Agenda Item 7.1
For Information

Council

CNL(10)28

Annual Report
on Actions Taken Under Implementation Plans

EU – Germany

Annual Report on actions taken under Implementation Plan IP(07)21 – EU/Germany - for the Calendar Year 2009

The 2009 Annual Report of EU/Germany has been structured according to the Implementation Plan IP(07)21 meaning that most questions are being answered separately for each of the four river systems.

(A) Rhine: The data presented in the document originate from the *International Commission for the Protection of the Rhine (ICPR)* on behalf of the riparian federal states of North-Rhine Westphalia (NW), Rhineland-Palatinate (RP), Saarland (SL), Hesse (HE), Baden-Wuerttemberg (BW) and Bavaria (BY). Some additional data were provided by state authorities of HE, BW and BY.

(B) Ems: The data presented were provided by the federal state of Lower Saxony (NI). There are no new data for North-Rhine Westphalia (NW).

(C) Weser: The data presented were provided by the *River Basin Commission Weser (RBC Weser)* on behalf of the riparian federal states of Brandenburg (BB), the Hanseatic City of Bremen (HB), Hesse (HE), Lower Saxony (NI), North-Rhine Westphalia (NW), Saxony-Anhalt (ST). Additional data were provided by state authorities of NI, HE and Thuringia (TH).

(D) Elbe: The data presented were provided by the *River Basin Community Elbe (FGG Elbe)* on behalf of the riparian federal states of Schleswig-Holstein (SH), the Hanseatic City of Hamburg (HH), Lower Saxony (NI), Mecklenburg Western Pomerania (MP), Brandenburg (BB), Saxony-Anhalt (ST) and Saxony (SN). Additional information were given by state authorities of SH, HH, NI, MP, BB, ST, SN and by the city of Berlin (BE).

Section 1: Details of any significant changes to the management outlined in the introduction to the Implementation Plan.

The most important factor directly or indirectly influencing salmon reintroduction in Germany is the obligation of article 13 of the EU-Water Framework Directive (EU-WFD) to develop management plans by the end of 2009 in order to achieve a good ecological status of surface water bodies by 2015. Apart from the improvement of water quality one of the main objectives of most management plans is to ensure upstream and downstream migration of fish.

A: Rhine

A study on "Comprehensive fish ecological analysis, including an assessment of the effectiveness of on-going and planned measures in the Rhine watershed with respect to the reintroduction of migratory fish" has been carried out at the instigation of the ICPR. In this study salmon is regarded as a flagship species. Based on this study the federal states decide on measures to implement the EU-WFD and the "Rhine 2020" programme. Co-ordinated measures led to a "Master Plan Migratory Fish Rhine" which is part of the *International River Basin Management Plan for the Rhine* (part A, soon available in English on www.iksr.org). The "Master Plan" entered into force on 22nd December 2009 and is available in Dutch, French and German as report No. 179 on the ICPR homepage (http://www.iksr.org => Documents/Archive/Technical Reports). The measures planned should be conducted in phase I until 2015 and in phase II until 2020 or 2027 respectively. The highest priority is attached to projects on the restoration of river continuity and the improvement of living conditions of migratory fish, with an emphasis on salmon. Other important migratory species the populations of which should be supported by this programme are sea trout, sea lamprey, Allis shad and lake trout. Furthermore the projects aim at the reduction of by-catches and illegal catches and the quantitative as well as qualitative development of habitats suitable for spawning and juveniles.
In addition to the introduced master plan HE reports on a new sub-project launched in 2007 that led to fish monitoring in 2008 and was followed by a first release of 20.000 salmon fry in 2009 in the river Schwarzbach/Taunus which belongs to the tributary of the river Main.

B: Ems

The management plan for the river Ems was adopted in December 2009 (available only in German on http://www.ems-ems.de/uploads/media/2009_12_22_BWP_Ems_DE_web.pdf). The ecological status appears to be problematic since the whole river system has been heavily modified and 98 % of the river system currently falls short of a good ecological status. Insufficient river continuity and silting are seen as significant problems. Thus a set of measures will be developed aiming at connecting the main stream with spawning-, juvenile and feeding habitats for migratory fish. The measures are primarily oriented to eel, but in the second place

also to other migratory fish such as salmon. These measures are also part of the implementation of the EU-WFD and the FFH-directive. The objective is to achieve an efficient river continuity of about 95% that is suitable for migratory fish. However, this goal will clearly not be achievable by 2015.

