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***Salmon Fisheries and Status of Salmon Stocks in France:
National Report for 2008***

(Tabled by EU-France)

SALMON FISHERIES AND STATUS OF SALMON STOCKS IN FRANCE: NATIONAL REPORT FOR 2008

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1. Foreword

The data compiled in this report are provided by the following organisms:

- Office National de l'Eau et des Milieux Aquatiques (ONEMA): declared and estimated catches in freshwater, information from salmon anglers logbooks and data from monitored river Bresle;
- Institut Français pour l'Exploitation de la Mer (Ifremer): overall weight of salmon landed by and fishing effort of the sea driftnet fishermen in the Adour estuary and in the R. Gaves Réunis (in saltwater and freshwater);
- Migradour Association: salmon catches and fishing effort of fluvial (freshwater) net fishermen in the R. Adour estuary and in the R. Gaves Réunis (freshwater) and total run estimates by sea age;
- Institut National de la Recherche Agronomique (INRA): results from monitored Rivers Oir (2008) and Scorff (2007 and 2008). For the 2007 datat of the R. Scorff, the source report is co-authored with the Anglers Federation of the Morbihan;
- the Migradour, Bretagne Grands Migrateurs and Saumon-Rhin Associations and the CNSS (Conservatoire National du Saumon Sauvage, in charge of the Chanteuges Salmon Hatchery): marking and tagging statistics.

The authors would like to thank the various operational staff of these organisms who have forwarded them the data and documents needed to establish this report.

A list of relevant references is provided at the end of this report.

2. Data from the fisheries

In France, there are records of catches and effort from the salmon fisheries in two main areas: the Armorican Massif (Brittany and Lower Normandy) and the Adour-Gaves Basin. A third area, the Artois-Picardie and Normandy regions, has an angling fishery that catches salmon, but which mainly targets sea-trout, which is the predominant migratory salmonid.

A fourth area, the Loire-Allier Basin, was subject to a salmon exploitation, but given the reduced level of its salmon stock, the capture of salmon have been forbidden for sport and commercial fisheries since 1994. Gear fishermen and anglers continue to fish for other species with methods that can catch salmon. The main salmon river of this basin is the River Allier. Its salmon population is particular for the long in-river migration performed by the fish (800 km from the Loire estuary to the best

spawning zone) and for its sea-age composition, mainly composed of Multi-Sea Winter fish (less than 1% grilises at Vichy, 670 km from the sea).

2.1. Gears and number of fishermen.

2.1.1. Rod and line fisheries

The number of leisure fishermen is only recorded in freshwater, as angling is free and does not imply the purchase a licence in saltwater. It is unlikely anyway that a significant number of anglers fish for or catch salmon in saltwater or brackish water (estuary).

Estimations of salmon anglers in freshwater are available since 1982:

- from 1982 to 1986, the number of salmon anglers have been estimated. From 1987 onward, the reporting of catches became compulsory.
- from 1987 to 2000, there was a salmon angling licence. For this period, the number of salmon anglers was by definition the number of salmon licences sold.
- from 2000 to 2006, there has been a salmonids angling licence allowing both salmon and sea trout fishing. So the number of salmon anglers has been estimated every year, by multiplying the number of licences by a raising factor, namely the average percentage of salmon licences in the total of salmon and sea trout licences sold from 1987 to 1999 in the 17 ‘départements’ that accounted every year for more than 98% of all salmon catches.
- since 2007, there has been a “diadromous fish” licence allowing the leisure fishermen to fish for salmon, sea trout and glass eels in freshwater. The process of estimating the number of salmon fishermen remained similar as in previous years, given that only four ‘départements’ out of around 40 include people fishing for glass eel, and in very small numbers.

The number of salmon anglers since 1982 is shown in Table 1 and in Figure 1. Two phases can be highlighted:

- a sharp decrease from 1987 (5,274) to 1991 (2,737) ;
- a relative stabilization around 2,000 fishermen since 1992 (mini-maxi: 1,672 - 2,431), if one excepts the relative maximum recorded in 1997 (2,953). The estimated number in 2008 is 2,401 salmon anglers. It is 7% above the five-year average (2,253) and 9% above the ten-year average (2,206).

2.1.2. Commercial driftnet fisheries

According to the current knowledge, the most important commercial fishery (drift nets) takes place in the Adour estuary, in the maritime zone. The number of commercial net sea fishermen who actually fish for and catch salmon has been relatively stable over the last eight years. They were 32 in 2008 (Table 1). A few of these sea fishermen also have licences to fish in the upper part of the Adour estuary, which is officially classified as freshwater (‘fluvial zone’).

Twelve (12) driftnet freshwater net fishermen, administratively distinct from the sea fishermen, fished for and caught salmon in 2008 in the fluvial zone, just upstream of the Adour estuary, as well as in the stretch of river called ‘Gaves Réunis’ (Table 1).

2.2. Catches

Table 2 presents the 2008 catches in numbers by region, river and gear, along with the consumption of river specific MSW TAC and global TAC, for rivers that are managed this way.

The total estimated salmon catch in 2008 was 11.7 tonnes and 3,402 fishes, 5% lower than the 5-year average (3,517 salmon). The anglers caught, exclusively in freshwater, 6.6 tonnes (57%) and the commercial net fishermen men 4.5 tonnes (Adour and Gaves Réunis – 38). A estimated catch of 0.6

tonnes (5%) have been made in coastal area. The splitting of catches between coast, estuary and river is shown in Table 3 and Figure 2.

This overall estimated catch is a minimum because:

- catches at the coast are likely underestimated, as salmon or sea trout catches declaration is not compulsory for non commercial marine fishermen, and catches for commercial fishermen are likely under-reported. Even if only a small minority of fishermen target salmon, there is a wide range of gears and an intensive fishing effort that are likely to result in significant salmon bycatches at one moment or another of the migration season;
- of illegal net catches, not estimated in 2008, which are likely to occur every year in fishing reserves located along the coastline of Normandy, in the estuary of some rivers of Brittany and of the Loire. Illegal catches of salmon might have taken place in the Mont Saint-Michel Bay in 2008 like in previous years but they were not assessed, as well as bycatch in some estuarine net fisheries.
- of legal but unassessed catches in the Bay of Saint-Jean de Luz (River Nivelle).

Unreported legal catches are only estimated for the angling fishery in rivers. In the case of the Adour net fisheries (either from sea or freshwater fishermen), only declared catches are available, but unreporting is thought to be small.

2.3. Effort and Catches Per Unit Effort (CPUE)

CPUE data are available through two different data series (Table 4):

- voluntary logbooks of the rod and line fishery from 1995 to 2008, based on a sample of 64 to 115 anglers according to the year. There was no logbook survey in 1998 and the 2007 results were not available at the time of writing this report. Number of anglers giving such logbooks in 2008 was at its historical low level (64).
- the Adour drift net fishery from 1999 to 2008, from compulsory logbooks.

Anglers logbooks show globally a steep decrease in the mean effort per season since the beginning of the series (1995 – 181 hours; Table 4). The lowest value was reached in 2003 (95 hours). Since that year, the mean effort seems to increase to reach 121 hours in 2008, above the 5-year average (2003-2007). The average number of salmon caught per season and angler was 2.0, the third highest value of the series, well above the 5-year average (1.1; Table 4). This ratio was also better than in the overall national catches the same year (0.8), as is the case most of the time. The average fishing time needed to catch one salmon in the whole season was 59 hours in 2008, which is the lowest value, far below the 5-year mean (95 hours) and the second lowest value (70 hours in 2004; Table 4 and Figure 3). As in previous years, the fishing efficiency for MSW salmon (from March to May) is far lower than for grilises, but the difference appears to be smaller in the last five years than earlier in the times series and both value are new historical low values.

In the driftnet fishery of the Adour estuary (sea fishermen), the number of fishing days in 2008 (1,455) was the lowest value since 1999, and well below the 5-year average (1,484; Table 3 and Figure 4). The CPUE was 0.82 salmon/day, the highest value. However, it should be noted that this CPUE index is imperfect as one fishing day may include one or two fishing sessions. The effective fishing time is potentially variable and fishing days could not be considered a totally relevant unit of effort.

2.4. Age composition of catches

The numbers of 1SW and MSW salmon caught each year are shown in Table 5 and Figure 5. The proportion of 1SW salmon in the yearly catches is shown in Table 5 and illustrated by Figure 6.

In 2008, the grilse accounted for 42% of the overall catch with 1,431 1SW salmon versus 1,931 MSW salmon, slightly below the 5-year average (45%, 1,584 and 1932 respectively).

Figure 7 presents the 2008 salmon catch of each main region partitioned into 1SW and MSW, separating the angling fishery from the drift net fisheries in the case of the Adour-Gaves Basin. The proportion of grilse in the drift net catch (Adour Basin) was 27% in 2008, significantly less than the national average. It was only 10% in the rod and line fishery of the Gave d'Oloron (same catchement), which remains clearly targeted at MSW salmon. The salmon catches of Northern Brittany comprised 54% grilse in 2008. Though less unbalanced than in the South West, this nevertheless remains biased towards MSW salmon, as the salmon stocks of Brittany have at least 80% grilse overall. In 2008, the salmon catch in Artois-Picardie-Normandy (North West) and in Southern Brittany included a higher proportion of grilse than other regions respectively 65% and 60%, closer to the current composition of runs.

As in previous years, the fishing pressure in the French salmon rivers was in 2008 proportionally higher on the multi-sea winter component of salmon populations.

2.4.1. *Exploitation rates*

Reliable exploitation rates data are available (Table 6, Figure 8 and Figure 9) for the Adour Basin and for the monitored River Scorff (Brittany).

For another monitored river, the river Nivelles, only a small fishing effort occurs in freshwater, which gives non-significant exploitation rates (less than eight salmon caught each year since 1987 and none in 2008). But a significant net catch is suspected to occur downstream of its estuary, in the Bay of Saint-Jean de Luz, and has been estimated some years, though not in the five last seasons. It is likely to result in exploitation rates in excess of 50% as was the case in 2003 on grilse (79%, as opposed to 21% on MSW). Systematic and realistic catch data are needed for this stock given its small size, its low productivity and its tenuous status. These are also necessary to comply with the technical requirements of a monitored river, and specially to obtain reliable homewater returns.

