NASCO	**Council** ***Annual Progress Report on Actions taken under the Implementation Plan for the Calendar Year 2021 EU – Germany***	**CNL(22)26**

Annual Progress Report on Actions taken under the Implementation Plan for the Calendar Year 2021

The Annual Progress Reports allow NASCO to evaluate progress on actions taken by Parties / jurisdictions to implement its internationally agreed Resolutions, Agreements and Guidelines and, consequently, the achievement of their objectives and actions taken in accordance with the Convention. The following information should be provided through the Annual Progress Reports:

- any changes to the management regime for salmon and consequent changes to the Implementation Plan;
- actions that have been taken under the Implementation Plan in the previous year;
- significant changes to the status of stocks, and a report on catches; and
- actions taken in accordance with the provisions of the Convention.

In completing this Annual Progress Report please refer to the ***Guidelines for the Preparation and Evaluation of NASCO Implementation Plans and for Reporting on Progress****, CNL(18)49*.

These reports will be reviewed by the Council. Please complete this form and return it to the Secretariat **no later than 1 April 2022**.

Party:	**European Union**
Jurisdiction / Region:	**Germany**

1: Changes to the Implementation Plan

1.1 Describe any proposed revisions to the Implementation Plan ***(Where changes are proposed, the revised Implementation Plans should be submitted to the Secretariat by 1 November).***

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1.2 Describe any major new initiatives or achievements for salmon conservation and management that you wish to highlight.

Several water-engineering measures were finalised in the Rhine tributaries in 2021 and further projects are either in the planning or implementation stage. The aims of these measures are to improve habitat quality and migration and to ensure sufficient drainage. These measures might significantly improve migration to known spawning areas, spawning activity, juvenile salmon abundance and the resulting long-term migration of juvenile salmon.
Due to the increasing development of high-quality habitats for salmon in the middle reaches of resettlement waters, as well as descent aids and protection facilities at hydropower plants, stock improvement measures can be relocated to such favourable sections upstream.
The fish passage facility Geesthacht (South) that is mainly used by salmon is going to be reconstructed and optimised until March 2023.

The water-cooling device that was installed in the hatchery Silmersdorf (FARIO e.V.) in 2020 was able to prevent a great amount of the losses that would have been caused by fluctuations in temperature.
Existing groundsills (ca. 4) built from armourstone are going to be converted into gravel-spawning habitats in the river area of Wittenberg in 2022 in the course of river maintenance in accordance with the Saxony-Anhalt flood protection and water management agency.

2: Stock status and catches.

2.1 Provide a description of any new factors that may affect the abundance of salmon stocks significantly and, if there has been any significant change in stock status since the development of the Implementation Plan, provide a brief (200 word max) summary of these changes.

In 2021, only 173 salmon along with little natural spawning activities were registered in the Rhine catchment. This was the lowest number of records since the 1990ies. At least for the Lower Rhine, low discharges in autumn could have attributed to the low number of returning adult salmon. Furthermore, the numbers for the fish pass Iffezheim in the Upper Rhine (usually one of the highest numbers in the basin) for 2021 are only estimations since video monitoring has not (yet) been evaluated. In 2021, 1.837.183 young salmon were introduced in suitable tributaries by stocking measures in the whole catchment area of the Rhine.
Low levels of rainfall and drainage in the summer months up until the upstream migration season between 2018 and 2020 and the low oxygen levels in parts of the Elbe (around Hamburg) that were connected to this might have had a long-term negative impact on the migration patterns of salmon. In 2021, the precipitation levels increased, but it is not clear yet if this affected migration performance.
The accessibility of spawning and juvenile fish habitats is continuously compromised by beaver activity, which is increased by the abundance of energy crop fields near waterbodies.
A male pink salmon (Oncorhynchus gorbuscha) was caught in the lower course of the Elbe. Captures of pacific salmon species are increasing.
Due to the current decrease in passability of the Geesthacht barrage, negative impacts on the development of salmon projects are expected.

2.2 Provide the following information on catches: ***(nominal catch equals reported quantity of salmon caught and retained in tonnes 'round fresh weight' (i.e. weight of whole, ungutted, unfrozen fish) or 'round fresh weight equivalent').***

	In-river	Estuarine	Coastal	Total
(a) provisional nominal catch (which may be subject to revision) for 2021 (tonnes)	0,1t by recreational fisheries in Lower Saxony, 0.04t by recreational fisheries in Brandenburg			0.14 tn
(b) confirmed nominal catch of salmon for 2020 (tonnes)	0,2t by recreational fisheries in Lower Saxony, 0,05t by			0.25 tn

	recreational fisheries in Brandenburg			
(c) estimated unreported catch for 2021 (tonnes)	0,1t in Baden-Wuerttemberg			0.1tn
(d) number and percentage of salmon caught and released in recreational fisheries in 2021	A targeted catch and release in recreational fisheries on salmon does not exist in Germany.			

