Contracting Parties through holding regular meetings of focal points and establishing a system for exchanging information about sturgeons."

However, also supported meetings on specific conservation aspects or species, conducting workshops and/ or provide case studies to assess capacities and best practice examples in order to implement the sturgeon conservation plan activities more effectively were mentioned.

According to the input, this could or should also include the function as information-hub about competent experts and methodologies (e.g. appropriate equipment, cost-effective methods etc.), the regular sharing of data (e.g. data on catch/ bycatch) and relevant information (e.g. planned and current activities, studies, legislation, coordination issues, best practice examples etc.), exchange on capacities within a region or even the establishment of a mixed group of experts and stakeholders. Fostering international collaboration by the actual exchange of certified breeders and juveniles for ex-situ measures.

Supporting research and promoting scientific networking (e.g. by initiating a COST-action to formally establish a working group on sturgeons) or promoting specific topics like broodstock maintenance, juvenile releases, effect of invasive species and exotic sturgeons and genotypes from aquaculture, provide funding for actions and meetings and raise awareness of the fishing world, were also mentioned.

As one statement put it:

- "This should be an agenda item during the first meeting of the Group of Focal Points for the conservation of sturgeon."

4.4 Which topics should be discussed most importantly during the first meeting of the Group of Focal Points for the conservation of the sturgeons under the Bern Convention (please list below in order of importance/ No.1 – most important)?

Implementation of the PANEUAP, appropriate conservation measures, coordination of and funding for sturgeon conservation, the development of system capacities, best practice examples also for negotiations with stakeholders (e.g. HPPs, extraction licensees, fishermen, etc.). The design and implementation of a monitoring program by bringing together the relevant experts/ expertise (e.g. in form of a pan-European monitoring protocol).

Habitat protection and restoration, the establishment of a sturgeon database and a system for information exchange (on e.g. projects, studies, guidelines, technical guidelines like e.g. on passing solutions and up- and downstream passage), function controls and evaluating the impact of ex-situ measures. An overview of the distribution of each species and their main habitat features (e.g. ecology of sturgeon – feeding, reproduction, spawning, migration) , an alignment of national legislations, preventing sturgeon bycatch and protecting historic sturgeon grounds outside of coastal waters. Understanding the genetics of historic populations.

Developing joint approaches and project development, invasive non-indigenous species, their impact on the native populations and how countries are tackling these problems.

4.5 What do you expect from this meeting?

International coordination and funding for sturgeon conservation, a clear goal to work towards and policy coordination, best practice examples, meeting with the Sturgeon Focal Points from other countries and foster the exchange of information among contracting parties, exchange experience and establish contacts.

Sturgeon migration facilities design and parameters fit for the Danube Sturgeons.

The preparation of a policy document to support the allocation of national and European funds for the high priorities of the PANEUAP.

Contribute to the conservation of sturgeons on an international level.

Information about international initiations and programs, a timeline for the restoration, improvement of conservation measures, priority measures and more effective negotiations with the stakeholders.

Exploring opportunities for cooperation and arranging new projects.

5 Funding

Rationale: Funding is a critical and pivotal issue. How far have you come in securing funding already and what can others learn from you?

5.1 Have you identified/allocated funding for the implementation of your recovery plans? If yes, from which source (please distinguish clearly between regular public - and project based funding)?

The answers to the questionnaire document a mix of public (budgetary, projects) and private funding or of either one for financing sturgeon related activities and measures. There is no underlying pattern or scheme to access certain types of funding for sturgeon conservation and restoration, which is often project related and/ or provided by private entities and NGOs. However, also stakeholders like energy companies and anglers- and/ or fishing associations provide financial support for specific measures (e.g. aquaculture plant/sturgeon center, releases to support populations) with the latter ones not always being in line with science-based plans and strategies.

The statements also document unsuccessful attempts at applying for funding.

5.2 If funding could be secured, is it sufficient to also meet the priorities and over longer time-spans ? If not, until when is funding secured?

There is no secured long-term funding documented within the answers to the questionnaire. Some statements document that there is no or not sufficient information on this topic. Even for the French National Plan, displaying a very high level of organization, coordination and best practice, funding is not secured for the whole period of 2020-2029. Project funding is seen as a good start for monitoring and information dissemination, yet in longer perspective more funding is deemed necessary. In one case, funding is obtained annually but supported by multi-annual programmes.

Relevant additional individual answers on the topic:

- "In a optimistic view, funds could be secured within the next 12 months for a six years period."
- "Sturgeon restoration is a long-term process and there are no funding sources in the country dedicated to long-term programmes."
- "Conservation measures can be implemented through long-term projects that require additional secure funding."

6 Needs Assessment

Rationale: Exchange of capacity, expertise and information is a basic prerequisite for efficient sturgeon conservation. What would you need and wish for to work on sturgeons, if this was an ideal world?

6.1 Are there any specific needs for capacity building in your country or need for expert exchange with other range countries?

Not all of the 15 countries answered this question. All answering ones expressed the additional need for certain resources.

Capacity building was seen as a basic task, relevant for better coordination, cooperation, reporting skills and the harmonization of plans and strategies within the country, among countries (e.g. Baltic Sea, Serbia and neighboring countries) and in regions. For this, also the widening of scope and the involvement of expertise from such diverse sides as environmental protection and water management in working groups (inter-sectoral) was demanded.