In the River Scorff, the estimated rate of exploitation of 1SW salmon has never exceeded 14% from 1995 to 2007 (Table 6; 2008 figures not available). The exploitation rate of MSW salmon varied from 3% to 33% in most years, with a maximum of 59% recorded in 2004, when there was an unusually small spring salmon run (an estimated 22, of which 13 were caught). The pressure on MSW fish has clearly increased since 2003 (Figure 8), but in 2008, the exploitation rate is balanced between 1SW (12%) and MSW (13%).

The exploitation rates in the Adour-Gaves Basin have been calculated since 1999 through estimations of freshwater runs, based on mark-recapture data at trapping stations, most of them located on the Gave d'Oloron. In 2008 (provisional data), the exploitation of MSW salmon was 32%, one the lowest value (Table 6 and Figure 9). Grilse were less exploited (19%) as was the case in most previous years. This general pattern of rather high pressure on MSW salmon and of low exploitation of 1SW fish is explained by two main factors:

- first, drift net fishermen, who have the biggest share in the total catch, target MSW fish because the price paid per kilo is three times higher for a MSW salmon than for a grilse. As an order of magnitude, the average price at first sale was 30 €/kg in 2007, when the catches included 70% of MSW salmon. Furthermore, there were poor catches of grilse in June in the last years, as the grilse run tend to occur later and did not start before July, peaking in late July and August. This discouraged nets men who gave up fishing earlier (the salmon fishing officially closes on the 31st of July);
- second, anglers also mainly target MSW salmon through habit and culture, partly due to the abundance of 2SW and 3SW fish back in the seventies and before. They have no economical incentive to do so as it is not legal to sell the salmon caught on rod and line.

2.5. *Main events of the fisheries*

In Brittany and Lower Normandy a fishing regulation based on Total Allowable Catches (TAC) was set in 1996 in order to manage stocks on a river by river basis. A TAC was calculated for each river from the number of removable eggs, depending on a Conservation Limit (CL) determined through stock-recruitment relationship (Appendix 1.).

2.5.1. *Global TAC in Brittany and Lower Normandy*

The provisional TAC set at the beginning of the season were diminished by 33% on the first of July 2008, after assessing that less than 50% of the Conservation Limit (in eggs) was present in the rivers, under the form of adult salmon. This is a normal procedure in the TAC management system. This assessment is based on salmon catches declared and estimated, assuming an exploitation rate of 37% for MSW fish and 10% for grilises.

In 2008, the anglers only caught 52% of the sum of all revised TAC of these two regions (Table 2 and Figure 10). Two management units, the River Penzé and the Mignonne-Camfrout-Faou rivers, exceeded their global (revised) TAC, which resulted in the decision to close the fishing season on the 10th of October for the River Penzé, 3 weeks before the official date (31st of October). For Mignonne-Camfrout-Faou rivers and two other rivers, the River Léguer and the Sée-Sélune unit, which reached a high proportion of the TAC (resp. 86% and 90%), there was no anticipated closure.

2.5.2. *Spring salmon (MSW) TAC in Brittany and Lower Normandy*

On the request of the respective Regional Diadromous Fish Management Committees, a specific TAC for spring salmon, equal to 10 % of the global TAC, was set in 2000 for the rivers of Brittany and Lower Normandy, in order to reach the same proportion of MSW in the catches as in the stocks. This regulation took over an individual quota of one single spring salmon per angler in 1999, which did not give satisfactory results and has remained in force since then in Brittany. When this TAC is attained, the fishing closes until mid June, and then re-opens for grilises only.

In Lower Normandy, at the request of anglers, the spring salmon TAC set in 1999 was replaced by a delayed opening date (end of April instead of second week of March) on the Rivers Sée and Sélune in 2001 and 2002. This failed to protect spring salmon, which were caught in significant numbers in the first weeks after the delayed opening. In other words, this was not efficient in preventing MSW fish catches on these small rivers subject to an intensive fishing effort from anglers well aware of the fish lies and behaviour.

In 2008, the MSW TAC were exceeded in 9 rivers out of 28 and were nearly reached in 4 other rivers. Eight of these 13 rivers are shown in Figure 10, that summarises the 2008 results for the largest rivers of the area. Consequently, 90% of the overall MSW TAC of Brittany and Lower Normandy rivers was taken. Temporary closures were thus applied in 8 rivers, which likely saved 175 MSW salmon, which represent 25% of the global TAC expressed in eggs.

In spite of the fact that some MSW TAC are reached or exceeded in some rivers and certain years, it is believed that the management by TAC in Brittany and Lower-Normandy, combined with an autumnal fishing period (since 1993 in a few rivers and generalised after 2000) is the main reason for the improvement of the exploitation pattern (larger proportion of 1SW fish) recorded during the last years in the Armorican Massif, as opposed to South Western France (see exploitation rates above).

2.5.3. *Adour-Gaves Basin*

In the Adour-Gaves basin, the rules for the angling fishery have not been significantly modified since 2004: opening from March to July, no global river nor individual catch quota and two days 'off' every week, on tuesday and thursday. The anglers catch (239 fish) was below the last 5-years average but comprised, as usual, a high proportion of MSW salmon (94%).

The regulations of the drift net professional fisheries have varied during the last years. From 1999 to 2001, a 6-week summer closure of the commercial netting fishery took place in June and July in the Adour estuary, a period of important in-river migration of grilse. This was replaced from 2002 onwards by days of closure more evenly distributed during the season: 2 days off per week from April (one month after the opening) to mid June, 3 days off per week from mid June to the first week of July and 2 days off per week until the end of July. Until 2004, this allowed for a higher exploitation rate of the grilse (on average 4% until 2001 versus 18% from 2002 onwards), and seems to decrease the exploitation rates of MSW salmon (on average 51% until 2001 versus 36% from 2002 onwards; Table 6). Since 2006, the distribution of the 2 days off in the fishing season has slightly varied, but without any expected change in the efforts.

After a peak between 2002 and 2004 (2700 days), effort tended to decrease and was of 1455 fishing days in 2008 (Table 4 and Figure 4). Catches have been comparable in the last three years, around 1,200 salmon, but lower than the relative maxima of 2003 and 2004. The pressure remains proportionally higher on MSW fish as explained above.

3. Status of the stocks in 2008

3.1. Adult returns in monitored rivers relative to the Conservation Limits (CL)

Data on juveniles and adult salmon numbers and on return rates of the four monitored salmon rivers of France are given in Table 7. The yearly egg deposition relative to the conservation limits (CL) of each river are found in Table 8 and 9 and illustrated by Figure 11. Three of these rivers have CL based on the same stock-recruitment relationship. These are, from North to South: the River Bresle (Artois-Picardie), the River Oir (a small tributary of the River Sélune, Lower Normandy) and the River Scorff (Southern Brittany). The fourth one, the River Nivelle, located in the Basque Country (Adour-Gaves Basin), has distinct population dynamics; its specific model is presented in Appendix 2..

In the River Bresle, the egg deposition has equalled or exceeded the CL from 1987 to 1992. It has been below the CL since that year and until 2004, except in 1998 and 2002. Since 2005 egg deposition exceeded and was not far from CL. In 2008, the egg deposition compared to CL was 1.18. Sea trouts outnumber salmon and this river is subsequently not considered a 'typical' salmon river.

In the River Oir, a small tributary of the River Sélune, the egg deposition varies greatly according to the year but has been consistently above the CL since 1998. The egg deposition has reached a maximum of 10 times the CL in 2004 and was 1.83 times higher than the CL in 2007. However, it must be noted that this population is peculiar in that more than 90% of the adult fish which enter it to spawn were not born in it. It is then colonized by salmon originating in other river(s), and especially the nearby River Sée, which shares a common estuary with the River Sélune.

In the River Scorff, the 2008 egg deposition was not yet estimated. It amounted to 81% of the CL in 2007. The CL has been met 8 years out of 14 since 1994. In spite of a moderate exploitation by anglers, this stock is considered to be relatively fragile because of an overall low productivity.

For the River Nivelle, a specific model has been established by Dumas and Prouzet in 2002 (Appendix 2.). The data series, previously based on the model developed for Brittany and Lower Normandy by Prévost and Porcher (1996) have thus been updated. The CL has never been met since 1984. The maximum egg deposition recorded was 84% of the CL in 1993, the mean egg deposition of the 5 known year (2003-2007) was only 22% of the CL. The net fishing that takes place some years in the estuary (where it is illegal) and every year in the Bay of Saint-Jean de Luz (where it is legal) is partially responsible for this situation. A complementary reason is that, being situated at the southern limit of the salmon distribution area, the Nivelle has very low survival rates from the egg to the 0+

autumn parr (< 1 %), which results in an overall low productivity. Its salmon population could be strengthened by opening the upper Spanish river stretch to the spawners, so as to provide more and better spawning zones, by ensuring the ban on salmon fishing in the estuary is effective and by limiting the commercial exploitation that takes place downstream of the estuary, in the Bay of Saint-Jean de Luz.

3.2. Global status of salmon stocks in French rivers

In establishing the French Implementation Plan of NASCO's agreements and resolutions, at the end of 2007, the list of French rivers that still hold some Atlantic salmon was provided. The status of their salmon population was assessed using the IUCN terminology and their specific Conservation Limit, when available. This list, comprising 62 rivers, is shown in Table 10.

It is important to have in mind that

- this list does not include all historical salmon bearing rivers, but only those where the presence of at least a few salmon has been reported at the beginning of the 21st century, on a regular basis or not, of either natural or hatchery origin.
- this assessment is provisional.

4. Microtags, Finclip and external tag releases

4.1. Salmon juveniles

448,700 hatchery juveniles and 3,304 wild juveniles have been tagged or marked in 2008 (Table 11), most of them by adipose fin clipping.

The marking and tagging of hatchery juveniles was aimed at assessing restoration programs in the rivers Allier (Loire Basin), Aulne (Brittany) and Couesnon (Lower Normandy). More young hatchery salmon were released in the Adour-Gaves Basin, the Loire Basin and the French part of the Rhine Basin in 2008, but were not marked or tagged in any way.

The wild juveniles were marked or tagged in the monitored rivers Oir (tributary of the R. Sélune, Lower Normandy) and the River Scorff (Southern Brittany) for monitoring purposes, and especially for estimating the number of outmigrating smolts. Autumnal parrs were also tagged and marked in the index River Nivelle (Adour-Gaves Basin) in 2008, but the actual figures were not available at the time of writing this report.

4.2. Adult salmon

In 2008, 606 wild adults were marked or tagged, 249 of them in the monitored rivers Oir and Scorff, and an additional (unkown) number in the monitored River Nivelle.