3: Implementation Plan Actions.

3.1 Provide an update on progress on actions relating to the Management of Salmon Fisheries *(section 2.9 of the Implementation Plan).*

Note: *the reports under 'Progress on action to date' should provide a* ***brief overview*** *of each action. For all actions, provide* ***clear and concise*** *quantitative information to demonstrate progress. In circumstances where quantitative information cannot be provided for a particular action because of its nature, a clear rationale must be given for not providing quantitative information and other information should be provided to enable progress with that action to be evaluated. While referring to additional material (e.g. via links to websites) may assist those seeking more detailed information, this will not be evaluated by the Review Group.*

Action F1:	Description of action (*as submitted in the IP*):	A targeted and monitored attempt to build up a self-sustaining salmon stock is under implementation in the Agger river system. River Agger is a tributary of the river Sieg in the Rhine catchment area. The productive capacity of the Agger river system is sufficient to carry a vital salmon population. The aim of the project is to examine whether it is possible to develop a self-sustaining salmon stock under the current framework conditions in a tributary of the Rhine.
	Expected outcome (*as submitted in the IP*):	Development and verification of a vital salmon population in the Agger river system. The objective is to generate an average fry density of one individual/m² in early summer, and an average output of 9.000 downstream migrating smolts.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	Due to the Covid19 pandemic there were no electro fishing campaigns in spring. Since there was only one adult salmon returner detected in the Agger system, as in the year before, average fry density (born 2020/2021) was estimated to be below the target. It was decided to replace the lacking natural brood in the Agger river through a restocking measure (17,800 fed fry, 121,000 summer parrs, descendants of genetically known parent fish from the Salmon Program NRW). No restocking in the tributaries. Monitoring of downstream migrating smolts (born 2019/2020) leaving the Agger system allowed an estimate of 4,200 to 12,400 individuals. These smolts result partially from natural reproduction, and partially from

		restocking (genetic samples are going to be processed in 2022 for the exact determination of the respective proportions).
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
Action F2:	Description of action (*as submitted in the IP*):	The Nahe river is the last major salmon project river in the middle section of the Rhine, where no fishing ban zone has yet been established at his mouth into the Rhine. There is a great need for action to designate a fishing ban zone in this sensitive area to protect migrating salmon during the salmon run.
	Expected outcome (*as submitted in the IP*):	Avoidance of illegal catches at the Nahe river mouth.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	Due to a serious illness of the employee of the Rhineland-Palatinate Fisheries Authority responsible for the section of the Rhine in question, the measure could not be implemented in 2021. Instead, during the period of salmon migration, the fishery control at the mouth of the Nahe River to the Rhine was increased in 2021. However, it is still intended to designate a fishing ban zone during the salmon run period at the mouth of the Nahe river into the Rhine. We hope that next year we will be able to report progress in this regard.
	Current status of action:	Not started
	If 'Completed', has the action achieved its objective?	

3.2 Provide an update on progress on actions relating to Habitat Protection and Restoration *(section 3.5 of the Implementation Plan).* ***Note:*** *the reports under 'Progress on action to date' should provide a* ***brief overview*** *of each action. For all actions, provide* ***clear and concise*** *quantitative information to demonstrate progress. In circumstances where quantitative information cannot be provided for a particular action because of its nature, a clear rationale must be given for not providing quantitative information and other information should be provided to enable progress with that action to be evaluated. While referring to additional material (e.g. via links to websites) may assist those seeking more detailed information, this will not be evaluated by the Review Group.*		
Action H1:	Description of action (*as submitted in the IP*):	The German Federal Ministry of Transport, Building and Urban Development launched the program "Ecological Connectivity in Federal Waterways" in 2012. It`s objective is to preserve and restore the ecological connectivity at about 250 barrages in German federal waterways to improve fish migration. Many of the proposed measures in the catchments of Rhine, Ems, Weser and Elbe are located in the migration routes to current or potential salmon reintroduction rivers. Hence, these activities have a high priority for reintroduction of salmon in Germany.
	Expected outcome (*as submitted in the IP*):	Increased accessibility of spawning and juvenile habitats.