Relevant statements:

- "Yes. The lack of capacities is notable, more personal capacities are needed to support the implementation of PANEUAP, especially in the Ministry of Environment (fish expert)."
- "We have a problem with the lack of human resources, which we feel should be addressed immediately."
- "Exchange of experts with other countries is an effective way for the expertise development in the Hungarian sturgeon research team, which can contribute the success of project applications and the strengthening of sturgeon (and fish) conservation efforts in the Middle Danube."
- "The need for a greater interaction at national level is important specifically for: i) for planning conservation activities on scientific basis, avoiding spotting actions that don't secure long term results; ii) for the characterization and genetic comparison of all breeding stock present in the Po area and the definition of a breeding plan; iii) improving the success of releasing activities, through the identification of breeding criteria of the animals to be released and the choice of the best sites for sturgeon juveniles releasing, based on ecological analysis; iv) monitoring the results of releasing activities."
- "Working on *A. sturio* we have an agreement with the French colleagues and the breeding centrum in Bordeaux."
- "So we are also working close together with the German partners of Nord Westfalia and of IGB, Berlin (for research, monitoring and knowledge exchange)."

Thus, the exchange of experts was seen as important in general, but also for specialized tasks such as monitoring, research, species identification training, sturgeon rearing for release, sturgeon and broodstock genetics and exchange of experience on mitigating conflicts with fisheries and water authorities in particular.

However, also capacity building by providing financial support for hatcheries, the acquisition of additional broodstock ("we need much more larvae, yoy and sturgeons") and equipment was mentioned (e.g. sampling tools, transport vehicle, telemetry monitoring devices, etc.)

6.2 Which general opportunities do you see in the future to further advance your national conservation and recovery plans?

(i.e. in terms of policy processes, funding, cooperation, communication....)

General opportunities are seen in more cooperation in monitoring and long-term planning, active participation in international sturgeon programmes, strengthening and building of human resources,

securing funding, experts exchanges with other countries, strengthening scientific cooperation, building capacities, ensure regular transmission of information in the form of workshops and seminars (e.g. for monitoring, migration studies, construction of functional fishpasses).

It is also stated that for sturgeon conservation, climate change and transition to green energy can have both positive and negative effects, and that one should have a better view (and plan) what one can and should achieve in the future in sturgeon conservation.

More particular opportunities are seen mainly on the national level, as the permanent prohibition on commercial sturgeon catches in Bulgaria, the restoration of old spawning grounds and habitat for sturgeons and halting poaching in Western Georgia. Companies, benefiting from the Rioni River, to be more adaptive and contributive towards the sturgeon conservation activities.

Furthermore, developing a national sturgeon recovery plan, to support the Ministry of Ecological Transition in the drafting and implementing the national Action Plan for Italian Sturgeons, to advance in the preparation of national Guidelines and Best Practices for sturgeon conservation, submission of successful projects for implementation of the Hungarian Action Plan for Sterlet Conservation.

Relevant statements:

- "There is a need for closer cooperation, communication and mutual coordination of experts and institutions, as our conservation plans for sturgeons are not clearly defined, we see opportunities in all fields."
- "First, increased funding could improve our capacities in terms of human resources. Secondly, we hope to see some improvement in communication among national authorities, which would enable and facilitate cooperation with neighbouring states. Thirdly, we see the EU projects on sturgeon conservation as an excellent opportunity to get funding and a platform to exchange information and expertise."
- "Licensing for the managed reintroduction of native species into the UK is an established process and is tied into the UK government's species recovery and reintroductions policies. The creation of the UK Sturgeon Working Group, with its mixture of stakeholders, allows opportunities to understand the issues and requirements for sturgeon conservation and recovery in the UK."
- "Some additional opportunities to improve the effectiveness of restitution activities, including ex situ research on the condition and best adaptation of sturgeon to natural conditions after release, are currently created by the EU policy aimed at further development of aquaculture."
- "An ally in the survival of sturgeon in natural conditions, it can also be the reduction of the risk of accidental catch, due to the decrease in fishing effort on gillnets in sea areas, as a result of, inter alia, the deterioration of the condition of the Baltic cod stocks."
- "Although the decline in commercially caught fish stocks is a very negative phenomenon observed in the entire Baltic Sea, the reduction in catches should positively affect the chance of Baltic sturgeon restitution in the Baltic catchment area."

Figure 3: Sturgeon identification guide from Georgia – both result of and tool for capacity building



7 Conflicts

Rationale: Sturgeon conservation touches a lot of different sectors, often leading to conflict instead of harmony. How do you recognize and handle such conflicts?

7.1 Are there any conflicting infrastructure development projects or other economic activities (excavation of sediments, hydropower, navigation, fisheries etc.) that have potentially negative impacts on sturgeon conservation?

Not everybody had sufficient information to answer this specific question. Generally, the multitude of different uses of e.g. like on a large and international river like the Danube was seen as an important and inherent source of conflict.

Already existing hydropower structures (e.g. on the Rioni River, impact area of the Gabčíkovo river barrage system on the Danube River) in combination with the absence of fish passage facilities, were seen as the main conflicting infrastructures together with the excavation of sediment (sand, gravel, navigation). However, also planned new hydropower plants were mentioned (at Čunovo and on the Mura and Sava rivers) as well as navigation (e.g. in the Rhine mainly until Bonn, Dunaj-Odra-Labe navigation corridor, maintenance of the Danube River Bed, plan for Hungarian Danube shipway modification in the Sap – Szob section).