C: Weser

The federal states that joined the *River Basin Commission Weser (RBC Weser)* have agreed on a co-ordinated approach to accomplish the objective to develop self reproducing populations of Atlantic salmon or other species. In conformity with the WFD a strategy has been developed for the reintroduction of long distance migratory fish, including the development of spawning areas and the improvement of river continuity and water quality. The strategy was published in April 2009 and can be downloaded on the website of the RBC Weser (available only in German on http://fgg-weser.de/Download-Dateien/gesamtstrategie_wanderfische_0904.pdf).

D: Elbe

The *Elbe Management Plan* ("Bewirtschaftungsplan Elbe", available in German only on http://fgg-elbe.de/joomla/index.php?option=com_content&task=view&id=62) was accepted by the Elbe Minister Conference in November 2009. It aims at improving the implementation of both, the EU-WFD and the eel management plans under the EU-Eel Directive (EC) 1100/2007. Although the focus is on eel, hydro-morphological improvement and the enhancement of river continuity will also be beneficial for salmon reaching their spawning grounds in the river Stepenitz and the river Lachsbach. Cross-border management adds on to the management measures of the German federal states.

Lacking suitable habitats for Atlantic salmon, SH, HH and BE are not directly involved in salmon management. However, in the context of the FGG Elbe Management Plan they do participate in improving and managing migration routes. NI and SN do not report significant changes in salmon management for 2009.
In ST stocking of salmon did not occur before 2009. However, by releasing 10.000 smolts in October 2009 ST has now started with the stocking of the tributary Nuthe. The Nuthe is a small sandy lowland river that is supposed to be especially suited for sea trout. Thus for the next 3-5 years 10.000 juvenile salmonids (50% salmon, 50% sea trout) will be stocked each year. Salmon will be purchased from Denmark (Danmarks center for Vildlaks). The project is executed by the angling association of ST and scientifically attended by the Institute of Inland Fisheries Postdam-Sacrow in BB.

BB started stocking of the Stepenitz in 1999 and of the Schwarze Elster/ Pulsnitz in 2004. Stocking started with a broad genetic basis of strains. Taking account of the experiences gained (e.g. on potential for sustaining long migration routs, spawning time, presumed

genetic similarity to the original strains), stocking has now been limited to two strains: *Skjern A* in the Stepenitz and *Lagan* in the Schwarze Elster/Pulsnitz system. Since 2008 stocking is carried out by using six months old marked parrs. With these measures in place a better monitoring of natural breeding should be achievable and the survival rate and imprinting of stocked fish could be enhanced.

Section 2: A description of any significant changes in the status of stocks and information on catches. The Council has asked that the following information on catches be provided:

- **(a) the provisional catch of salmon in tonnes for 2009;**
- **(b) the confirmed catch of salmon in tonnes for 2008;**
- **(c) an estimate of unreported catch in tonnes for 2009;**
- **(d) the number of salmon caught and released in recreational fisheries in 2009.**

A: Rhine

The number of salmon in the Rhine and its larger tributaries moving upstream is positively correlated to the water discharge quantity. The number of salmon migrating upstream was 805 in 2007 and 663 in 2008 in the whole Rhine system of which 27 and 70 respectively were monitored on the Upper Rhine (Gambsheim). In 2009 the numbers dropped to 568 (of which 46 were monitored at Gambsheim), mainly due to high temperatures and low water in autumn (ICPR Report No. 167, Annex V, NW).
BY states that salmon is currently unable to reach former spawning grounds in the Main tributary due to transverse structures further downstream in HE. The "Master Plan Migratory Fish Rhine" aims at improving the situation by building fish passes until 2027.
2 (a,b,d): Any catch of salmon is prohibited in the whole Rhine system as well as the 12 nm coastal zone. Thus the catch officially declared in 2008 and 2009 is zero.
2 (c): Investigations have been carried out to quantify the amount of illegal and unreported catch and by-catch which are seen as potentially compromising the success of reintroduction programmes. The "Master Plan Migratory Fish Rhine" addresses this problem in chapter 4.2, providing recommendations of how to tackle illegal catches.

B: Ems

No significant changes have been reported.
2(c) By-catch is estimated at not more than one salmon per professional fisherman and year.