The other 357 adult salmon were tagged in the Rivers Gave d'Oloron and Nive (Adour-Gaves Basin) during mark-recapture experiments aimed at estimating the overall returning salmon number, splitted in 1SW and MSW.

4.3. Changes in comparison to the previous season

Compared to 2007, one can mention a few changes:

- no smolts were released in the French part of the River Rhine Basin, which accounts for the fact that no juveniles were marked in this watershed in 2008 (the only stage subject to marking is the smolt stage);
- no hatchery 0+ parrs were marked by fluorescent pigments and released in the Rivers Garonne and Dordogne in 2008. They were 87,155 in 2007. This marking method consists of sprinkling batches of juveniles with fluorescent pigments of various colors. It has been tested for 0+ parrs from 2002 to 2007 and has allowed to demonstrate that natural spawning occurs on a section of the middle River Dordogne stocked with these hatchery juveniles.

5. Documents used for establishing this report

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Porcher J.-P., 2008. Pêche du saumon dans les cours d'eau du massif armoricain. Ajustement des totaux admissibles de captures par bassin en cours de saison. Point sur les captures au 1er juillet 2008. ONEMA, 3 pages.

Appendix 1. Conservation limits and Total Allowable Catch (TAC) per river basin in Brittany and Lower Normandy

Since 1996 a new management scheme is set up for the stocks and the fisheries of Atlantic salmon in the rivers of the Armorican Massif (Brittany, Lower Normandy, North-Western France). The basic principles are (i) to define a spawning target for each river, and (ii) to control the achievement of this target through the fishery regulation, by the mean of a Total Allowable Catch. The spawning target is set up at the average level allowing to maintain in the long term maximum opportunities of catches and the TAC, representing the removable surplus, is adjusted each year during the fishing season, according to the annual fluctuations of the returns. The following steps are performed:

- (1) The production potential is assessed through a quantitative description of the juvenile habitats, giving the wetted surface area of running water colonised in each river in a standard "riffle/rapid equivalent" unity related to the carrying capacity.
- (2) A Stock/Recruitment relationship provides the basis for the computation of the spawning target and the removable surplus. The current figures are 4.75 eggs per m² of riffle/rapid equivalent for the spawning target and 3.5 eggs per m² of riffle/rapid equivalent for the removable surplus. These data are derived from the population dynamic survey of the Oir, and are assumed to be representative of most of the rivers in this region.
- (3) A provisional TAC is set-up for each river. The fishery is monitored in order to assess both reported and illegal catches, and both fish and egg removals are assessed in real time. The consumption of 90 % of the TAC results in the closure of the fishery.
- (4) Based on observed catches and the average exploitation rate at a regional level, the abundance of the adult run is evaluated on July, 1st. According to the level of the potential egg deposition at this moment, the provisional TAC is adjusted upwards to take advantage of good returns, or downwards if necessary in order to achieve the spawning target.

The carrying capacity depends on the quality of habitats and is therefore subject to differences from a river to another. Based on a 0+ parr abundance monitored, a method is currently available to adapt the TAC on a river per river basis.

Further developments should include new data sets of salmon population dynamics, providing a more accurate assessment of the Stock/Recruitment relationship, and the use of return forecasting models to improve provisional TAC computation. Data from adult counts could be useful in TAC adjustments during the fishing season.

Appendix 2. Conservation limit of the river Nivelle

Population dynamics have been modeled for the Nivelle (South Western France) by Dumas and Prouzet in 2002 with a stochastic stock-recruitment Ricker model, based on 11 cohorts. The data are considered reliable on the period 1991-2001 (no stocking, low level of exploitation, increased and stabilized accessible spawning grounds).

The spawning target was estimated to be 1.424 million eggs, giving a maximum gain of 198 600 eggs (12.2 % of the egg deposition), which allows for a very small exploitation. This is equivalent to 25.4 eggs per m² of riffle/rapid equivalent for the spawning target and 3.5 eggs per m² of riffle/rapid equivalent for the removable surplus. It appears that this river system has a low productivity, mainly due to a low survival rate from the egg to the autumnal 0+ parr stage (< 1 %). This model was not translated into fishing regulations with the TAC system on the Nivelle because the current rod fishery is very small (5 anglers, less than 10 salmon caught every year) and is not viewed as a danger to the salmon population.

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Table 1: Numbers of gear units licensed or authorised in France for salmon between 1982 and 2008.

Year	Rod and line licences in freshwater	commercial nets in freshwater	¹	Drift net licences in estuary ²
1982	4 145	55		82
1983	3 856	49		82
1984	3 911	42		82
1985	4 443	40		82
1986	5 919	58	³	86
1987	5 804	87	⁴	80
1988	4 514	101		76
1989	3 909	83		78
1990	3 021	71		76
1991	2 838	78		71
1992	2 199	57		71
1993	2 164	53		55
1994	1 694	14		59
1995	1 898	17		59
1996	1 806	21		69
1997	2 974	10	⁵	59
1998	2 363	16		63
1999	2 232	15		61
2000	2 037	16	⁶	35
2001	2 080	18		42
2002	2 082	18		43
2003	2 048	18		38
2004	2 158	15		38
2005	2 356	16		37
2006	2 269	12		37
2007	2 431	13		37 ^{2b}
2008	2 401	12		32
Mean 2003-2007	2 253	15		37
% change ⁷	7%	-19%		-14%
Mean 1998-2007	2 206	16		43
% change ⁷	9%	-24%		-26%

¹ Lower Adour only since 1994, after fishery closed in the Loire-Allier Basin.

² Adour estuary only (Southwestern France).

Before 2000, number of drift nets licences ; overestimates the actual number of fishermen targeting salmon by a factor 2 or 3. Since 2000, fishermen that declare salmon catches.

^{2b} Unknown but assumed to be equal to 2006 value.

³ Common licence for salmon and sea trout introduced in 1986, inducing a short-term increase in the number of licences issued.

⁴ Specific salmon licence and compulsory declaration of salmon catches in freshwater since 1987.

⁵ Large number of new, inexperienced anglers in 1997 because cheaper licences were introduced.

⁶ Before 2000, number of salmon licences sold. From 2000 to 2006, estimated from the number of "migratory salmonid" licences sold. Since 2007, estimated from the number of "Diadromous Fish" licences sold.

⁷ 2008/(mean - 1) * 100.

Table 2: Salmon catch in 2008 in freshwater (unless otherwise stated) by river and sea age, and attainment of TAC.

RIVERS	TAC		REPORTED CATCHES			ESTIMATED CATCHES			TAC CONSUMPTION (%)	
	MSW salmon (N°)	GLOBAL (N° eggs)	MSW salmon	1SW salmon	TOTAL	MSW salmon	1SW salmon	TOTAL	MSW TAC	GLOBAL TAC
CANCHE			0	5	5	7	3	10		
AUTHIE			0	3	3	7	3	10		
BRESLE			0	4	4	5	40	45		
ARQUES			1	6	7	1	6	7		
VALMONT			0	0	0	0	0	0		
SEINE			0	0	0	0	1	1		
TOUQUES	2	47 000	1	2	3	1	2	3	50%	20%
SAIRE	3	39 380	1	7	8	1	7	8	33%	47%
SIENNE	34	480 236	17	20	37	33	20	53	97%	47%
SEE + SELUNE	105	1 474 092	68	240	308	135	300	435	129%	90%
COUESNON	12	170 541	17	9	26	17	10	27	142%	68%
Artois-Picardie, Normandy	156	2 211 249	105	296	401	207	392	599	120%	77%
GOUET	2	30 263	1	1	2	1	1	2	50%	25%
LEFF	9	127 257	5	1	6	12	1	13	133%	56%
TRIEUX	31	466 543	19	23	42	19	23	42	61%	33%
JAUDY + GUINDY	19	288 192	1	1	2	1	1	2	5%	3%
LEGUER	41	614 231	48	75	123	52	125	177	127%	86%
YAR	3	46 857	0	0	0	5	5	10	167%	81%
DOURON	18	264 717	5	24	29	6	24	30	33%	30%
QUEFFLEUTH	6	94 166	1	9	10	5	11	16	83%	52%
JARLOT	6	92 435	0	0	0	0	0	0	0%	0%
PENZE	14	202 378	17	57	74	22	57	79	157%	114%
DOURDUFF	5	75 121	0	0	0	0	0	0	0%	0%
HORN	5	80 750	0	0	0	0	0	0	0%	0%
FLECHE	6	82 047	0	1	1	0	1	1	0%	2%
ABER-ILDUT	7	100 226	4	7	11	5	7	12	71%	42%
ABER-BENOIT	5	73 390	0	0	0	0	0	0	0%	0%
ABER-WRACH	6	94 166	3	3	6	3	3	6	50%	24%
ELORN	28	411 392	20	46	66	27	46	73	96%	58%
MIGNONNE	6	89 838	11	0	11	18	4	22		
CAMFROUT	4	55 211	6	0	6	0	0	0	138%	124%
FAOU	3	41 361	0	0	0	0	0	0		
AULNE	44	658 598	41	12	53	42	12	54	95%	40%
Northern Brittany	268	3 989 139	182	260	442	218	321	539	81%	46%
GOYEN	13	190 469	1	29	30	2	30	32	15%	35%
ODET	64	943 905	30	18	48	36	26	62	56%	27%
AVEN	22	332 934	23	7	30	23	7	30	105%	44%
ELLE	91	1 351 031	99	115	214	104	111	215	114%	60%
SCORFF	33	491 317	12	14	26	12	14	26	36%	19%
BLAVET	40	589 671	38	65	103	39	68	107	98%	59%
KERGROIX	4	58 217	0	1	1	0	1	1	0%	3%
Southern Brittany	267	3 957 544	203	249	452	216	257	473	81%	43%
ADOUR + GAVES réunis - Freshwater Netsmen			163	8	171	163	8	171		
ADOUR + Gaves réunis - Sea Fishermen in Freshwater			35	20	55	35	20	55		
ADOUR Estuary - Sea Fishermen in brackish water			794	343	1 137	794	343	1 137		
GAVE OLRON			201	12	213	201	12	213		
GAVE DE PAU			1	0	1	1	0	1		
GAVE MAULEON			21	2	23	21	2	23		
NIVE			2	0	2	2	0	2		
NIVELLE			0	0	0	0	0	0		
Adour-Gaves			1 217	385	1 602	1 217	385	1 602		
COASTAL AREA - leisure fisherman ¹						4	6	10		
COASTAL AREA - professionnal fisherman ²			69	110	179	69	110	179		
Coastal area			69	110	179	73	116	189		
TOTAL in freshwater			913	847	1 760	1 064	1 012	2 076		
TOTAL in brackish water (estuary)			794	343	1 137	794	343	1 137		
TOTAL in coastal water			69	110	179	73	116	189		
OVERALL TOTAL 2008			1 776	1 300	3 076	1 931	1 471	3 402	90%	52%

¹ 31 kg along the Landes coast and ² 552 kg: conversion in number based on the assumption that half of catch was 1SW and mean weight = 2.5 kg for 1SW and 4kg for MSW

Table 3: Estimated weight (tonnes round fresh weight) of salmon caught in coastal, estuarine and riverine French fisheries between 1995 and 2008.