Relevant statement:

- "80% of the Danube discharge is diverted to a 30 km long bypass canal at Gabčíkovo and it resulted habitat destructions in the extensive sidearm system of the Szigetköz floodplain, which was Sterlet spawning habitat till the 1990s and famous historical sturgeon spawning ground before 20th century. In the old riverbed of the Danube, a 30 km long section remained potential habitat for Sterlet, but construction of 4 bottom sills is planned here in the coming years. The expected consequence of the planned intervention will be unfavourable for Sterlet."

Other infrastructure that was mentioned is the cooling water intake and discharge of the Paks Nuclear Power Plant (100 m³/s). It causes a thermal pollution in the Danube, which can inhibit the reproduction of Sterlet under warm weather conditions. (spawning stops above 20°C).

Another specific problem is seen in the widespread use of a chemical agent (deltametrin) in the mosquito control program in Hungary (area of 770 000 hectares is usually treated each year). Surveys demonstrated that the proportion of target mosquitoes among dead insects was only 0.1%. There is a

lack of effective measures in the practice of mosquito control in Hungary to avoid pollution of riparian zone of rivers. Mosquito treatments are often performed during the swarming period of aquatic insects, which are an important food source for fish (Sterlet).

However, some statements declared infrastructure conflicts to be solved or mitigated:

- "Presently, in the Po River, most of past conflicting infrastructure and other economic activities potentially negatively impacting on sturgeon conservation can be considered solved."
- "The protections already afforded UK wildlife and their habitats, and environmental considerations, are captured under UK law and therefore taken into consideration when planning significant infrastructure projects. The UK Sturgeon Alliance and other NGOs also play a significant role in publicly highlighting the possible impact of projects on species and their habitats to include sturgeon present in UK coastal or inland waters. This also has a bearing on development projects."
- "Projects unfavourable to European sturgeon are taken into account by the authorities applying the Avoid-Reduce-Compensate sequence in order to guarantee the good conservation of the species or its habitats."
- "River and estuary water current turbine projects ask about the effect they could have on migrating sturgeon or juveniles."
- Another statement explained measures to mitigate the negative effects of excavation: "Habitat protection is ensured by a ban on the exploitation of sediments in estuaries and rivers. For instance, excavation of sediments in the wet river bed is limited only to minimal interventions for hydraulic security while sand excavation is minimal and performed in the lateral dry riverbed."

In marine areas, fisheries (e.g. North Sea fisheries, trammel net fishing near the mouth of the Po river), is seen as one of the main negative impact for sturgeons, also as bycatch.

- "With regard to fishing, non-intentional catches are the subject of a specific awareness measure aimed at the good behaviour of fishermen in order to release European sturgeon in the best conditions."

An increase of exotic species in fish farms within the basins (e.g. used by the European sturgeon) was seen as inducing risks for sturgeon (health, hybridization...) and leading to communication difficulties (protected sturgeon vs farmed sturgeon for trade).

7.2 Which ones are considered most pressing?

The most pressing sources of conflict were identified by the answers as hydropower (in combination with river fragmentation/ migration barriers and the absence of passing solutions), hydromorphological alterations of the river channel (habitat modification and destruction, e.g. by navigation), the loss of lateral connectivity of the river with its floodplain, fisheries in sea and river (catch and bycatch, e.g. not sufficiently regulated trammel fishing), and the intentional and unintentional introduction (escape from aquaculture) of non-native and invasive fish species (e.g. European Catfish - *Silurus glanis*) and exotic sturgeon species.

However, also a non-cooperative attitude of the water sector (river engineering, navigation) and of fishing associations to accept nature conservation aspects was mentioned as source of conflict.

One country answered: "Nil at present."

7.3 Are measures planned or already undertaken to resolve these conflicts?

Not all of the conflicts have been tackled directly by the answering countries so far. One answer stated, that all conflicts had already been taken care of by the respective River Basin Management Plan.

All answers document that there is awareness on the necessity to mitigate conflict. Relevant statements: "Application of conflict management methods, taking into account the practices of other countries."

- "There are measures planned and undertaken that could benefit also on sturgeon projects if relevant and funded in the future."
- "Negotiations with stakeholders, informing the public, influencing policy decisions etc.."
- "Gathering evidence-based information to prove pressures and negative changes in sturgeon populations and habitats."
- "Measures are planned to negotiate with private sector (HPPs, sand and gravel licensees) to apply sustainable operating standards."
- "UK legislation and the creation of protected areas contribute to the protection of sturgeon and their habitats. but correlation and significance of impact factors are partly, still needs further clarification."

However, some concrete examples are given for the types of conflict to resolve or mitigate (fisheries, passing solutions, habitat restoration, invasive and exotic fish and sturgeon species).