	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	The drafts of the third River Basin Management Plans in Germany were made available for public information and consultation in 2021. They were finalized at the end of 2021. Based on the priorities of about 220 measures related to the ecological connectivity in German waterways, which were set by the Water and Shipping Administration and the German Federal Ministry for Digital and Transport, 52 measures were in process in Federal Waterways in 2021. Of these 52 measures, more than 30 measures are in the preliminary phase. 17 measures already continued to the planning phase, whereof six measures are in the plan approval procedure. For two measures, the procurement procedures are under way and for one measure, the construction work has begun. At the barrage of Geesthacht (Elbe) the restoration of the southern fishway is still in process. In 2021, an eel ladder was installed to enhance juvenile eel migration. The pipe system at the northern fishway was successfully installed and is operating since 2021. At the end of 2021, the Water and Shipping Administration took over Europe's biggest fishway from Vattenfall GmbH. From 2022 on, they are going to take responsibility for the operation and maintenance of the fishway on the northern side of Geesthacht barrage.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
Action H2:	Description of action (*as submitted in the IP*):	Restoring of up- and downstream river connectivity and habitat quality is highly relevant for a succesful salmon reintroduction in the German Rhine catchment area. In this context, many efforts are needed to reopen parts of the former salmon distribution area in order to establish stable salmon stocks on it.
	Expected outcome (*as submitted in the IP*):	Increased accessibility of spawning and juvenile habitats, increased habitat quality and decreased mortality due to barrages and hydropower plants.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	On 15/16 September 2021 ICPR organised a webinar "Fish protection and downstream fish migration at large hydropower plants: Sharing experiences and knowledge". The presentations are available here https://www.iksr.org/en/public-relations/events/webinar-fish-protection-and-downstream-fish-migration-at-large-hydropower-plants-sharing-experiences-and-knowledge. ICPR is going to continue to work on this issue and publish recommendations on the protection of downstream migrating fish at hydro power plants in 2024.

		The implementation of measures for the restoration of river connectivity is continuing: e. g. a new fish lift was installed in the Murg (tributary of the Upper Rhine) in 2021. Monitoring showed that all tagged smolts migrating downstream to the Sea used the Haringvliet rather than the Nieuwe Waterweg (NW) as a migration corridor following the higher discharge in the Haringvliet compared to the NW during the study period in spring.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
Action H3:	Description of action (*as submitted in the IP*):	One of the central tasks in the implementation of the EU Water Framework Directive in the Elbe catchment area is to establish river connectivity for fish. The coordination of this important water management issue takes place in the so-called supra-regional priority water network. The fulfilment of these tasks is of paramount importance for the reintroduction of salmon in the Elbe and its tributaries.
	Expected outcome (*as submitted in the IP*):	Improved access to spawning grounds and decreased mortality due to barrages and hydropower plants.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	The annexed figure (Annex 1) shows the implementation status of the restoration of ecological connectivity at transverse structures and the goals in the third management period (2022-2027) for the supra-regional priority waters in the Elbe catchment area. Annex 1 contains the total number of sites relevant to ecological connectivity in the supra-regional priority waters, including the number of sites that were already restored by the end of 2021 and targeted restoration of ecological connectivity in the third management period. Restauration measures for 79 sites with transverse structures in the German part of the Elbe River basin are scheduled for the period until the end of 2027. The focus in the third management period is not only on the supra-regional priority waters, but action targets were also set for smaller tributary waters. Thus, the diverse migratory fish projects in the Elbe catchment area are additionally supported.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
Action H4:	Description of action (*as submitted in the IP*):	The German Ministry for Food and agriculture is funding a project, which is dealing with food web manipulation as a tool for the restoration of the hyporheic zone in eutrophicated rivers. Inter alia, this project is addressing the regulation of avi predation, as a central issue. The spatial transferability and thus the potential nationwide applicability of the project results is to