Year	Catch						Total Weight
	Coast ¹		Estuary		River		
	Weight	%	Weight	%	Weight	%	
1995 ²			2.0	20%	8.0	80%	10.0
1996			4.0	31%	9.0	69%	13.0
1997			3.0	38%	5.0	63%	8.0
1998	1.0	13%	2.0	25%	5.0	63%	8.0
1999			3.8	35%	7.2	65%	11.0
2000	0.4	4%	3.9	35%	6.7	61%	11.0
2001	0.4	4%	5.0	44%	6.0	53%	11.4
2002	1.6	14%	3.5	30%	6.4	56%	11.4
2003			5.9	44%	7.4	56%	13.2
2004			9.8	51%	9.4	49%	19.2
2005			4.1	38%	6.8	62%	10.9
2006			5.3	41%	7.6	59%	12.9
2007			4.4	42%	6.2	58%	10.6
2008	0.6	5%	4.5	38%	6.6	57%	11.7
2003-2007 Mean			5.9	44%	7.5	56%	13.4
1998-2007 Mean	0.8	8%	4.8	40%	6.9	57%	12.0

¹ Illegal coastal catches by net fisheries are unknown, except certain years (like in the Bay of Mont St-Michel, Lower Normandy, in 2002).

² An illegal net fishery operated from 1995 to 1998, catch unknown in the first 3 years but thought to be increasing. This fishery ceased in 1999, but resumed in 2000.

Table 4: CPUE of rod and net salmon fisheries in France between 1987 and 2008.

Year	Freshwater Rod Fishery					Sea Fishermen Net fishery			
	Results of voluntary logbooks					National catches	Adour River : estuary and lower stretch		
	No hours per catch March-May	No hours per catch June-October	No hours per catch Whole season	Mean effort per season (hours)	Catch per angler.season (number)	Catch per angler.season (number)	No of catch declared (number)	No of days of fishing (number)	Catch per angler.day (number)
1987						0.39			
1988						0.73			
1989						0.55			
1990						0.71			
1991						0.60			
1992						0.94			
1993						0.88			
1994						2.32			
1995	139	47	80	181	2.30	1.15			
1996	91	56	72	170	2.40	1.57			
1997	232	89	165	148	1.10	0.44 ¹			
1998						0.67			
1999	206	99	150	152	1.00	0.76	697	1 850	0.38
2000	212	58	94	119	1.30	1.06	691	1 768	0.39
2001	170	69	98	115	1.20	0.97	806	1 981	0.41
2002	273	89	133	114	0.90	0.84	1 085	2 916	0.37
2003	166	97	137	95	0.70	0.76	1 788	2 417	0.74
2004	98	52	70	121	1.75	1.25	1 989	2 849	0.70
2005	94	74	84	107	0.68	0.74	1 266	1 982	0.64
2006	104	76	90	111	1.24	0.89	1 217	2 192	0.56
2007						0.74	1 159	1 667	0.70
2008	76	44	59	121	2.03	0.77	1 192	1 455	0.82
Mean									
2003-07	116	75	95	109	1.09	0.88	1 484	2 221	0.67

¹ Large number of new, inexperienced anglers in 1997 because a cheaper licences were introduced

Table 5: Estimated number of salmon caught between 1987 and 2008 by sea age and percentage of 1SW salmon.

Year	Catch of 1SW (#)	Catch of MSW (#)	Total catch (#)	Proportion of 1SW (%)
1987	6 013	1 806	7 819	77%
1988	2 063	4 964	7 027	29%
1989	1 124	2 282	3 406	33%
1990	1 886	2 332	4 218	45%
1991	1 362	2 125	3 487	39%
1992	2 490	2 671	5 161	48%
1993	3 581	1 254	4 835	74%
1994	2 810	2 290	5 100	55%
1995	1 669	1 095	2 764	60%
1996	2 063	1 943	4 006	51%
1997	1 060	1 001	2 061	51%
1998	2 065	846	2 911	71%
1999	690	1 831	2 521	27%
2000	1 792	1 277	3 069	58%
2001	1 544	1 489	3 033	51%
2002	2 423	1 065	3 488	69%
2003	1 598	1 540	3 138	51%
2004	1 927	2 880	4 807	40%
2005	1 256	1 771	3 027	41%
2006	1 763	1 785	3 548	50%
2007	1 378	1 685	3 063	45%
2008	1 471	1 931	3 402	43%
2003-2007 Mean	1 584	1 932	3 517	45%
% change	-7%	0%	-3%	-5%

Table 6: Exploitation rates of 1SW and MSW salmon between 1995 and 2008 in the River Scorff and in the Adour-Gaves Basin.

	River Scorff		Adour-Gaves Basin	
	1SW	MSW	1SW	MSW
1995	8%	11%		
1996	14%	11%		
1997	8%	11%		
1998	13%	21%		
1999	9%	8%	2%	50%
2000	11%	18%	4%	48%
2001	14%	10%	6%	54%
2002	5%	3%	18%	48%
2003	0%	29%	29%	24%
2004	10%	59%	18%	53%
2005	7%	24%	7%	28%
2006	9%	33%	24%	24%
2007	12%	13%	11%	46%
2008			19%	32%
Mean 2003-2007	8%	32%	18%	35%

Table 7: 0+ parr, smolt and adult salmon estimates in the French monitored rivers between 1992 and 2008.

parr, smolt or adult year	R. Nivelle				R. Oir			R. Bresle			R. Scorff			
	0+ parr (a)	adults (b)	survival rate (a)		smolt	adults	survival rate (c)	smolt	adults	survival rate	smolt	adults	survival rate	
			homew.	freshw.	year			homew.	freshw.	year			homew.	freshw.
1992 count		215			1992					1992				
estimate	3 452	234	> 8.3	8.3		672	60	5.3			415	158		
											1 160	225		
1993 count		369			1993	209	100			1993	565	49		1993
estimate	2 640	472	> 7.2	7.2		226	176	17			1 700	75	10.3	5.8
1994 count		270			1994	330				1994	935	31		1994
estimate	8 092	317	> 2.3	2.3		539	155	3.54			2 400	105	7.5	3.6
1995 count		185			1995	618	110			1995	50	24		1995
estimate	2 844	195	> 4.4	4.4		733	128	4.99			n/a (flood)	80		6 206
1996 count		192			1996	767	68			1996	45	34		1996
estimate	5 068	214	> 3.4	3.4		1 003	196	4.83			1 320	40		3 261
1997 count		111			1997	210	58			1997	2 600	34		1997
estimate	5 888	126	> 2.7	2.7		724	67	14.01			6 300	45	4.8	4.7
1998 count		145			1998	524	32			1998	800	187		1998
estimate	5 392	160	> 2.9	3.9		1 034	189	6.58			1 650	273	2.4	4 827
1999 count		138			1999	241	154			1999	40	25		1999
estimate	8 797	160	> 2.8	2.8		316	257				400 (d)	62		3000 (d)
2000 count		132			2000	1 850	53			2000	265	11		2000
estimate	9 865	151	> 3.4	3.4		2 403	490	2.38			1 700	35		3078 (d)
2001 count		167			2001	688	160			2001	n/a	9		2001
estimate	10 174	201	> 0.44	0.44		1 533	n/a	3.68			n/a	n/a		10 596
2002 count		280			2002	1 920	110			2002	65	69		2002
estimate	13 703	362	> 0.8	0.8		2 413	413	3.1			n/a (flood)	175		1 220
2003 count		70			2003	844	190			2003	775	23		2003
estimate	7 108	80	> 0.6	0.6		1 230	210				2 960	51	3.2	10 123
2004 count		79			2004	889	247			2004	4 320	54		2004
estimate	3 897	101				1 286	437				7 660	68	4.6	7 842
2005 count		73			2005	698	88			2005	2 110	187		2005
estimate	9 285	97				884	138				5 370	310	3.1	10 758
2006 count		50			2006	924	121			2006	1 074	137		2006
estimate	2 335	81				1 409	182				2 800	220		7 137
2007 count		58			2007	746	178			2007	2 215	44		2007
estimate	2 429	85				968	200				5 640	90		7 560
2008 count					2008	1 303	28			2008	2 155	81		2008 (d)
estimate						1 760	68				6 730	168		10 500

(a) 0+ birth year (add one year to fit the ICES tables related to smolt year). Wild fish except for 1994 and 1995 (wild and hatchery fish)

(b) wild fish only; trap count + escapment from trap + estimate of population spawning or caught downstream of the trap

(c) return rate to the trap site on a tributary

(d) order of magnitude (rough estimate)

(e) very low efficiency of the trap in 1998

> : for the Nivelle, about 10 % of the estimated returns are caught by the coastal fishery. Illegal nets in the estuary are likely to catch a significant (but non-estimated) proportion of fish.

Nota : both juvenile and adult numbers refer to the year indicated in this table (year of migration). Adult numbers are not the returns of the smolt run on the same row.

Table 8: Estimated numbers of spawners, egg deposition and attainment of CL in the monitored Rivers Bresle and Oir between 1987 and 2008.

