# Progress on Implementing the Master Plan Migratory Fish in the Rhine Bordering States during 2010

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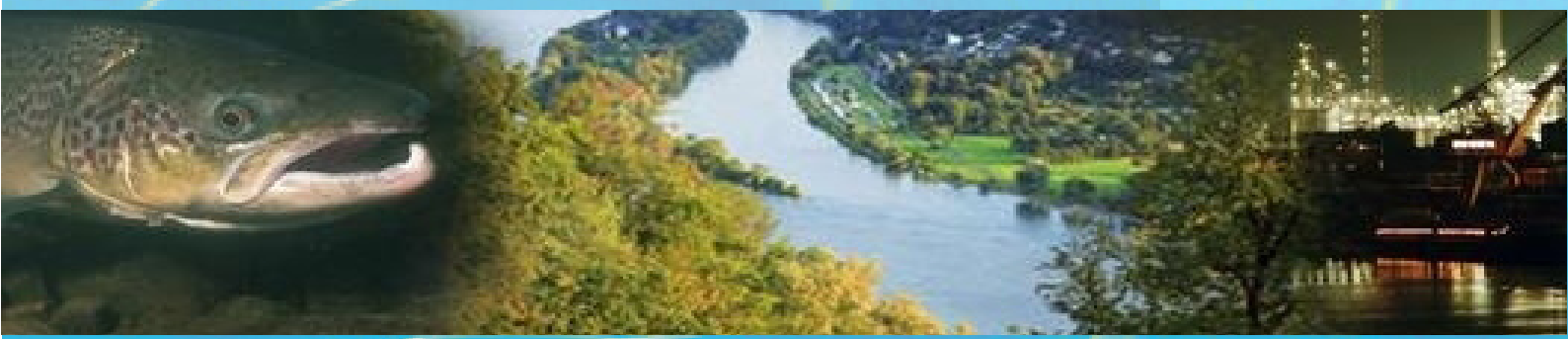

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# Progress on Implementing the Master Plan Migratory Fish in the Rhine Bordering States during 2010

The **"Master Plan Migratory Fish Rhine" (ICPR report no. 179, www.iksr.org)** indicates how self sustaining, stable populations of migratory fish can again be settled in the *Rhine catchment area as far as the Basel area* within reasonable time and at reasonable costs. As a symbol, the salmon represents many other migratory fish species, such as sea trout, sea lamprey and allice shad, while the lake trout is to be considered as indicator species for the Alpine Rhine and Lake Constance. Furthermore, measures aimed at reintroducing salmon and sea trout have positive effects on the incidence of many more animal and plant species and are suitable for improving the entire ecology of the Rhine. This considerably supports the main objective of the European Water Framework Directive (EU-WFD) to achieve a "good status" of water bodies.
Additionally, following the EU regulation no. 1100/2007, the EU Rhine bordering countries with natural eel stocks have drafted national plans for managing stocks of eel; these plans are presently under discussion in the ICPR.

Since 1990, 6,222 adult salmon returning from the North Sea to their spawning waters in the Rhine tributaries have been counted.
Table 1 and Figure 1 show the number of salmons for the different sections of the Rhine and the tributaries. Most salmons were counted at the counting stations in Buisdorf/Sieg and at Iffezheim and Gambsheim on the Upper Rhine. The other numbers were determined during random electro fishing campaigns, they result from telemetry studies or result from random observations, which means that the real number is estimated to be considerably higher.
The extent of the annual stocking measures with Atlantic Salmons was comparable to that of preceding years. Table 2 shows the waters in the Rhine catchment, where stocking measures were carried through and which stock of salmons were used at what stage.

After 3 years of continuous growth of the number of lake trout catches in Lake Constance, professional fishermen and anglers registered a marked decline in 2010; the number of catches was below the mean value for 10 years.
This negative trend is not confirmed by the number of sea trout migrating up the fish ladder under continuous video surveillance at the Reichenau power plant in the Alpine Rhine. The 992 sea trout registered are comparable to the numbers registered in the past years. A first peak of upstream migrating fish was registered as early as June. Compared to previous years, catches auf broodstock in other waters do not indicate any decline. Figures 2 and 3 show the most important characteristic values concerning fishery of the lake trout in Lake Constance and the Alpine Rhine for 2010.