- "Yes, several studies for the impact of shipping are planned. But also to look for solutions."
- "Locally, experimental regulation fisheries are tested at sites essential for diadromous fish."
- "Trawling within the three miles along the whole coast has been completely banned."
- "We have several awareness programs to involve the fishermen. They are rewarded for reporting a caught sturgeon. They have to make a picture following instructions to determine the species and afterwards release them alive."
- "With respect to professional fishing in the Po delta and along the Adriatic coast, measures for the spatial limitation of the use of trammel nets must be undertaken. To this, research based on radio tracking is needed to map sturgeons home range along the coast, since data are not available. This will make it possible to adapt the regulations with the establishment of no-fishing zones."
- "The Ministry is in the active negotiation process with the existing HPPs to build fish passways on Rioni River, and there is an agreement reached with one of the existing HPP company regarding building the fish passway for migration towards upper reaches of the river."
- "There are initial studies of fish passes at Gabčíkovo, and restoration measures are planned on river branches."
- "This conflict with the Iron Gate I and II hydroelectric dams will be solved through regional international projects."
- "Measures are taken to improve fish migration, but these are not targeted for sturgeon."
- "Commercial fisheries bycatch is monitored by e.g. EU Fisheries Data Collection."
- "Observations on sturgeon are far too few to estimate either bycatch mortality or bycatch hot spots."
- "Regarding exotic sturgeon, the rules for fish farming are strengthened compared to the usual rules for farming to avoid escapements. In the case of catfish, the acquisition of knowledge is initiated."
- "In the contrast of alien species, the reintroduction of sturgeons may have positive effects, through competition, as far as the common and Adriatic sturgeon are concerned, and through

predation on alien species and competition with alien predators, by introduction of the Beluga sturgeon."

- "To mitigate the loss of lateral connectivity, measures are being planned, including the restoration of the floodplains of the middle stretch of the Po, aimed at increasing the availability of refuge and growth habitats for juveniles. This action is part of the multi-year plan financed within the framework of the National Recovery and Resilience Plan and coordinated by the Po River District Authority, the involved Regions, Emilia-Romagna, Lombardy, Veneto and Piedmont, under the guidelines of the Ministry of Ecological Transition."

Interpretation of results – Status, Deficits, Best Practice

General situation

The 15 answers to the questionnaire document a lot of activities, projects and programmes within the community of the contracting parties to the Bern Convention. However, these 15 answers constitute only a sample of this specific community and, unfortunately, potentially important "sturgeon countries" from the contracting parties are missing from this survey.

The situations encountered on the national and regional levels differ a lot, due to different basic conditions like e.g. the presence of wild relict populations of sturgeons, the access to spawning rivers or marine habitat, the existence of national plans for sturgeon conservation, national and regional networks and memberships in organizations or agreements on sturgeon conservation.

Therefore, observed deficits and best practice for the main topics listed below and drawn from the answers to the questionnaire, can only be listed in a general way, have to be regarded as "potential" if not present in the current sample (as it is not always known, where applicable), and may be applied to only single countries or regions. In the case of international cooperation, the scope for deficit and best practice is even wider, formulated very generally and may be applied to global sturgeon conservation and restoration aspects within the Northern Hemisphere, as natural distribution area for sturgeon species in general.

Deficit:

- **A lack of participation on the level of the Bern Convention.**

Best Practice:

- **There is participation and cooperation on the level of the Bern Convention.**

Indicator of progress:

- **A continued participation by already contributing and participation by additional contracting parties to the Bern Convention.**

1 Occurrence / Distribution

Most answering countries stated to have sufficient knowledge on former sturgeon distribution within their range to conduct conservation and restoration measures, with the exception of one. Since the 15 answers at hand constitute only a sample of the community of contracting parties to the Bern Convention, it cannot be ruled out that there are more countries with the need to do additional research in this field.

Databases for sightings and catches do exist, yet not everywhere and there are no shared regional or international databases. All answering countries were able to name relevant water bodies for sturgeon conservation and restoration. It is not always possible to distinguish between wild native fish and animals originating from human activities in catches and sightings.

Deficits:

- **A national and potential regional lack of information on the former occurrence of native sturgeons.**
- **A lack of databases for sightings, also on the regional and international levels.**
- **A lack of ability to distinguish between native wild individuals, individuals from release programmes and introduced exotic sturgeons and/ or escapees from aquaculture.**

Best practices:

- **Information on former occurrences of native sturgeons is available and priority water bodies are identified.**
- **Databases on sightings and catches have been established.**
- **Participation by stakeholders (e.g. fishermen) and citizens via reporting opportunities/ tools (e.g. mobile phone) is ensured.**
- **Individual sturgeons from sightings and catches and their origin can be identified by means of morphometrics, genetics, markings and other available information.**

Indicators for progress:

- **An increase in the number of countries having sufficient information on former occurrences of sturgeons.**
- **Increases of number of databases on catches and sightings.**
- **The existence and an increase in shared regional or European databases on sightings and catches.**
- **An increased number of opportunities/ tools for the participation of stakeholders and citizens in the documentation of sightings and catches.**
- **An increased participation of stakeholders and citizens in the documentation of sightings and catches.**

2 Ongoing protection measures

This main topic delivered the most numerous and comprehensive answers. Yet, some clear underlying patterns could be observed. Legal protection of the species is provided to different extents by all answering countries. This ranges from total bans for catch, possession and transport on the national level to the application of closed seasons and size limits by regional laws and regulations. The enforcement of laws is executed on different levels of intensity.

The PANEUAP seems to be well known, yet only three countries in the sample at hand have developed their own official national plans for sturgeon conservation and restoration, and sturgeon protection and conservation can also be anchored in several different documents. Others are in the process of developing their own plans and frameworks and the PANEUAP is stated to be seen as sort of a toolbox containing useful ideas. It is not clear from the answers at hand, if a single central national document on sturgeon conservation and restoration is always seen as being needed.

Besides legal protection, the answers also document established protected areas/ zones by some countries, habitat protection, restoration of the ecological corridor/ river continuity, prohibition of

unsustainable activities (e.g. sediment extraction, bycatch) and targeted environmental impact assessments as important means for sturgeon conservation and restoration.