River Bresle					River Oir				
(data by F. Fournel & G. Euzenat, ONEMA)					(data by J.L. Baglinière and F. Marchand, INRA)				
year	spawners (estimated*)		eggs (million)	eggs/CL	year	spawners (estimated)		eggs (million)	eggs/CL
	1SW	MSW				1SW	MSW		
Conservation Limit = 0.28					Conservation Limit = 0.12				
1987	142	33	0.524	1.87	1987	77	5	0.131	1.10
1988	78	14	0.248	0.89	1988	150	33	0.366	3.05
1989	175	30	0.547	1.95	1989	173	26	0.328	2.74
1990	66	34	0.370	1.32	1990	18	11	0.071	0.59
1991	165	25	0.450	1.61	1991	43	2	0.071	0.59
1992	169	46	0.505	1.80	1992	33	2	0.071	0.59
1993	46	19	0.199	0.71	1993	112	5	0.106	0.88
1994	87	3	0.206	0.74	1994	40	2	0.114	0.95
1995	59	3	0.151	0.54	1995	115	3	0.240	2.00
1996	20	17	0.105	0.38	1996	177	8	0.364	3.03
1997	30	12	0.105	0.37	1997	44	1	0.087	0.73
1998	260	2	0.511	1.83	1998	174	11	0.298	2.49
1999	28	30	0.196	0.70	1999	232	25	0.494	4.12
2000	23	7	0.091	0.33	2000	453	37	0.909	7.58
2001	<i>No estimation in 2001 (flood)</i>				2001	169	10	0.313	2.61
2002	147	28	0.373	1.33	2002	352	60	0.969	8.08
2003	29	22	0.131	0.47	2003	182	28	0.494	4.12
2004	60	8	0.120	0.43	2004	377	60	1.2412	10.35
2005	279	31	0.633	2.26	2005	127	11	0.203	1.69
2006	147	73	0.553	1.98	2006	153	29	0.52	4.34
2007	72	18	0.221	0.79	2007	189	11	0.377	3.14
2008	160	8	0.330	1.18	2008	56	12	0.22	1.83

* all fish trapped are marked and efficiency of the trap is the percentage of sea trout and salmon kelts recaptured. 2008 figures are provisional

Table 9: Estimated numbers of spawners, egg deposition and attainment of CL in the French monitored Rivers Scorff and Nivelle between 1987 and 2008.

River Scorff					River Nivelle				
(data by E. Prévost and N. Jeannot, INRA)					(data by F. Lange and J. Dumas, INRA)				
year	spawners (estimated)		eggs (million)	eggs/CL	year	spawners (estimated)		eggs (million)	eggs/CL
	1SW	MSW				1SW	MSW		
Conservation Limit = 0.95					Conservation Limit = 1.441				
1987					1987	113	25	0.266	0.18
1988					1988	99	31	0.287	0.20
1989					1989	209	53	0.482	0.33
1990					1990	252	39	0.746	0.52
1991					1991	139	41	0.528	0.37
1992					1992	189	38	0.709	0.49
1993					1993	436	36	1.208	0.84
1994	694	n/a	1.61	1.69	1994	274	42	0.793	0.55
1995	908	74	1.62	1.71	1995	154	37	0.446	0.31
1996	654	102	1.38	1.45	1996	171	42	0.671	0.47
1997	467	75	0.95	1.00	1997	115	11	0.387	0.27
1998	527	24	0.82	0.86	1998	152	8	0.375	0.26
1999	268	85	0.81	0.85	1999	136	24	0.477	0.33
2000	362	49	0.95	1.00	2000	124	27	0.388	0.27
2001	232	60	0.73	0.77	2001	170	22	0.501	0.35
2002	514	32	1.24	1.30	2002	328	34	0.965	0.67
2003	193	24	0.52	0.55	2003	23	56	0.454	0.32
2004	870	22	1.73	1.81	2004	82	18	0.325	0.23
2005	336	51	0.94	0.98	2005	82	13	0.287	0.20
2006	626	37	1.3	1.36	2006	46	30	0.313	0.22
2007	314	35	0.77	0.81	2007	65	13	0.194	0.13
2008					2008				

Table 10: French rivers with some salmon in 2008 and salmon populations status.

RIVER	TRIBU-TARY	Available Informations								Status		Conservation Limit		Remarks
		Redd counting	Under-gravel Survival	Electro Fishing	Smolts Counting	Adults Counting	Exploited Stock?	Catch Data	Any Stocking?	Category *	Liability **	CL ***	Level / LC	
Bassin RHIN-MEUSE														
RHIN		N	N	YES	N	> 1999	?	N	YES	EX	1	Not Rel.	-	Restoration Project. Makes frontier with Germany
RHIN	III + Tributaries	YES	N	YES	N	N	?	N	YES	EX	1	Not Rel.	-	Restoration Project
ARTOIS-PICARDIE														
CANCHE		N	N	N	N	N	YES	YES	N	EX	-	Not Rel.	-	Sea Trout the main species
AUTHIE		N	N	N	N	N	YES	YES	N	EX	-	Not Rel.	-	Sea Trout the main species
BRESLE		YES	N	> 2006	> 1987	> 1987	YES	YES	N	VU	1	YES	<	Sea Trout the main species. Monitored river for Sea Trout and Salmon
ARQUES	Eaulne Béthune Varenes	N	N	N	N	N	YES	YES	N	VU	-	N	?	Angling fishery rising in the recent years (several tens of fish caught, under-reporting)
NORMANDIE														
VALMONT		N	N	N	N	N	N	-	N	EX	-	Not Rel.	-	Sea Trout the main species. Presence of salmon juveniles (indices of abundance in 2006-2007)
SEINE		-	-	-	N	> 2007	N	-	N	EX	1	Not Rel.	-	
RISLE		N	N	N	N	N	N	-	N	EX	-	Not Rel.	-	
TOUQUES		N	N	N	N	>2001	-		N	CR	1	N	<	15 to 35 adults per year (1% of Sea-trout stock)
ORNE		N	N	YES	N	>1981	-		N	EX	-	Not Rel.	-	Extinct in 1980 / last stocking in 1995
VIRE		N	N	YES	N	> 2002	YES	YES	N	VU	1	YES	?	returns since 1998
DOUVE		N	N	N	N	N	-	-		En		N	?	returns since 1998
SAIRE		N	N	YES	N	N	YES	YES	N	VU	1	N	?	returns since 1998
SIENNE		N	N	YES	N	N	YES	YES	N	En	1	YES	?	
THAR		N	N	YES	N	N	YES	YES	N	CR	1	N	?	
SEE + SELUNE		N	N	YES	N	N	YES	YES	N	LC	1	YES	?	River Sée= the source
SELUNE	Oir	N	YES	YES	1983	1983	YES	YES	N	VU	1	YES	>	Monitored river for Salmon
COUESNON	Loysance	YES	N	>2001	> 1990	> 1990	YES	YES	YES	VU	-	YES	<	

* EX: extinct ; CR: Critically Endangered ; En: Endangered ; VU: Vulnerable ; LC: Least Concern

** - : Unknown ; 1: Good ; 2: Medium ; 3: Low

*** Not Rel.: Not Relevant

Table 10 (continued). French rivers with some salmon in 2008 and salmon populations status.

RIVER	TRIBU-TARY	Available Informations								Status		Conservation Limit		Remarks
		Redd counting	Under-gravel Survival	Electro Fishing	Smolts Counting	Adults Counting	Exploited Stock?	Catch Data	Any Stocking?	Category *	Liability **	CL ***	Level / LC	
BRETAGNE														
GOUET		N	N	N	N	N	N	-	N	En	2	N	?	
LEFF		N	N	>1997	N	N	YES	YES	N	LC	1	YES	>	
TRIEUX		N	N	>1997	N	N	YES	YES	N	LC	1	YES	>	
JAUDY + GUINDY		N	N	>1999	N	N	YES	YES	N	LC	1	YES	>	
LEGUER		N	N	>1997	N	N	YES	YES	N	LC	1	YES	>	
YAR		N	N	>2001	N	N	YES	YES	N	LC	1	YES	>	
DOURON		N	N	>1998	N	N	YES	YES	N	LC	1	YES	>	
QUEFFLEUTH		N	N	N	N	N	YES	YES	N	NT	2	YES	?	
PENZE		N	N	>2007	N	N	YES	YES	N	LC	2	YES	>	
DOURDUFF		N	N	N	N	N	YES	YES	N	VU	3	YES	?	
JARLOT		N	N	N	N	N	YES	YES	N	En	3	YES	?	
FLECHE		N	N	N	N	N	YES	YES	N	En	3	YES	?	
ABER-ILDUT		N	N	N	N	N	YES	YES	N	En	3	YES	?	
ABER-BENOIT		N	N	N	N	N	YES	YES	N	En	3	YES	?	
ABER-WRACH		N	N	N	N	N	YES	YES	N	En	3	YES	?	
ELORN		N	N	>1998	N	>2007	YES	YES	YES	LC	1	YES	>	
MIGNONNE		N	N	N	N	N	YES	YES	N	LC	1	YES	>	
CAMFROUT		N	N	N	N	N	YES	YES	N	LC	1	YES	>	
FAOU		N	N	N	N	N	YES	YES	N	LC	1	YES	>	
AULNE		N	N	>1997	N	> 2000	YES	YES	YES	En	1	YES	<	
GOYEN		N	N	>2002	N	N	YES	YES	N	LC / VU	1	YES	>	
ODET		N	N	>1994	N	N	YES	YES	N	LC / VU	1	YES	>	
AVEN		N	N	>2003	N	N	YES	YES	N	LC / VU	1	YES	>	
ELLE		N	N	>2001	N	N	YES	YES	N	LC / VU	1	YES	>	
SCORFF		N	N	> 1975	> 1995	> 1995	YES	YES	N	LC	1	YES	= LC	Monitored River for Salmon
BLAVET		N	N	>1997	N	N	YES	YES	N	LC	1	YES	>	
KERGROIX		N	N	>2001	N	N	N	YES	N	LC	1	YES	>	
VILAINE				N	N	N	N	N		En	1	YES	<	

Table 10 (continued). French rivers with some salmon in 2008 and salmon populations status.