In addition, many of the measures aimed at improving habitat quality and at restoring river continuity listed in the tables annexed to the "Master Plan" were implemented in the programme waters for migratory fish.

**Table 1:**

## Identification of adult salmons in the Rhine system since 1990

Salmons of at least 50 cm (first catches) are considered to be adult

| Year | FR/CH | France | | *Baden-Württemberg* | | | | | *Hesse and Rhineland-Palatinate* | | | | | | | | *Northrhine-Westphalia* | | | | | *Netherlands* | | | **Rhine** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Rhine*, Ill | Gambs-heim | Iffez-heim | Elz-Dreisam | Murg | Kinzig | Rench | Alb | Others | Wisper | Nette | Lahn | Sayn-bach | Mo-selle | Ahr | Sieg | Rhine | Sieg | Wupper | Ruhr | Lippe | IJssel | Waal | Lek | **Total** |
| 1990 | | | | | | | | | | | | | | | | | | 1 | | | | | | | **1** |
| 1991 | | | | | | | | | | | | | | | | | | 2 | | | | | | | **2** |
| 1992 | | | | | | | | | | | | | | 1 | | | | 10 | | | | | | | **11** |
| 1993 | | | | | | | | | | | | | | 0 | | | 2 | 16 | | | | | | | **18** |
| 1994 | | | | | | | | | | | | | | 0 | | | | 9 | | | | x | 16 | 7 | **32** |
| 1995 | | | 9 | | | | | | | | | | | 1 | | | 1 | 6 | | | | x | 7 | 4 | **28** |
| 1996 | | | 23 | | | | | | 1 | | | 0 | 4 | 1 | | | 1 | 15 | | | | x | 2 | 15 | **62** |
| 1997 | | | 5 | | | | | | | | | 1 | 8 | 3 | | | | 13 | | | | 2 | 5 | 8 | **45** |
| 1998 | | | 7 | | | | | | | | | 0 | 1 | 4 | 0 | 2 | | 42 | 7 | | 1 | 0 | 2 | 3 | **69** |
| 1999 | | | 3 | | | | | | | | | 8 | 21 | 7 | 12 | 7 | | 53 | 15 | | 1 | 0 | 12 | 85 | **224** |
| 2000 | | | 75 | | | | 1 | | | | | 5 | 35 | 14 | 2 | 8 | | 335 | 21 | | 1 | 3 | 28 | 194 | **722** |
| 2001 | 2 | | 59 | | | | | | | | 1 | 4 | 12 | 4 | 10 | 0 | | 84 | 12 | | | 1 | 23 | 110 | **322** |
| 2002 | | | 94 | | | | 1 | | 1 | 3 | 0 | 3 | 20 | 11 | 8 | 9 | | 213 | 17 | 3 | | 3 | 28 | 72 | **486** |
| 2003 | | | 90 | | 1 | | | | 2 | 2 | 0 | 15 | 37 | 3 | 2 | 8 | | 160 | 20 | 1 | 2 | 3 | 44 | 50 | **440** |
| 2004 | | | 72 | | | 1 | | | | 0 | 2 | 8 | 17 | 4 | 11 | 5 | | 93 | 37 | | | 4 | 33 | 28 | **315** |
| 2005 | | | 49 | | | | | | | 0 | 2 | 0 | 6 | 1 | 5 | 10 | | 195 | 39 | | | 6 | 38 | 12 | **363** |
| 2006 | | 18 | 47 | | 2 | 1 | 1 | | 1 | 4 | 1 | 5 | 13 | 4 | 0 | 11 | 1 | 287 | 43 | | | 4 | 28 | 18 | **489** |
| 2007 | | 27 | 62 | | 3 | | | | 1 | 4 | 1 | 12 | 26 | 2 | 1 | 24 | | 463 | 69 | | | 4 | 79 | 27 | **805** |
| 2008 | 1 | 70 | 86 | | | | | 2 | 2 | 1 | 1 | 8 | 21 | 10 | 3 | 9 | 4 | 339 | 32 | 1 | | 4 | 43 | 33 | **670** |
| 2009 | | 46 | 52 | 1 | 3 | | | 1 | 2 | 7 | 3 | 28 | 21 | 6 | 3 | 2 | | 282 | 30 | | | 4 | 60 | 18 | **569** |
| **2010** | | **18** | **26** | **1** | | **2** | | | **2** | **3** | **3** | **10** | **10** | **0** | **0** | **5** | | **385** | **8** | | | **4** | **47** | **25** | **549** |
| *Total* | ***3*** | ***179*** | ***759*** | ***2*** | ***9*** | ***4*** | ***3*** | ***3*** | ***12*** | ***24*** | ***14*** | ***107*** | ***252*** | ***76*** | ***57*** | ***100*** | ***9*** | ***3003*** | ***350*** | ***5*** | ***5*** | ***42*** | ***495*** | ***709*** | **6222** |