Research and detailed knowledge on and of sturgeon biology, ecology and population status, as well as the application of science-based methodology was seen as important for sturgeon conservation. Specifically the lack of sufficient knowledge on population status and developments (monitoring methodology), technical standards for sturgeon migration aids at barriers, best practice methodology in ex-situ measures to preserve genetic traits and the impact of invasive species were seen as detrimental for the development of applied measures.

Deficits:

- **A lack of legal protection for native sturgeon species.**
- **A lack of coherent national plans or frameworks for sturgeon conservation.**
- **A lack of coherent legal protection or harmonized regional / international legal protection.**
- **A lack of enforcement of legal protection.**
- **A lack of protected areas.**
- **A lack of necessary research on sturgeon needs for conservation and restoration.**
- **A lack of necessary knowledge and technical guidelines on sturgeon conservation and restoration (e.g. preservation of genetic traits in ex-situ measures, standards for sturgeon migration aids at barriers, monitoring methodologies).**
- **A lack of sustainable management and operational procedures in relevant and related activities (e.g. sediment extraction, aquaculture, fishery, navigation, hydropower).**
- **A lack of awareness by the general public, but also by stakeholders for sturgeon conservation issues.**
- **A lack of involvement of the general public and stakeholders in sturgeon conservation.**
- **A lack of population support from ex-situ measures.**
- **A lack of consideration of genetic aspects in sturgeon releases.**
- **A lack of pre-planned emergency procedures such as e.g. incidental catches of rare individuals or for the release of accidentally caught animals (bycatch).**

Best practices:

- **Sufficient legal protection is in place, enforced and harmonized over the range of populations.**
- **Research programmes on knowledge gaps are in place or are initiated when questions pop up.**
- **Protected areas and zones for native sturgeon populations in freshwater and marine environments, sufficiently covering the sturgeon life-cycle, have been established or are established as soon as new aspects of the sturgeon life-cycle become known.**
- **Technical guidelines (e.g. migration aids, monitoring, genetic aspects of ex-situ measures) are available or are being developed, as soon as they are needed.**
- **The general public and the stakeholders are informed and involved in sturgeon conservation.**
- **Sustainable management and operational procedures in relevant and related fields and sectors are in place.**
- **Genetic aspects of population support and rebuilding are considered and respected before the release of animals.**

- Sufficient population support is provided by ex-situ.
- Emergency procedures for handling and saving of rare animals are in place.

Indicators of progress:

- New laws, adoption and harmonization of legislation to better comply with sturgeon conservation and restoration.
- Research programmes on urgent questions are in place or are initiated.
- The development and publication of needed knowledge and technical guidelines.
- A recovery plan for each sturgeon population is developed, also covering genetic aspects.
- The development or adoption of emergency procedures for handling and securing rare individuals.
- The adoption or development and establishment of sustainable management and operational procedures in related and relevant fields and sectors.

3 Administration

All answers document the presence of different actors and entities in sturgeon conservation and restoration on the national level. Cooperation between these actors is very diverse, organized very differently and ranges from informal communication between individuals to official organized/ formalized and regular contacts between actors in meetings and workshops.

Deficits:

- A lack of actors and entities within certain categories.
- A lack of effective cooperation.
- A lack of defined common aims and resulting activities and projects.
- A lack of regular cooperation and communication.
- The competition of other conservation priorities with sturgeon conservation and restoration.
- A lack of a clear definition and distribution of tasks.

Best practices:

- The comprehensive cooperation of actors and entities from all levels, fields and sectors in sturgeon conservation and restoration towards a common goal.
- A harmonization and coordination of priorities of sturgeon conservation and restoration with other conservation priorities.

Indicators for progress:

- An increase in actors and entities from different categories on the national level.
- An increased cooperation between different actors and entities (documented by e.g. agreements, meetings, workshops).
- An increased number of cooperative activities and projects involving several actors and entities from different categories.

4 International Cooperation

All answering countries cooperate internationally to a certain extent and advocate or support international cooperation for a variety of needs and reasons. Cooperation ranges e.g. from the deployment of foreign/ international experts, informal exchange and communication of experts,

bilateral approaches on shared populations and tasks (in e.g. shared water bodies), to the membership and participation in regional and international agreements and strategic tasks (e.g. international river basin management plans).

Deficits:

- **A lack of sufficient international cooperation on shared sturgeon populations.**
- **A lack of a clear definition and distribution of tasks.**
- **A lack of international frameworks and organizations.**
- **A lack of effective cooperation.**
- **A lack of defined common aims and resulting activities and projects.**
- **A lack of regular cooperation and communication.**

Best practices:

- **All countries within a certain region cooperate effectively on shared sturgeon populations.**
- **All countries cooperate effectively on the international level on common tasks of sturgeon conservation and restoration.**

Indicators for progress:

- **An increased cooperation of countries within a region and on shared populations.**
- **An increased international cooperation of countries on common tasks of sturgeon conservation and restoration.**

5 Funding

The main topic of funding can be seen as a key basic topic, which is also reflected by its being the main chosen priority among the objectives of PANEUAP and within the scope of answers to this questionnaire (see "2.5 Have you set priorities for implementation?").

The funding of activities for sturgeon conservation and restoration consists of mixes of public and private funding, as well as project and institutional funding within the scope of this survey. Also, there is no regular long-term funding. By having to apply for funding within more general conservation programmes, sturgeon conservation and restoration is put in direct competition with other important conservation priorities.