RIVER	TRIBU-TARY	Available Informations								Status		Conservation Limit		Remarks
		Redd counting	Under-gravel Survival	Electro Fishing	Smolts Counting	Adults Counting	Exploited Stock?	Catch Data	Any Stocking?	Category *	Liability **	CL ***	Level / LC	
Bassin LOIRE														
LOIRE	Loire	-	-	-	-	> 1997	?	N	N	EX	1	Not Rel.	-	
LOIRE	Allier	YES	N	> 1990	> 1998	> 1996	?	N	YES	En	2	N	<	
LOIRE	Arroux	YES	N	> 1998	N	> 2005	?	N	YES	EX	1	Not Rel.	-	Restoration Project
LOIRE	Vienne	-	-	-	-	> 2003	?	N	-	EX	1	Not Rel.	-	
LOIRE	Creuse	-	-	-	-	> 2006	?	N	-	EX	1	Not Rel.	-	
LOIRE	Gartempe	YES	N	YES	N	> 2001	?	N	YES	EX	1	Not Rel.	-	Restoration Project
GIRONDE, GARONNE, DORDOGNE														
DORDOGNE	Dordogne	YES	N	YES	N	> 1988	?	N	YES	EX	1	Not Rel.	-	Restoration Project
DORDOGNE	Vézère-Corrèze	YES	N	YES	N	N	?	N	YES	EX	1	Not Rel.	-	Restoration Project
GARONNE	Garonne	YES	N	YES	N	> 1986	?	N	YES	EX	1	Not Rel.	-	Restoration Project
GARONNE	Ariège	YES	N	YES	N	N	?	N	YES	EX	1	Not Rel.	-	Restoration Project
ADOUR-GAVES														
ADOUR	Gave d'Oloron	> 1970	N	> 1987	N	> 1996	YES	YES	> 1983	VU	2	N	?	
ADOUR	Gave de Pau	Occasional	N	> 1999	N	1996-2002 > 2004	YES	YES	> 1983 (x10 > 2004)	EX	1	Not Rel.	-	Restoration Project (>2004)
NIVE		> 1984	N	> 1987	N	> 1999	YES	YES	1985-1988	VU	-	N	?	
NIVELLE		YES	N	> 1985	N	> 1984	YES	YES	N (>1990)	VU	1	YES	<	Monitored River for Salmon
BIDASOA		N	N	N	N	N	N	N		CR	2	N	<	Makes frontier with Spain

Table 11: Summary of Atlantic salmon tagged and marked in France in 2008.

Origin	Primary Tag or Mark				Total
	Microtag	Pit-Tag	External Mark	Adipose Clip	
Hatchery Adult				448 700	448 700
Hatchery Juvenile					
Wild Adult			606		606
Wild Juvenile	0	483	1 504	1 317	3 304

Marking Agency	Age	Life Stage	H/W	Stock Origin	Primary Tag or Mark	Number Marked	Code or Serial	Secondary Tag or Mark	Release Date	Release Location	Comment
INRA (1)	2-4 years	Adult	W	R. Oir, R. Sélune and R. Sée	Pit-Tag	28			March-December	R. Oir	Tributary of R. Sélune
INRA (1)	1+/2+	Smolt	W	R. Oir, R. Sélune and R. Sée	Adipose Clip	1317			March-May	R. Oir	Tributary of R. Sélune
INRA (1)	0+	Parr	W	R. Oir, R. Sélune and R. Sée	Pit-Tag	354			October	R. Oir	Tributary of R. Sélune
FDPMA 35 (2)	0+	Parr	H	R. Aulne	Adipose Clip	19 600			October	R. Couesnon	
FDPMA 29 (3)	0+	Parr	H	R. Aulne	Adipose Clip	208 300			June-October	R. Aulne + 9 tributaries	
INRA (1)	2-5 years	Adult	W	R. Scorff	Blue Alcyan Dermojet	221			March-October	R. Scorff	Belly+ pelvic fin
INRA (1)	1+/2+	Smolt	W	R. Scorff	Visible Implant	1 451		Pelvic fin clip	April	R. Scorff	
INRA (1)	0+ / 1+	Pre-smolt	W	R. Scorff	Visible Implant	53		Pelvic fin clip	April	R. Scorff	
INRA (1)	1+	Parr	W	R. Scorff	Pit-Tag	129			September	R. Scorff	
CNSS (4)	11 months	Pre-smolt	H	R. Allier	Adipose Clip	220 800			February	R. Allier	
Association Migradour	2-5 years	Adult	W (5)	Adour-Gaves	Blue Alcyan Dermojet	230			April-October	R. Gave d'Oloron	
Association Migradour	2-5 years	Adult	W (5)	Adour-Gaves	Blue Alcyan Dermojet	127			April-October	R. Nive	
INRA (1)	0+-4 years	Juveniles and adults	W	R. Nivelle	Pit Tag	N/A		Blue Alcyan Dermojet	May-October	R. Nivelle	Data not available

- (1) Institut National de la Recherche Agronomique (monitored rivers)
- (2) Federation of anglers, département Ille-et-Vilaine
- (3) Federation of anglers, département Finistère
- (4) Conservatoire National du Saumon Sauvage (Chanteuges hatchery)
- (5) Caught by trapping in the river, but some may come from hatchery release as parrs

Figure 1: Numbers of salmon anglers in France between 1982 and 2008.

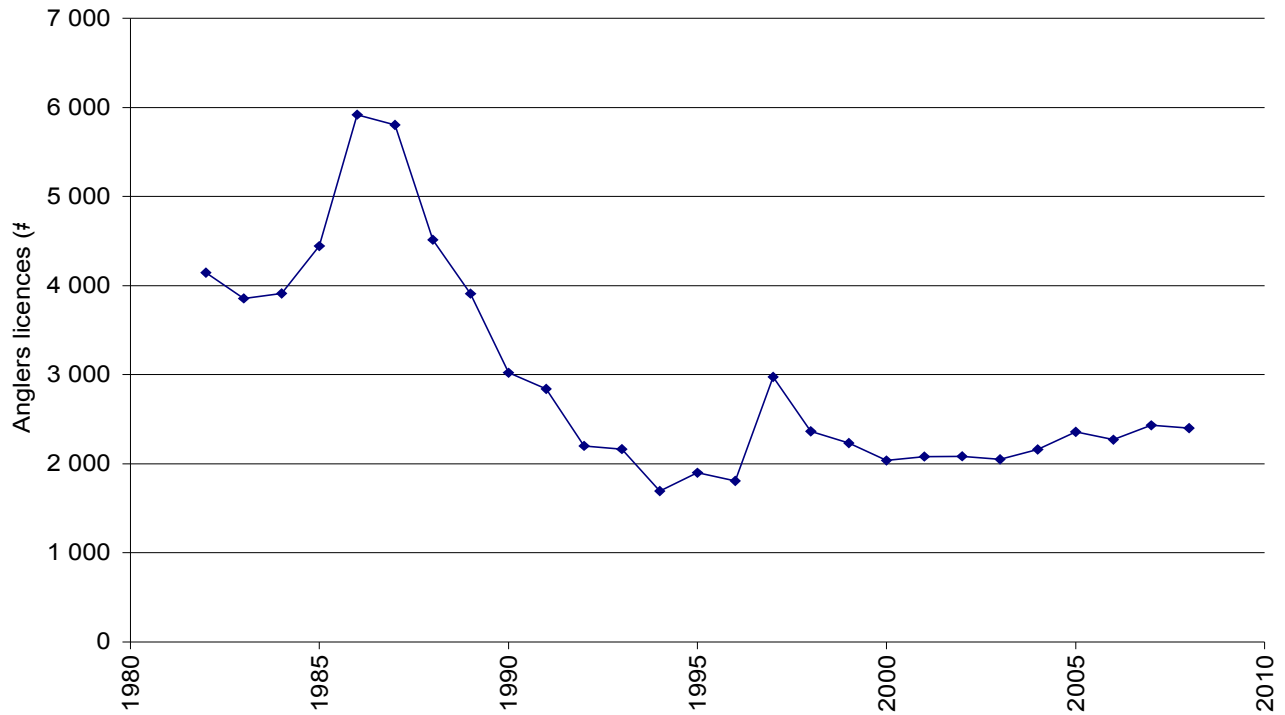


Figure 2: Estimated weight (tonnes round fresh weight) of salmon caught in coastal, estuarine and riverine French fisheries between 1995 and 2008.

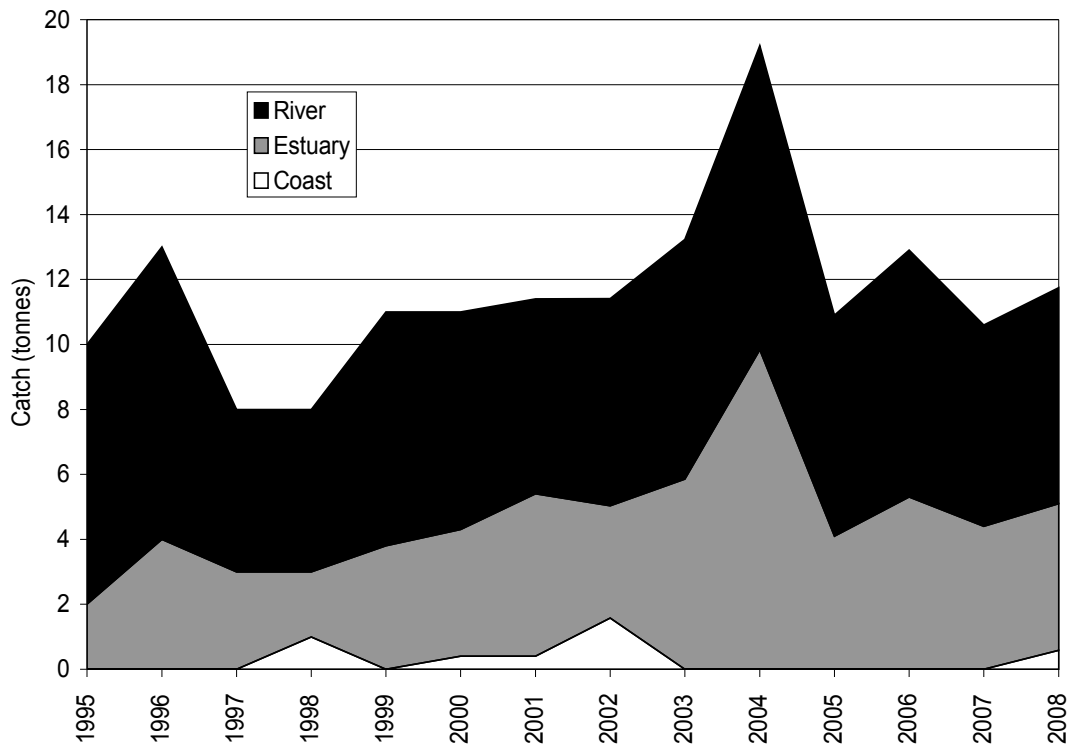


Figure 3: Fishing time spent to catch one salmon (whole season), one MSW salmon (March-May) and one 1SW salmon (June-October) by rod and line in France between 1995 and 2008.