C: Weser

No changes in the status of stocks were reported. Up to now no significant natural reproduction of salmon occurs in NI.
2(b) For NI, comprising the rivers Ems, Weser and Elbe the total catch of salmon in 2008 is estimated to be 200 kg for freshwater and coastal fisheries. 80% (160 kg) are caught by anglers, 20% (40 kg) are assumed to be caught as by-catch by professional fishermen.
2 (c) Angling associations active in parts of the Weser ("Mittelweser") and the Elbe ("Tideelbe") estimate a catch of 110 kg (of which 50% is estimated to be illegal or unreported). It should be recalled that in NI catch of salmon is allowed in rivers where salmon are being stocked (§2 Abs 2 Binnenfischereiordnung as of 6 July 1989 GVBI, p. 289). Stocking has to be notified with the fisheries administration (Fischereikundlicher Dienst).
In HE any catch of salmon is prohibited. No by-catch of Salmon has been reported.

D: Elbe

No changes in the status of stocks were reported. There are no self reproducing stocks in the Elbe river system.
Catch of salmon is prohibited in the Elbe river system with some exceptions for stocked salmon that have a minimum size of 50 cm (ST) or 60cm (SN, BB) and is caught between 1st April and 30th September (ST) or 16th October and 15th April (BB).
2 (c) For catches in NI: see (C) Weser. No catches were registered in BE. ST and SN expect numbers of catches or by-catches to be low. Catch and release are assumed to be single events. ST calculates about 30 smolts as a by-catch in stow net fishing. BB has no indication of catch and release and assumes illegal or unreported catch to be less than 10 individuals in 2008. All in all, unreported catches are not seen as a significant restrictive factor for salmon reintroduction.
BB: The number of counted salmon migrating upstream was 29 (Stepenitz) and 1 (Pulsnitz) in 2007, 19 (Stepenitz) and 3 (Pulsnitz) in 2008 and 17 (Stepenitz) an 0 (Pulsnitz) in 2009.

Section 3: A description of any new factors which may significantly affect the abundance of salmon stocks.It is expected that any measure implementing the management plans according to Article 13 of the EU-WFD have positive effects on salmon.

A: Rhine

The "Master Plan Migratory Fish Rhine" gives a detailed listing of already finished, ongoing and planned measures to improve migration and habitats for the entire Rhine river basin. The most important measures currently are the building of a fishpass at the barrage in Gambsheim (which started its operation in June 2006) and the decisions to rebuilt the barrages in Strasbourg (construction will be finished before 2015) and Gerstheim (construction works will start before 2015). All three barrages are situated in the Upper Rhine (main stream).
HE as yet did not monitor a significant effect of the improvement of migration ways on the frequency of salmon migrating upstream. BW has built 14 up-migration and 5 down-migration pathways and has realised three larger measures to improve habitat structures in 2008. In the Main tributaries of BY 2 fishpasses have been built (Lichtenfels, Randersacker), the effect of which has yet to be shown. The administration on water management established a technical priority list for the restoration of transverse structures to improve migration.

B: Ems

No new factors known.

C: Weser

One main emphasis of the strategy of the *River Basin Commission Weser (RBC Weser)* that was adopted in 2009, is a better interconnection of the tributaries Aller, Leine and Upper Weser with the Lower Weser and the North Sea, thus giving Salmon access to its spawning grounds.

D: Elbe

A second fishpass is under construction at the barrage in Geesthacht nearby Hamburg. The work started in 2009 and will be finished by May 2010. The new fishpass - together with the current installation - will enable an upstream migration for 90% of the fish that will then have access to a stretch of another 620 km without any barrage. BB plans a better passage through traverse structures in the tributaries Havel and Spree. In order to give access to the Mulde tributary, the intake structure of the Mulde reservoir was created as a

rock ramp. Currently a fish pass is under construction at the discharge unit. Nonetheless, the river continuity of the Elbe is still insufficient and valuable spawning habitats in SN are still not or not sufficiently accessible. SN enhanced its number of upstream fishways from 254 in 2007 to 309 in 2008. Some of them are in priority rivers or possible salmon habitats. BB reports the building of the fishpass "Zellwolle" which gives access to 55 km more or 60% of usable habitats in the Stepenitz river system. Although conditions for migration have partly been improved by building of fishpasses in the Schwarze Elster/ Pulsnitz (Herzberg, Bad Liebenwerda, Ortrand, Lindenau), migration continues to be impaired by:

- water-power plants and barrages without sufficient fishpasses;
- water maintenance with heavy machinery in the rivers Stepenitz, Pulsnitz;
- increased cultivation of riparian farmland or melioration activities with significant discharge of fine sediment (Stepenitz);
- water pollution by liquid manure and municipal wastewater (Pulsnitz).