Deficits:

- **A lack of specific funding dedicated to sturgeon conservation and restoration.**
- **A lack of long-term funding needed for long-term activities (e.g. multi-decadal rebuilding of populations by ex-situ measures).**

Best practices:

- **Funding is available and dedicated specifically to sturgeons.**
- **Funding for long-term measures is available (comparable to public tasks on infrastructure like e.g. traffic, bridges, schools).**

Indicators for progress:

- **Funding instruments dedicated to sturgeon conservation and restoration are developed and implemented, including instruments and tools for necessary long-term funding.**

6 Needs Assessment

The answers to this main topic documented both very general and specific needs. Capacity building was seen as a basic and necessary task by all answering countries. This included the boosting of mere "personpower" and logistics, but also the inclusion of expertise from different sectors. Specific expertise and experience for improving and harmonizing coordination, cooperation, reporting skills in national, regional and international activities was seen as important. Last but not least, capacity building in specific technical fields like e.g. monitoring, ex-situ measures and habitat protection/restoration, awareness raising and conflict mitigation, also by international communication, cooperation and exchange, was perceived as important and constructive.

Deficits:

- **A general lack of capacity and capacity building.**
- **A lack of capacity on the national level.**
- **A lack of a specific capacity.**
- **A lack of working resources (e.g. time, salaries, funding) in existing capacities.**
- **A lack of internal or international exchange of and on capacities.**
- **(Potentially a lack of motivation and an excess of frustration.)**

Best practices:

- **General and specific capacities are available to work on the tasks of sturgeon conservation and restoration.**
- **Wherever and whenever the general or a specific capacity for working on a task is not available, it is built or acquired.**

Indicators for progress:

- **An increasing number of countries is able to define and denominate their lacks of capacity necessary for sturgeon conservation and restoration.**
- **Additional general and specific capacities for sturgeon conservation and restoration are built.**

7 Conflicts

Knowledge or information on conflicts was not readily available for everybody participating in this survey. Generally, pressure on the aquatic habitat and biocenoses by a multitude of different uses, was seen as an inherent main driver for conflict. Specific uses in combination with unsustainable operating standards, like hydropower, navigation, extraction of sediments, water abstraction and thermal pollution, fisheries (specific types of fisheries, bycatch, poaching), the widespread use of chemicals and unsustainable aquaculture practices were seen as detrimental specifically, by altering or destroying continuity and connectivity, habitat, leading to a loss of individuals or deteriorating the viability of populations, respectively. Another perceived source of conflict was seen in a non-cooperative attitude

by stakeholders and other sectors of use, as well as a non-acceptance of nature conservation aspects. However, there were also examples of prior conflicts having been mitigated or solved.

Deficits:

- A lack of information on conflicts or upcoming conflicting infrastructure and activities.
- A lack of information on negative effects of infrastructure and activities (e.g. bycatch) on sturgeon conservation and restoration.
- A lack of knowledge and experience on mitigating conflicts.
- A non-cooperative attitude by stakeholders and other sectors of water use.
- A lack of understanding for nature conservation aspects.
- The application of unsustainable operating standards for certain types of activities.

Best practices:

- Conflicts are perceived in advance and mitigated or solved.
- Conflicts are mitigated or solved by involving/ informing the stakeholders.
- There is sufficient knowledge on the effects of interventions and activities on sturgeon conservation and restoration.
- Procedures for conducting environmental impact studies with regard to sturgeon conservation and restoration are in place.
- There is a climate of cooperation between stakeholders and different sectors of water use.
- There is a basic understanding of nature conservation aspects and needs.

Indicators for progress:

- An increasing number of conflicts can be identified in advance, i.e. knowledge on upcoming conflicts by e.g. infrastructural interventions and other activities becomes readily available.
- There is an increased effort in research on influencing factors on sturgeon conservation and restoration and the effects of interventions and activities.
- There is an increased number of environmental impact assessments taking into account the needs of sturgeon conservation and restoration.
- There is an increased number of cooperations on sturgeon conservation and restoration between different stakeholders and sectors of water use.
- Nature conservation in general and sturgeon conservation and restoration in particular is increasingly viewed as being positive.

Figure 4: Synthèse du bilan du Plan National d'Actions 2011-2015, from PLAN NATIONAL D' ACTIONS ESTURGEON EUROPÉEN 2020-2029, a best practice example of coordinated measures along several lines of action and the possibility to "balance" and monitor progress.