* FR: Rhine upstream of Gambsheim

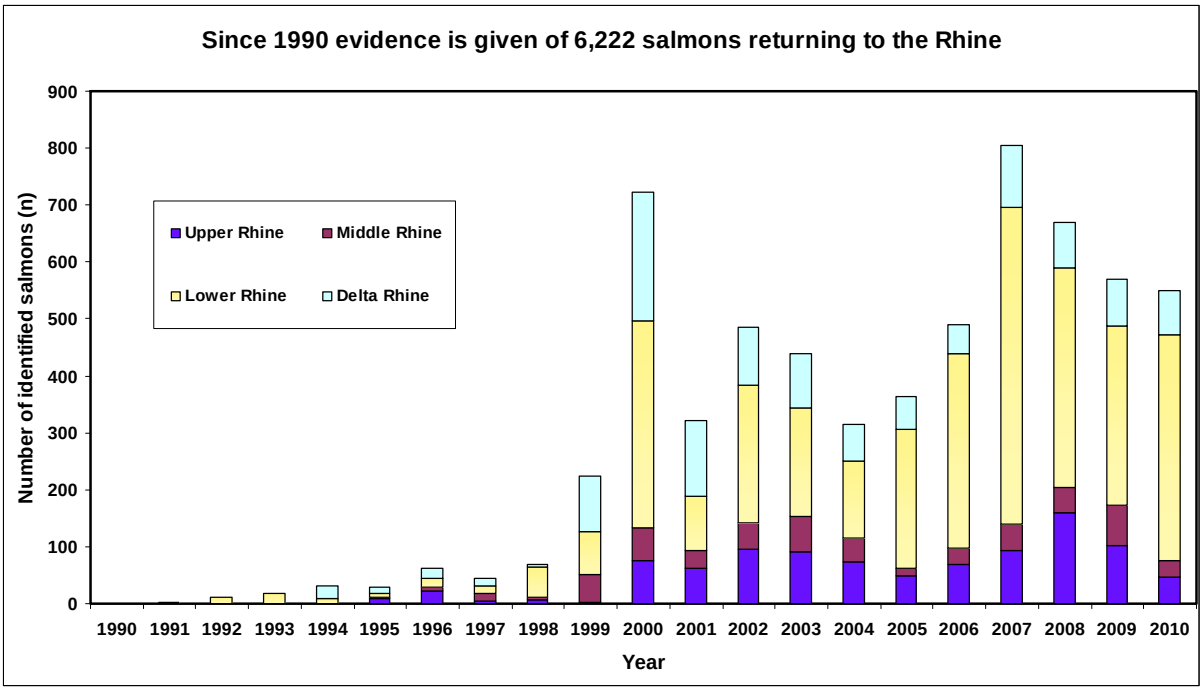


**Figure 1: Identification of adult salmons in the Rhine system since 1990**

**Table 2: Stocking measures with big salmonids in the Rhine system 2010**

(see next page)