Section 4: An account of all actions taken under the Implementation Plan with regard to the management of salmon fisheries; habitat protection and restoration; aquaculture and related activities (not required in 2010); and other influences affecting salmon abundance or diversity (including the marine environment).

Management Action	Reporting Update	Achieved Management Action (Yes, No, Ongoing, Completed)
Fisheries Management		
For detailed information see Focus Area Report on Management of salmon fisheries.		
A: Rhine **On its 2009 plenary meeting in Schaffhausen, the ICPR gave advice to the riparian states to reduce by-catch and illegal catch of salmon and lake trout (see Annex 1 of the report 167; in German only)** **Report on the implementation of advice by the riparian states is available from**		

July 2012.		
Catch is prohibited or limited in all German federal states. There are no changes in federal law according to salmon catch compared to the table given in the Implementation Plan		
Habitat Protection and Restoration		
For detailed information see Focus Area Report on Habitat protection and restoration.		
Aquaculture and related activities *(only required if a jurisdiction wishes to supplement its FAR or has not submitted a FAR)*		
For detailed information see Focus Area Report on Aquaculture and related activities.		
Other influences affecting salmon abundance or diversity (including marine environment)		

Section 5: Details of any proposed revisions to the Implementation Plan.

A: Rhine

The ICPR, HE, BW and BY do not propose any revisions to the implementation plan.

B: Ems

NI does not propose any revisions to the implementation plan.

C: Weser

The *River Basin Commission Weser (RBC Weser)* wishes to add the following elements:

• Salmon stocking:
Today the common approach focuses on the most capable strains that best represent the river catchment characteristics. It is important that the expected migration distance as well as general river parameters like the average temperature are estimated before the right strain can be chosen.
Also the number of winters that the adult salmons spend in marine areas or the timing and duration of (different) spawning runs are factors to be considered.
It is not recommended to use stocking material from breeding farms because the genetic configuration needed to develop a proper homing instinct and other factors important for a successful migration are generally regarded as inadequate if farming material is used. Especially in case of farmed salmon the risks of fish diseases have to be taken into account. The *River Basin Commission Weser* has published a brochure on "Prevention of fish epidemics in case of resettlement of migrating fish ("Fischseuchenpraevention bei der Wiederansiedlung von Wanderfischen"). This brochure is only available in German and can be ordered from the website of the RBC Weser (http://fgg-weser.de/schriftenreihe_neu.html).
For the next step of the resettlement of salmons the use of strains like *Ätran* and *Skjern A* can be recommended. These strains are able to migrate over short as well as long distances and are available from so called wild populations (migrating brood stock). This is important in regard to the required environmental conditioning.

• Enhancement of the main river continuity
For a successful reintroduction of long distance migratory fish species in the Weser river basin so called main migration routes have been identified. They run amongst others mainly from the North Sea along the river Weser and its tributaries.

Crucial for a successful migration along these routes is the enhancement of the river continuity. The rivers are characterised by an eminent number of impassable barriers such as weirs, dams and hydroelectric installations. These structures prevent salmon from reaching their spawning grounds or migrating back to their marine feeding grounds.
Within the strategy for the reintroduction of long distance migration fish species a temporal and regional prioritisation for each of the detected impediments has therefore been developed, including a cost estimate.
On the basis of these considerations a range of measures for both, up and down river migration has been drafted.

• Enhancement of the hydro-morphology of prior spawning rivers
As a first step prior and historic spawning grounds have to be identified. For this purpose historic documents and expert knowledge is being evaluated.
After successful migration to the spawning grounds it is of particular importance that salmon find suitable hydro-morphological and water quality conditions. Adequate spawning grounds are characterised by the presence of high oxygen contents in the gravel gaps, low sediment loads, low water temperatures and low oxygen demanding pollution.
It is an essential part of the strategy for the reintroduction of long distance migration fish to take account of the quality of the spawning and growth areas in an integrative way involving all jurisdictions concerned. Measures that enable returnees to find suitable spawning grounds are going to be developed in a co-ordinated process. The obligations under the EU Water Framework Directive are being incorporated.

D: Elbe

The following additional information were provided:

Enhancement of the main river continuity
For the successful reintroduction of long distance migratory fish species in the Elbe river basin the main migration routes have been identified.

Enhancement of the hydro-morphology of prior spawning rivers
As a first step prior and historic spawning grounds have to be identified. For this purpose historic documents and expert knowledge is being evaluated.
Measures that enable returnees to find suitable spawning grounds are going to be developed in a co-ordinated process. The obligations under the EU Water Framework Directive are being incorporated as well.