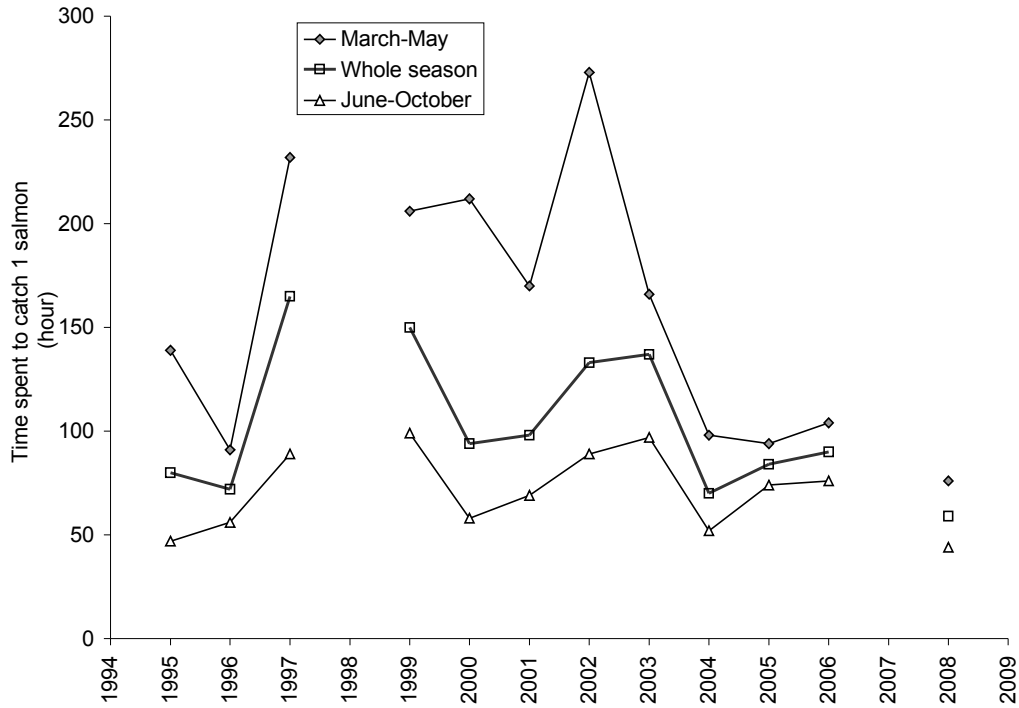


Figure 4: Number of fishing days and of salmon caught in the Adour by sea fishermen (drift nets) between 1999 and 2008.

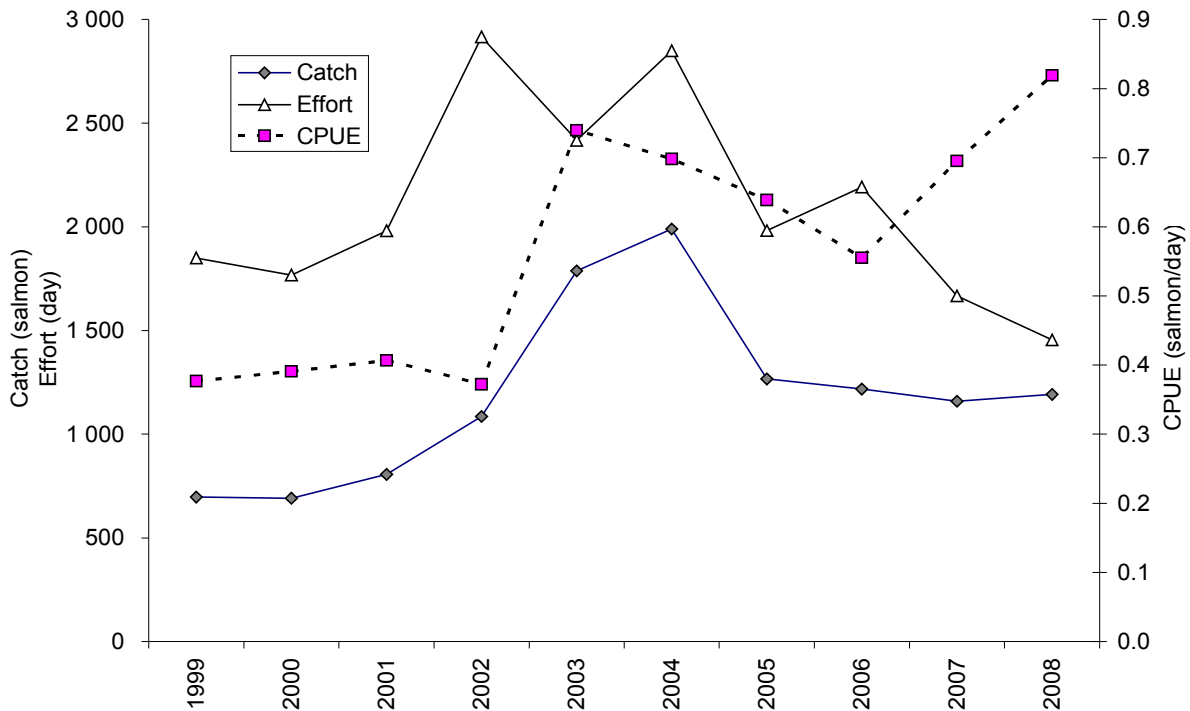


Figure 5: Estimated number of salmon caught by sea age in France between 1987 and 2008.

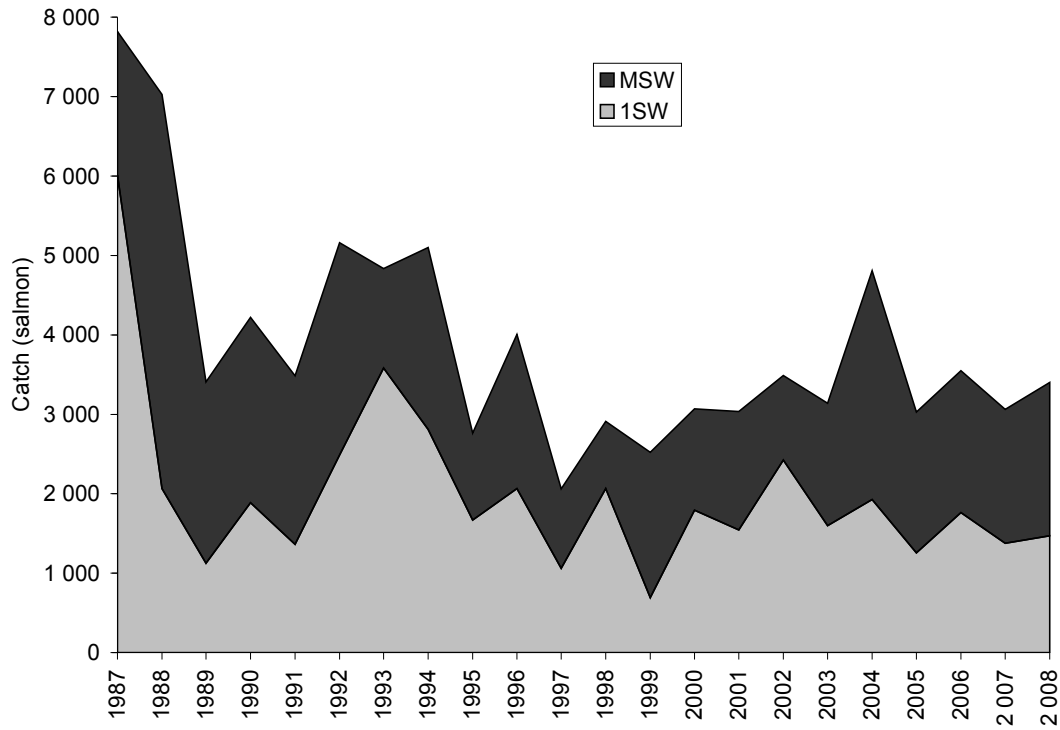


Figure 6: Proportion of 1SW salmon in the yearly catches between 1987 and 2008.

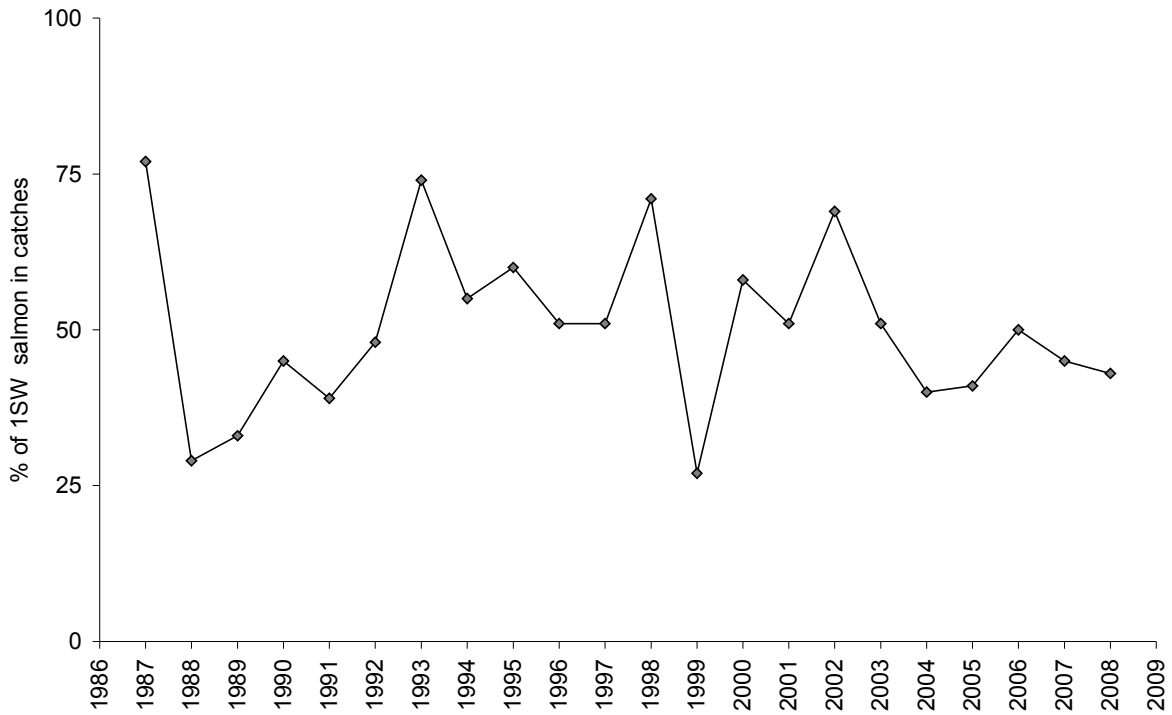


Figure 7: Estimated catch by sea age and by region in France in 2008.