## Stocking measures with big salmonids in the Rhine system 2010

| Country / Water body | Year | Stocking | | | |
|---|---|---|---|---|---|
| **Switzerland** | | Kind and stage | Number | Origin | Marking |
| | 2010 | Lb ($L_a$) | 15.000 | Allier / Chanteuges | no |
| | | Lp | 10.000 | Allier / Chanteuges | cwt a/c |
| **France** | 2010 | | | | |
| Rhine (Old Rhine) | | Lb (L0) | 26.500 | Allier-Obenheim | no |
| | | Lb ($L_a$) | 24.800 | Allier-Chanteuges | no |
| | | Lb ($L_a$) | 8.300 | Allier-Saint-Louis | no |
| Doller | | Lb ($L_a$) | 30.000 | Allier-Chanteuges | no |
| Thur | | Lb ($L_a$) | 31.000 | Allier-Chanteuges | no |
| Lauch | | Lb ($L_a$) | 10.000 | Allier-Chanteuges | no |
| Fecht and tributaries | | Lb ($L_a$) | 34.550 | Allier-Chanteuges | no |
| | | Lb ($L_a$) | 8.450 | Allier Saint-Louis | no |
| Giessen and tributaries | | Lb ($L_a$) | 30.000 | Allier Chanteuges | no |
| Bruche | | Lb ($L_a$) | 65.480 | Allier-Chanteuges | no |
| | | Lb ($L_a$) | 8.400 | Rhine-Obenheim | no |
| Moselle | | Lb ($L_a$) | 5.000 | Allier-Chanteuges | no |
| Houille | | Lb ($L_a$) | 3.000 | Allier-Chanteuges | no |
| **Luxemburg** | 2010 | | 0 | | |
| **Germany, Bavaria** | 2010 | | not specified | | |
| **Germany, Baden-Württemberg** | 2010 | | | | |
| Alb | | Lb ($L_a$) | 27.540 | Loire-Allier | no |
| Murg | | Lb ($L_a$) | 48.000 | Loire-Allier | no |
| Oos | | Lb ($L_a$) | 13.000 | Loire-Allier | no |
| Rench | | Lb ($L_a$) | 15.000 | Loire-Allier | no |
| Kinzig and tributaries | | Lb ($L_a$) | 105.800 | Loire-Allier | no |
| Elz | | Lb ($L_a$) | 8.700 | Loire-Allier | no |
| Dreisam | | Lb ($L_a$) | 3.000 | Loire-Allier | no |
| Wiese | | Lb ($L_a$) | 2.000 | Loire-Allier | no |
| **Germany, Hesse** | 2010 | | | | |
| Lahn | | Lp | 3.500 | Lahn | a/c |
| Kinzig | | Lp | 800 | Lahn; Lahn x EFH Sieg | no |
| Schwarzbach | | Lp | 9.200 | Lahn; Lahn x EFH Sieg | no |
| Wisper | | Ls 1 | 1.900 | EFH Sieg | a/c |
| Wisper | | Lp | 8.600 | EFH Saynbach | no |
| Nidda | | Mf p | 6.500 | Wupper | a/c |
| **Germany, Rhineland-Palatinate** | 2010 | | | | |
| Ahr | | Ls 1 | 9.850 | EFH Sieg | a/c |
| | | Lp | 34.000 | Lahn & Lahn x EFH Sieg (80%), EFH Sieg (20%) | |
| Lahn | | Ls 1 | 1.600 | EFH Sieg | a/c |
| | | Lp | 3.000 | Lahn | a/c |
| Moselle | | Ls 1 | 3.300 | EFH Sieg | a/c |
| | | Lp | 20.000 | Lahn; Lahn x EFH Sieg | |
| Saynbach | | Ls 1 | 3.300 | EFH Sieg | a/c |
| Sieg | | Lp | 5.000 | EFH_Sieg | |
| | | Lp | 18.000 | EFH Sieg (25%), KFS Sieg (75%) | |
| | | La | 11.000 | KFS Sieg | |
| | | Ls 1 | 4.000 | EFH Sieg | |
| | | Lp 1 | 1.000 | EFH Sieg | |
| | | Ls 1 | 3.500 | EFH Sieg | a/c |
| Wieslauter | | Lp | 2.000 | Allier (Obrigheim) | |
| **Germany, Northrhine-Westphalia** | 2010 | | | | |
| Sieg and tributaries | | Lb (L0) | 55.000 | Sieg | no |
| | | Lb ($L_a$) | 397.669 | Sieg (partly Ätran) | no |
| | | Lp | 35.000 | Sieg | no |
| | | L1 | 20.426 | Sieg | no |
| | | L1 / Ls | 17.292 | Sieg | partly cwt a/c |
| | | L2 / Ls | 2.290 | Sieg | cwt a/c |
| | | L2 / Ls | 40 | Sieg | Transponder |
| | | L2 / Ls | 60 | Sieg | no |
| Wupper and small tributaries | | Lb ($L_a$) | 81.000 | Sieg | no |
| | | Lp | 15.000 | Sieg | no |
| | | L2 / Ls | 40 | Sieg | Transponder |
| | | L2 / Ls | 60 | Sieg | no |
| Dhünn and small tributaries | | Lb ($L_a$) | 40.000 | Ätran | no |
| | | L2 / Ls | 40 | Sieg | Transponder |
| | | L2 / Ls | 60 | Sieg | no |