		be achieved by an experiment in 5 sections of two rivers (one of them is a salmon project river), in which an increased fish stock is created by a combination of stocking and cormorant deterrence. Cormorant predation will be quantified and the direct top-down effects is going to predicted using a model. A user's guide will be drawn up which presents the measure, describes its possible implementation and presents the effects and limits of the measure. This will be accompanied by intensive public relations work (press, scientific publications, training events, public lectures), which will mainly focus on the applicability and potential impacts of food web manipulation as an innovative measure to protect biodiversity.
	Expected outcome (*as submitted in the IP*):	For the first time, this project generates scientifically reliable data relating to a sustainable cormorant management in Germany. Therefore, the project is among others also relevant for the reintroduction of Atlantic salmon.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	Because high stocks of cyprinid fish have positive effects on the habitat quality (hyporheic zone) in the salmon project river, the practicality and applicability of fish stock management as a tool in habitat improvement and biodiversity conservation is tested. As it proved difficult to increase fish density by stocking alone, deterrence of piscivorous birds, such as Cormorant seem inevitable, at least in the studied area. Especially the winter mortality of stocked fish is very high and is most probably to a large extent explained by bird predation. Of the tagged fish, only between 12 and 25% were still detected after the first winter season in two studied rivers. Summer mortality seems to be much lower, because 75% of the tagged fish were detected in autumn after stocking. First attempts to quantify predation losses by piscivorous birds show cormorant predation rates in the range of 1.4 kg d-1 in a wintering habitat of cyprinides, which amounts to roughly 230 kg fish over one winter (Mid October to Mid March) from a 50 m long oxbow (8 m width).
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	

3.3 Provide an update on progress on actions relating to Aquaculture, Introductions and Transfers and Transgenics *(section 4.11 of the Implementation Plan).*

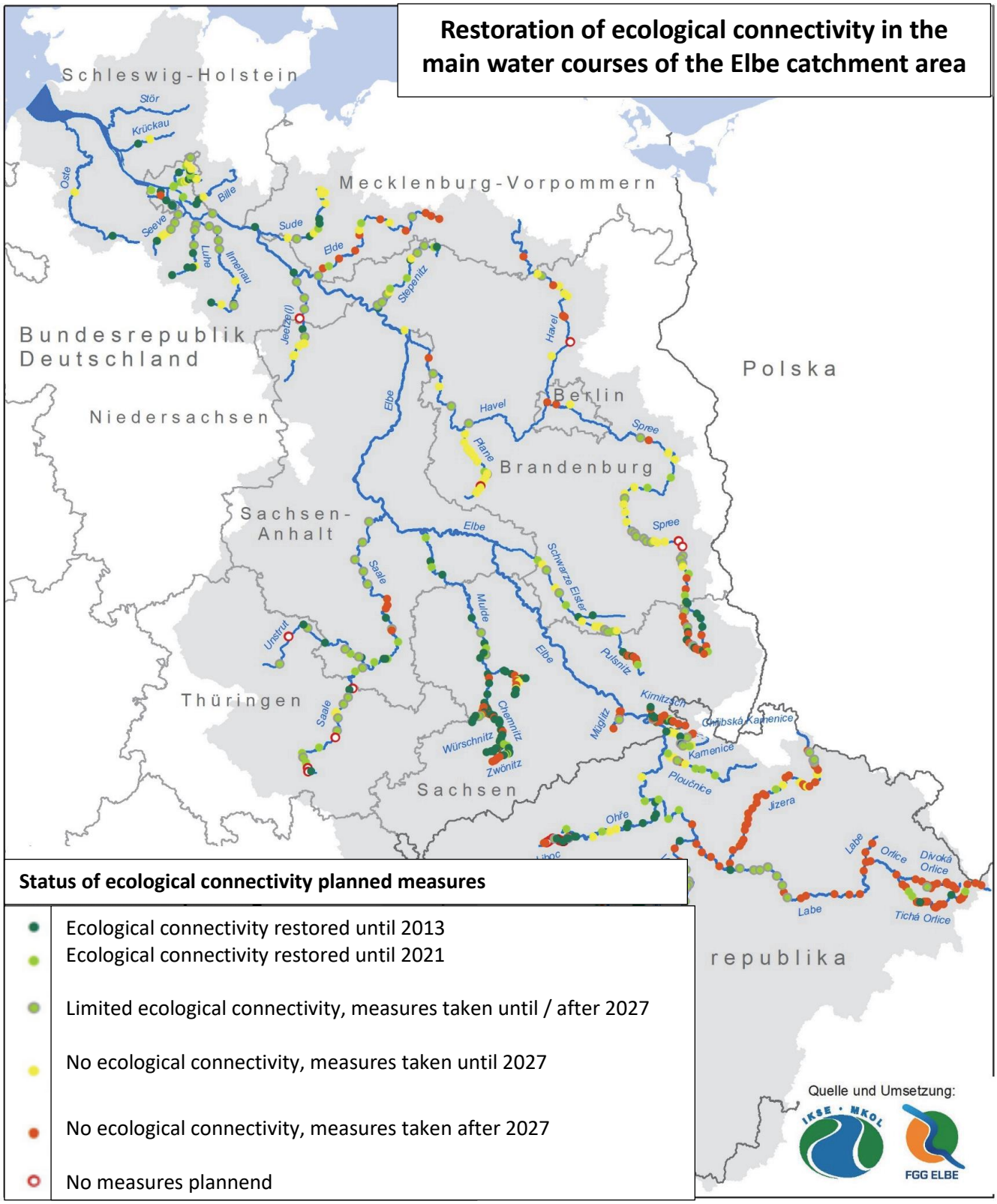
***Note**: the reports under 'Progress on action to date' should provide a **brief overview** of each action. For all actions, provide **clear and concise** quantitative information to demonstrate progress. In circumstances where quantitative information cannot be provided for a particular action because of its nature, a clear rationale must be given for not providing quantitative information and other information should be provided to enable progress with that action to be evaluated. While referring to additional material (e.g. via links to websites) may assist those seeking more detailed information, this will not be evaluated by the Review Group.*