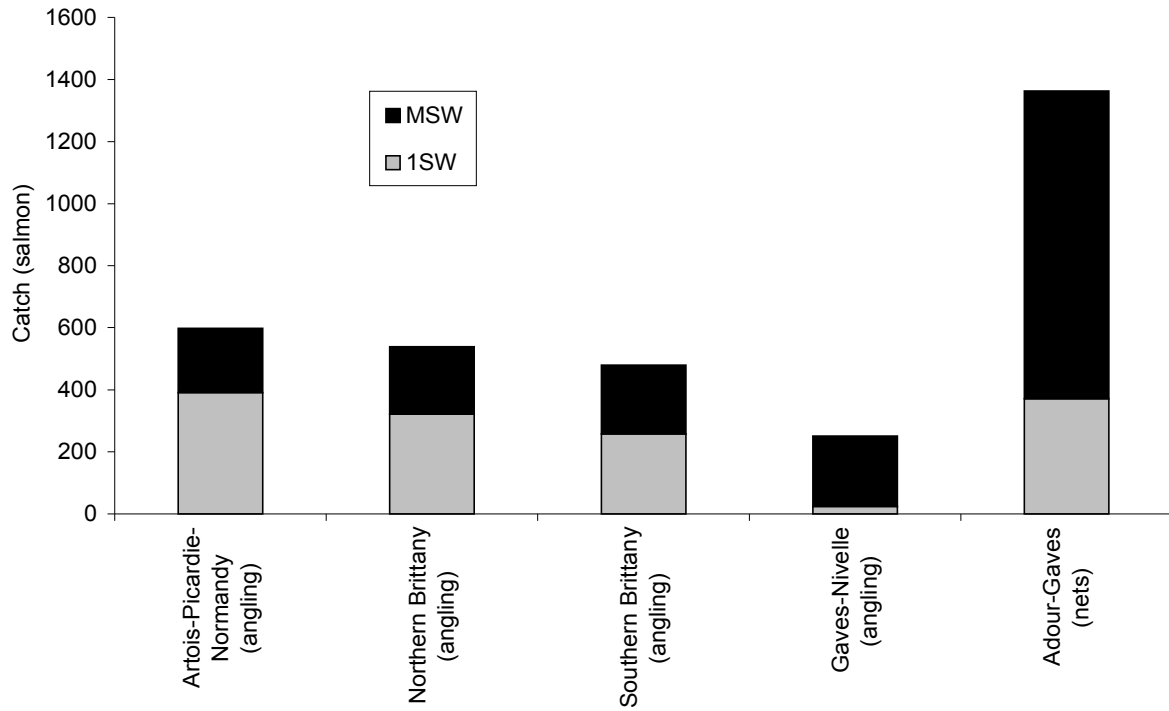


Figure 8: Exploitation rates of 1SW and MSW salmon in the River Scorff between 1995 and 2008.

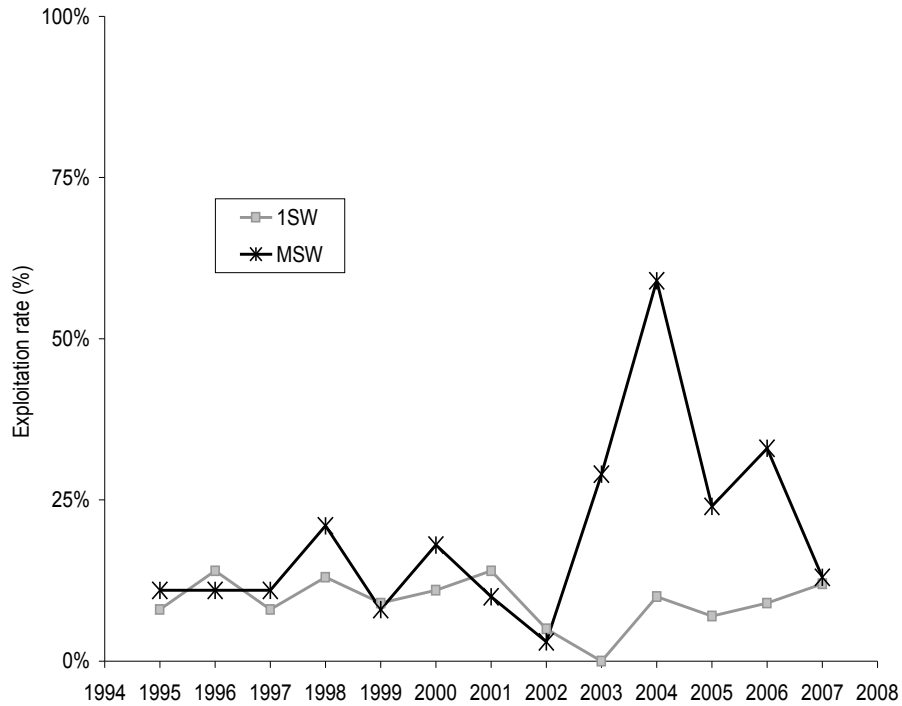
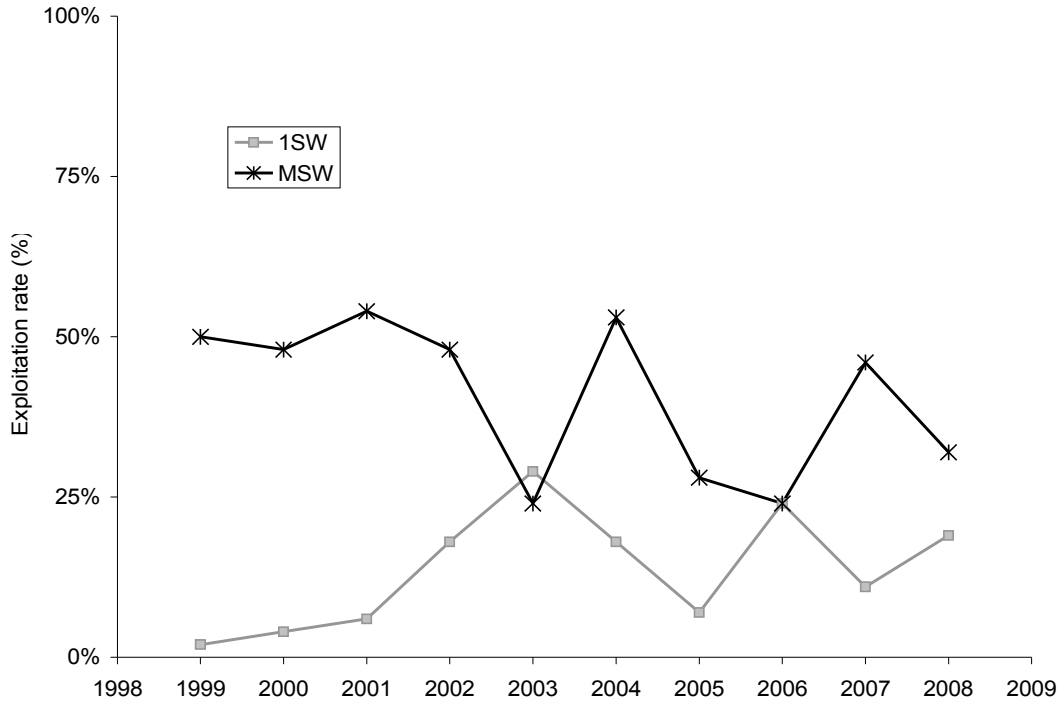


Figure 9: Exploitation rates of 1SW and MSW salmon in the Adour-Gaves Basin between 1999 and 2008.



Note: 2008 figures are provisional.

Figure 10: Consumption of MSW and global TAC in the main rivers of Lower Normandy and Brittany in 2008.

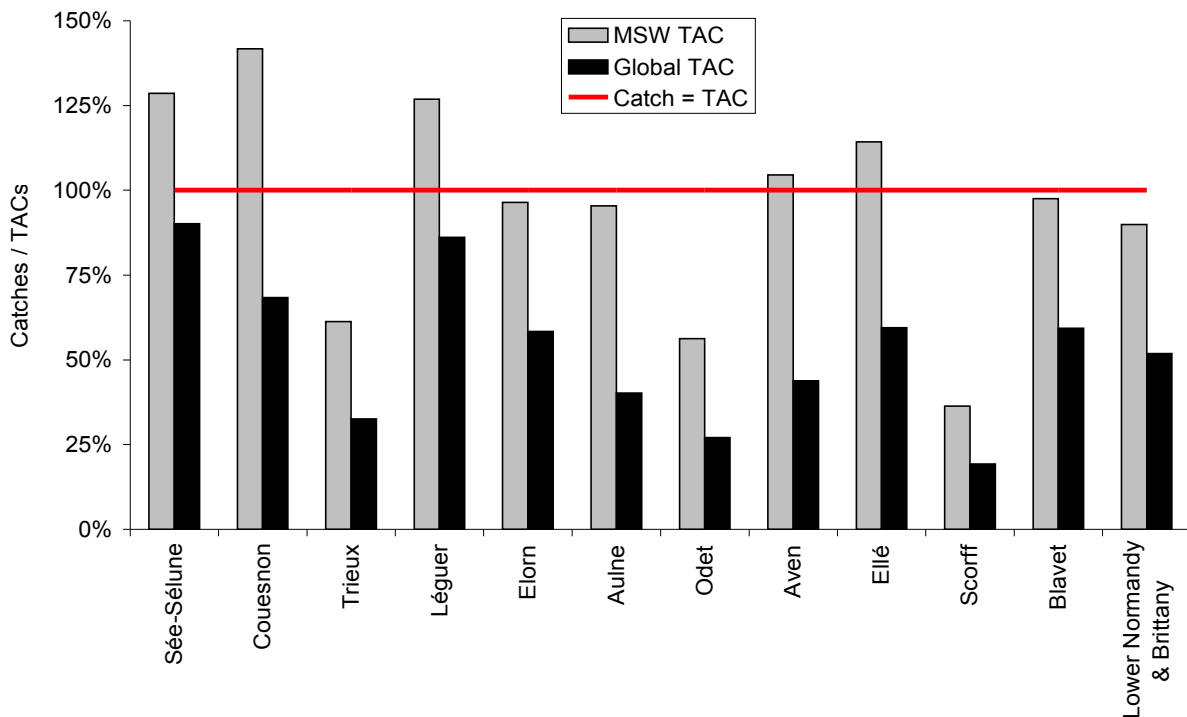


Figure 11: Estimated egg deposition in monitored Rivers Bresle, Oir, Scorff and Nivelles relative to their conservation limit between 1987 and 2008.