cwt = coded wire tags; a/c = adipose clipping; EFH = parent fish keeping;

KFS = Monitoring and catching station; L e = salmon spawn; L b = Salmon fry; L0 0 unfeeded fry; La = feeded fry;

L p = Salmon parr; L ps = Salmon pre-smolt; L s = Salmon smolt; L 1 = one year old salmon; L 2 = two years old salmon

Mf p = Sea trout parr; k. A. = not specified by deadline

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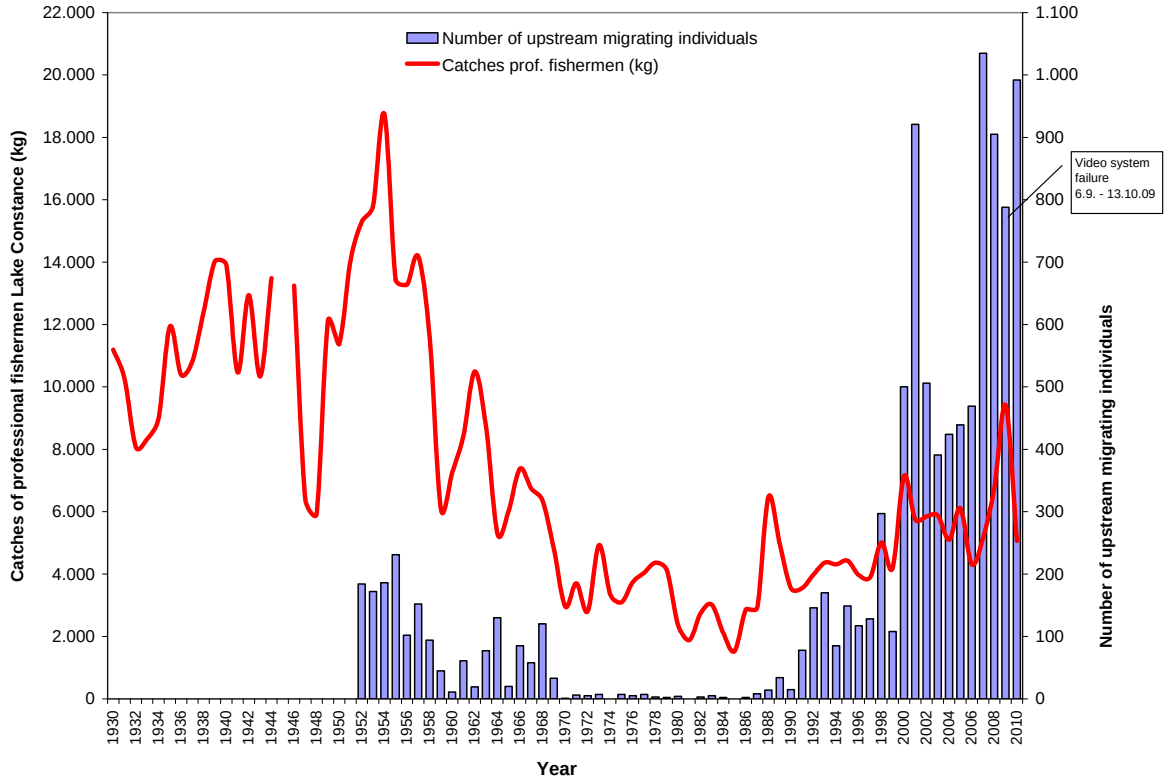