Action A1:	Description of action (*as submitted in the IP*):	Undertake a coordinated genetic monitoring in the entire Rhine catchment area.
	Expected outcome (*as submitted in the IP*):	Find out the most successful genetic management and stocking strategies for a successful reintroduction of salmon in the Rhine catchment area. Genetic monitoring will allow assessing 1. the efficiency of • stocking measures performed; • different strains that are stocked; • different stocking strategies (age, parents used, the origin of broodstock etc.) the relative importance for stocking of the different streams of the Rhine catchment.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	In three to four winter seasons (2017-2020), parent salmon in all hatcheries (Switzerland, Germany, France) were genetically sampled according to a uniform protocol. In Switzerland, France and Germany smolts were genetically sampled in 2018-2021; first results are available for those countries. First results were also generated based on returning salmon. An intensified and coordinated sampling of returning salmon has been coordinated between countries and takes place from 2021 to 2024.The first results indicate that the genetic richness in the four German hatcheries is relatively high and is not decreasing over the analysed years. Genetic inbreeding was not detected in the hatcheries. Most returning salmon in North Rhine-Westphalia were assigned to the origin „Danmarks Center for Vildlaks“ and most returning salmon in Baden-Wuerttemberg were assigned to the origin Allier/Loire, the origins that were stocked in the respective regions. However, there are also some outliers that were identified as strays. A low number of hybrids between Atlantic salmon and brown trout were detected in a hatchery as well as in the wild.
	Current status of action:	Ongoing
	If ‘Completed’, has the action achieved its objective?	

4: Additional information required under the Convention

4.1 Details of any laws, regulations and programmes that have been adopted or repealed since the last notification.
None.
4.2 Details of any new commitments concerning the adoption or maintenance in force for specified periods of time of conservation, restoration, and other management measures.
None.

4.3 Details of any new actions to prohibit fishing for salmon beyond 12 nautical miles.
Currently not relevant for Germany.
4.4 Details of any new actions to invite the attention of States not party to the Convention to matters relating to the activities of its vessels which could adversely affect salmon stocks subject to the Convention.
Currently not relevant for Germany.
4.5 Details of any actions taken to implement regulatory measures under Article 13 of the Convention including imposition of adequate penalties for violations.
Currently not relevant for Germany.
North American Commission Members only:
4.6 Details of any new measures to minimise bycatches of salmon originating in the rivers of the other member.
4.7 Details of any alteration to fishing patterns that result in the initiation of fishing or increase in catches of salmon originating in the rivers of another Party except with the consent of the latter.


Restoration of ecological connectivity in the main water courses of the Elbe catchment area
Schleswig-Holstein
Mecklenburg-Vorpommern
Bundesrepublik Deutschland
Niedersachsen
Polska
Berlin
Brandenburg
Sachsen-Anhalt
Thüringen
Sachsen
republika
Stör
Krückau
Oste
Seeve
Bille
Sude
Luhe
Ilmenau
Elde
Jeetze(l)
Stepenitz
Havel
Elbe
Spree
Plane
Saale
Unstrut
Mulde
Schwarze Elster
Pulsnitz
Chemnitz
Würschnitz
Zwönitz
Kirnitzsch
Miglitz
Ohře
Ploučnice
Kamenice
Jizera
Labe
Orlice
Divoká Orlice
Tichá Orlice
Quelle und Umsetzung:
IKSE · MKOL
FGG ELBE
Status of ecological connectivity planned measures
Ecological connectivity restored until 2013
Ecological connectivity restored until 2021
Limited ecological connectivity, measures taken until / after 2027
No ecological connectivity, measures taken until 2027
No ecological connectivity, measures taken after 2027
No measures plannend