Thèmes		Titre	Niveau de mise en œuvre (réalisé, en partie, non appliqué)
Animation	1	Pilotage et animation du plan national d'actions	réalisé
Axe 1 : Conservation in situ d' <i>Acipenser sturio</i>	2	Plan de sensibilisation et de communication national et international des/vers les acteurs de la pêche	réalisé
	3	Plan local de sensibilisation et communication	réalisé
	4	Actions de formation des administrations	réalisé en partie / voire non réalisé
	5	Lutter contre le braconnage y compris en mer	réalisé en partie
	6	Prévenir les risques d'introduction dans le milieu naturel d'espèces d'esturgeons allochtones	réalisé en partie 40%
	7	Veille sur les captures accidentelles en mer et en estuaire	réalisé
Axe 2 : Protection des habitats fluviaux et estuariens et libre circulation d' <i>Acipenser sturio</i>	8	Protection réglementaire des habitats (arrêté de protection de biotope...). Intégration dans les documents de planification (SAGE, ...)	réalisé en partie 50%
	9	Informar les services compétents sur l'état et la localisation des habitats essentiels et leur protection réglementaire	réalisé
	10	Caractériser les phénomènes et les problèmes liés au bouchon vaseux	réalisé en partie 50% (problématique physicochimie de l'eau non concordant avec période de migration)
	11	Favoriser les déplacements de l'esturgeon d'europe dans l'estuaire de la Gironde et sur les fleuves	réalisé
Axe 3 : Conservation du stock de géniteurs ex situ et éle- vage des alevins jusqu'aux stades de lâcher dans le milieu naturel	12	Conserver un stock d'esturgeons européens en captivité, du stade larvaire au stade géniteur	réalisé
	13	Renforcer la population d'esturgeons européens à partir de reproductions artificielles	réalisé
	14	Veille sur la reproduction naturelle de l'esturgeon européen	réalisé / en cours
	15	Suivre l'évolution de la population d'esturgeon européen, dont évaluation des actions de repeuplement	réalisé / en cours
Axe 4 : Poursuite des efforts de recherche et coopération internationale	16	Actions de recherche prioritaires contribuant au plan national d'actions pour l'esturgeon européen	réalisé > 80%
	17	coordination du plan national d'actions avec le plan européen de restauration	réalisé

Annex 1: Institutions, entities and actors in sturgeon conservation and restoration

3.1 – 3.5 Countries in alphabetical order

Austria

3.1 State Agencies

Austrian Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology

Austrian Federal Ministry of Agriculture, Regions and Tourism.

3.2 State Research Institutions

Federal Agency for Water Management

3.3 Universities

University of Natural Resources and Life Sciences, Institute of Hydrobiology and Aquatic Ecosystem Management.

3.4 NGOs

WWF

3.5 Others

none

Bulgaria

3.1 State Agencies

Executive Environment Agency (ExEA)

Ministry of Environment and Water

Ministry of Agriculture

Basin Directorate "Danube Region"

EAFA

3.2 State Research Institutions

Institute of Biodiversity and Ecosystem Research at the Bulgarian Academy of Sciences

3.3 Universities

School of Biology at the University of Sofia

3.4 NGOs

WWF

3.5 Others

none

Czech Republic

3.1 State Agencies

none

3.2 State Research Institutions

none

3.3 Universities

none

3.4 NGOs

none

3.5 Others

Morava river authority, s.e. – reintroduction, communication

Finland

3.1 State Agencies

Ministry of Agriculture and Forestry

Ministry of the Environment

Centre for Economic Development

Transport and the Environment Southwest Finland

3.2 State Research Institutions

Natural Resources Institute Finland (Luke)

Finnish Environment Institute (SYKE)

3.3 Universities

University of Helsinki

3.4 NGOs

WWF Finland

The Finnish Association for Nature Conservation (FANC)

3.5 Others

Metsähallitus (National Board of Forestry)

France

3.1 State Agencies

Environmental Ministry: manager of the National Action Plan for European Sturgeon

Ministry of Agriculture: Management of Exotic Sturgeon Fish Farms and Fisheries

DREAL Nouvelle-Aquitaine: NAP coordination

OFB

3.2 State Research Institutions

INRAE regular proposal and achievements of research actions to support the conservation. Cooperation with foreign scientists working on sturgeons.

A scientific committee is planned in support of the PNA (including University of Marseille; University of Bordeaux; IGB of Berlin Germany; IRTA, San Carles de la Rapita, Spain; École pratique des hautes études Montpellier ; MIGADO NGO, le Passage, France)

3.3 Universities

Bordeaux University contributes to research on the effects of chemical contaminants on sturgeons

3.4 NGOs

MIGADO NGO coordination of the action plan, management of the ex situ stock

CAPENA NGO awareness of fishermen

Sturgeon Defense Association NGO

3.5 Others

National Committee for Maritime Fisheries and Marine Livestock (commercial marine fishermen)

National Committee for Professional Freshwater Fishing (commercial freshwater fishermen)

National Fishing Federation in France (recreational freshwater anglers)

Adour Garonne water Agency funding monitoring and research activities

Regional Council Nouvelle-Aquitaine, funding research activities

Departmental Council of Gironde, funding monitoring and conservation activities

Departmental Councils of Charente-Maritime, Dordogne, Lot-et-Garonne

Syndicat Mixte d'Études et d'Aménagement de la Garonne (SMEAG- EPTB Garonne)
Syndicat Mixte pour le Développement Durable de l'Estuaire de la Gironde (SMIDDEST – EPTB Gironde)
Public Establishment Inter-Departmental Dordogne (EPIDOR - EPTB Dordogne)
Ark Nature (The Netherlands), funding the management of the ex situ stock

Georgia

3.1 State Agencies

The Ministry of Environmental protection and Agriculture of Georgia
The State Sub-Agency Department Of Environmental Supervision
National Environmental Agency (NEA Fisheries, Aquaculture and Water Biodiversity Department)
Agency of Protected Areas

3.2 State Research Institutions

none

3.3 Universities

Ilia State University

3.4 NGOs

WWF Caucasus

3.5 Others

none

Hungary

3.1 State Agencies

Department for Fisheries in Ministry of Agriculture
Deputy State Secretary for Nature Conservation in Ministry of Agriculture
Coordinator of the EU Danube Region Strategy in Ministry of Foreign Affairs
General Directorate of Water Management
Water Directorates along the Danube
Fertő-Hanság National Park Directorate
Danube-Ipel National Park Directorate
Danube-Drava National Park Directorate