**Fig. 2: Lake trout catches by professional fishermen in Lake Constance-Obersee and number of fish migrating upstream at the Reichenau power plant: Caught broodstock (until 1999), fyke-net control (as of 2000) and video counting (as of 2007).**

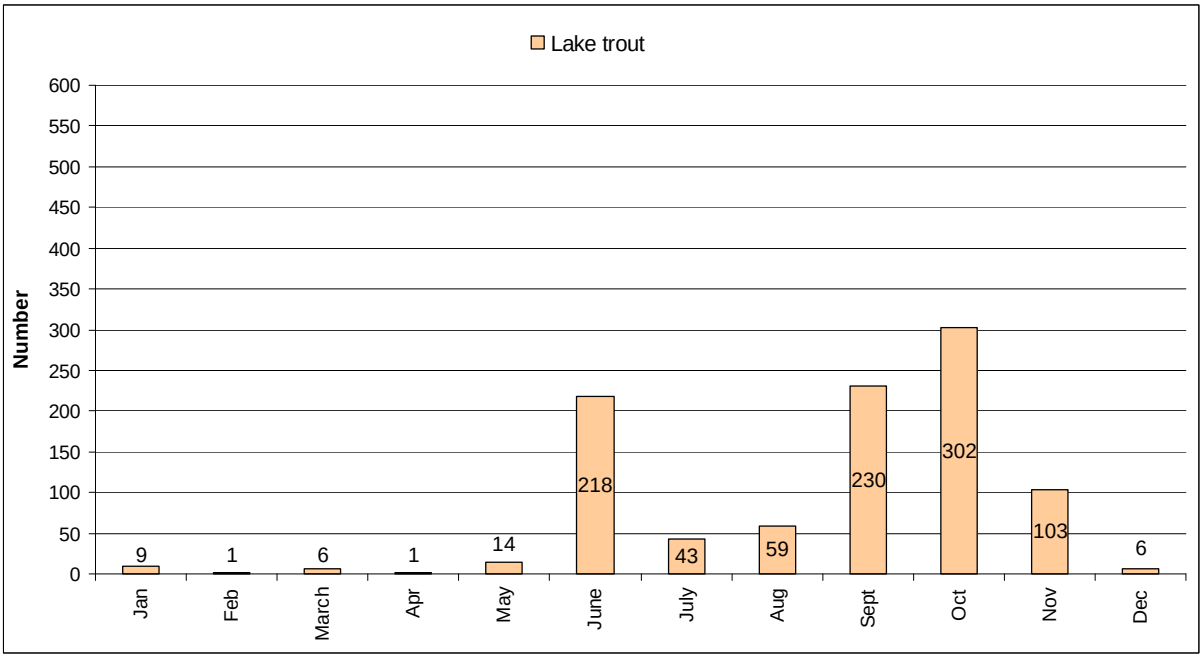


**Fig. 3: Number of Lake Constance lake trout seasonally migrating upstream the fish ladder at the Reichenau power plant (video count) during the season 2010**