3.2 State Research Institutions

Institute of Aquatic Ecology, Centre for Ecological Research

3.3 Universities

Széchenyi István University Budapest University of Technology and Economics

3.4 NGOs

Hungarian National Fishing Association (MOHOSZ)
WWF Hungary

3.5 Others

none

Italy

3.1 State Agencies

Po River Parks (Emilia-Romagna, Lombardia, Piemonte and Veneto Regions)

Fisheries Bureaux of Emilia-Romagna, Lombardia, Piemonte and Veneto Regions

3.2 State Research Institutions

ISPRA as NFP for PANEUAP and for coordination and supervision of conservation activities

3.3 Universities

University of Padova for genetic analysis, ex-situ and restocking activities

University of Ferrara for ecological analysis, restocking and monitoring activities

3.4 NGOs

FIPSAS –Italian Federation of Sport Fishing and Diving Activities Support to restocking activities and monitoring of recaptures

WSCS World Sturgeon Conservation Society, supervision and networking of relevant conservation activities related to sturgeons

3.5 Others

Sturgeon farmers

The Netherlands

3.1 State Agencies

Ministry of Agriculture, Nature and Food Quality. Contact Menno de Ridder

Ministry of Infrastructure and Water Management. Contact Diederik van der Molen

Rijkswaterstaat. Province of South-Holland and North-Brabant.

3.2 State Research Institutions

none

3.3 Universities

Wageningen University and Research

Leiden University and Ghent University

3.4 NGOs

ARK

Sportvisserij Nederland

WNF NL.

3.5 Others

Nationale Postcode Loterij

Rheinischer Fischereiverband

Grun Blauwe Rhein Allianz

Haringvliet

Migado

Irstea

Ravon,

Deltaresm Mnarin

Vissersvereniging Zuid West

Atkbm VisNed

Vemw

Cascade

koninklijke BLN-Schuttevaer

Port of Rotterdam

Poland – no entry / information taken from text 3.6

3.1 State Agencies

Ministry of Fisheries of the Ministry of Agriculture and Rural Development(DR MRiRW)

3.2 State Research Institutions

IRŚ (Institute in the field of supporting restocking of rivers)

3.3 Universities

none

3.4 NGOs

WWF Polska Foundation

3.5 Others

HELCOM EG STUR

IUCN Sturgeon Group

Sturgeon producers and their organizations

Serbia

3.1 State Agencies

Ministry of environmental Protection

3.2 State Research Institutions

Institute for Nature Conservation of Serbia

Institute for Nature Conservation of
Vojvodina

3.3 Universities

University of Belgrade

University of Novi Sad

3.4 NGOs

Association of Professional Fisherman of
Serbia

WWF

3.5 Others

none

Slovakia

3.1 State Agencies

State Nature Conservancy of SR (Štátna ochrana prírody Slovenskej republiky)

Ministry of Environment of the Slovak Republic/MoE SR (MŽP SR) – Nature and Biodiversity
Protection Directorate and Water Directorate

Slovak Water Management State Enterprise

Water Management Construction State Enterprise

3.2 State Research Institutions

Water Research Institute of Slovakia (Výskumný ústav vodného hospodárstva)

Slovak Academy of Science (Slovenská akadémia vied – Centrum biológie a biodiverzity SAV)

3.3 Universities

Comenius University Bratislava, Faculty of Natural Sciences, Department of Ecology

3.4 NGOs

Slovak Angling Society

WWF Slovakia

BROZ

3.5 Others

Independent experts, students, Slovak Ichthyological Society

Slovenia

3.1 State Agencies

Ministry of the Environment and Spatial Planning

Institute of the Republic of Slovenia for Nature Conservation

Ministry of Agriculture, Forestry, and Food

Fisheries Research Institute of Slovenia

3.2 State Research Institutions

Fisheries Research Institute of Slovenia

The Slovenian Museum of Natural History

3.3 Universities

The Biotechnical Faculty of the University of Ljubljana and its National Institute of Biology

3.4 NGOs

National Union of Slovenia for Fishing

Slovenian Native Fish Society

3.5 Others

Centre for Cartography of Fauna and Flora

Sweden

3.1 State Agencies

Swedish Agency of Marine and Water Management

Swedish Environmental Protection Agency

County Administrative Boards

3.2 State Research Institutions

Gothenburg University (GU)

Stockholm University (SU)

SLU University (SLU)

3.3 Universities

Gothenburg University (GU)

Stockholm University (SU)

SLU University (SLU)

3.4 NGOs

WWF

CCB

SNF

3.5 Others

none

United Kingdom

3.1 State Agencies

Department for Environment, Food and Rural Affairs

Environment Agency

Maritime Marine Organisation

Natural England

Joint Nature Conservation Council

Marine Scotland Natural Resources Wales

Devon and Severn Inshore Fisheries Conservation Authority

3.2 State Research Institutions

Centre for Environment, Fisheries and Aquaculture Science

3.3 Universities

University College London

Hull University

Bangor University

3.4 NGOs

Natural History Museum

Angling Trust

Blue Marine Foundation

Friends of the River Crane Environment (FORCE)

Institute of Fisheries Management

Marine Conservation Society

Rewilding Britain

Salmon & Trout Conservation

Severn Rivers Trust

West Country Rivers Trust

Wye & Usk Foundation

Zoological Society of London

Blue Marine Foundation

3.5 Others

National Research Institute for Agriculture, Food and the Environment
(France)

Nature at Work (Dutch consultancy)