

## 2 Salmon fisheries data

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### 2.1 Catches

The catch tables cover both commercial and recreational fisheries from sea, coast and rivers. However, Table 2.2.1 does not include river catches.

The catches in weight from 1972-2007 by country including discards and unreported catches are presented in Table 2.1.1, in numbers in Table 2.1.2 and by area and country in Table 2.1.3 and by Subdivision in Table 2.1.5. Values on discards and unreported catches (Tables 2.1.1, 2.1.2.) are calculated using conversion factors presented in previous years reports and are reported in terms of most likely value and 95 % probability interval (PI). An overview of management areas and rivers are shown in Figures 5.3.1.1 and 5.3.1.3. The recreational share of the catches by country is shown in Table 2.1.6. There has been a decline of the total nominal catch in the Baltic Sea starting in 1990 from 5,636 t decreasing to 1125 t in 2007. This is the lowest catch in registered since 1970.

**Denmark:** The Danish salmon fishery is a typical open sea fishery. Apart from recreational catches of 3000 individuals in 2007, and a small amount of salmon caught by non-professional fishermen along the coast, all salmon were caught by long-line (89 %) and drift-nets (11%) in the open sea. As usual the long-line fishery took place in the cold months, when the water temperature is below 10 degrees C, and the Garfish are not active.

The catches in 2007, including the recreational fishery, were 79 tonnes (2006: 163 tonnes), and 16,145 individuals (2006: 33,723 individuals). The decrease in numbers from 2006 to 2007 was 52 %. The decrease in number of caught salmons was caused by the prohibition of trade with salmon above respectively 4.4/6.0 kilos, because of high dioxin levels. Another reason is that several vessels which normally are catching salmon have been broken up.

The number of salmon caught by the recreational fishery (trolling boats) is based on information collected from sport fishermen, from the ferry company servicing Bornholm and from boat rental companies. The estimated number was 3000 salmon in 2007 equivalent to approx. 15 tonnes.

This estimate is the same as in the years 2003 – 2006. Except for the trolling fishery, it is not possible to give any kind of estimates for other kinds of non-professional salmon fishery.

All catches, including the recreational fishery, were caught in ICES subdivision 24 – 25, very close to Bornholm, as the salmon fishery was very limited and the vessels targeting salmon are quite small to operate in open Baltic.

**Estonia:** For 2007 now available separately commercial and recreational catches in the sea. In sea recreational catch is taken by fishermen who have legal right to fish with one (1) gill net.

Estonian salmon catch in sea in 2007 was below 1 t as in previous years. In coastal zone commercial catch in 2007 was about same as in last year.

For Põlula rearing station were caught 225 salmon (1074 kg) in 2007, 222 in 2006 and 119 in 2005.

In the rivers Narva, Selja, Valgejõgi, Jägala, Vääna (since 2007) and Piritä recreational salmon road fishery are allowed by licences. In total 0,7 t of salmon was taken from all 6 rivers.

**Finland:** In 2007 Finnish fishermen caught 75,367 salmon (410 t) from the Baltic Sea; this was about 10,866 salmon (40 t) more than in year 2006 and one of the lowest catches in years 1972-2007. Commercial catch was 64,200 salmon (340 t) and recreational catch including river catches was 11,167 salmon (70t). About 45 % (29,163 salmon, 155 t) of the commercial catch was landed to the Swedish (65%) and Danish harbours. Catch data from year 2007 are provisional. The estimates of recreational salmon catches in sea for years 2006-2007 are based on the results of National survey 2006. The recreational salmon catch in sea was assumed being the same in years 2006-2007, which may misestimate the catches in 2007. The river catches has been estimated by the annual surveys, interviews and voluntary riverside catch statistics.

**Latvia:** In 2007 the total catch was only 4438 salmon (20.7t) in the offshore and coastal fisheries. Offshore catches were 2960 salmon (15.6t), in coastal fishery only 1478 (5.1t) salmon were landed. Total salmon catches were five times less than average catches in the last decade.

In river fisheries (broodstock and commercial) 880 (approx.7 t) salmon were caught in the rivers Daugava and Venta. This data is included in inland fisheries catch statistics.

Angling results in the rivers Salaca and Venta estimated to be 100 salmon kelts in 2007.

**Lithuania:** In 2007 Lithuanian fishermen caught 529 salmon (1,706 t) slightly more than the last year. All salmon catches were from coastal fishery. Also 137 (0,616 t) salmon were caught in Curonian lagoon. In addition, for scientific purposes 11 salmon individuals were caught in Curonian lagoon, at migration period. 8 salmon individuals were caught in the River Neris for artificial rearing.

**Poland:** Overall offshore and coastal catch was 18 022 salmon (90,1 t) and it was 25% less than of the previous year volume.

The reported river catch of 966 fish (5,1t) originated mostly from Vistula River and Pomeranian rivers and was higher than in 2006. Most of salmon catch was made for spawning purposes.

**Russia:** In 2007 Russian fishermen caught 1408 salmon (6,4 t) from the Baltic Sea. All the offshore and coastal catch was commercial only.

More than 60% of all catches came from offshore fishing grounds in sub-division 26 in 2007. 120 salmon (0,48 t) were caught as a by-catch in the Gulf of Finland (what fisheries?). 400 spawners were caught in the rivers during brood stock fishing.

**Sweden:** The Swedish salmon catch in year 2007, 484 tonnes, was about 3 % lower than that in 2006 of 497 tonnes. The main difference between the two years was a slight drop in coastal catch and a corresponding increase in river catch from 2006 to 2007. Landings in 2007 were 25 % lower than the 5-year average 2002-06. This major difference is partly explained by the high catch in 2004, 879 tonnes, which was the highest for many years. The offshore catch in the Main Basin (Subdivs 22-29) decreased from 220 tonnes in 2006 to 216 tonnes in 2007.

In 2007 there was a recorded offshore catch in the Gulf of Bothnia (Subdivs 30-31) of 1 tonnes and a coastal catch of 161 tonnes, a decrease of 19 % since 2006. The coastal

catch in the Main Basin was estimated to 3 tonnes. River catches increased from 73 tonnes in 2006 to 103 tonnes in 2007. This is slightly, 9%, above the five-year-average of 94 tonnes. The low catch in 2007 was a low water mark and we have to go back to 1989 to find lower river catch levels.

The catches of salmon in numbers in 2007 are decreased by 2 % in comparison with previous year. Offshore catches constituted 47 % of the total catch in numbers, the coastal catch about 34% and the river catch about 19 %. This can be compared with 48, 36 and 16 % in 2006. In two rivers commercial trapnet fishery of salmon occur inside the freshwater border and they make up 17 tonnes or 3485 fish in 2007, a similar amount as in 2006. River catches are not included in the Swedish TAC catch. The catch quota that should be included in the TAC is taken at sea or along the coast and it made up 77327 fish in 2007.

### 2.1.1 Distribution of catches by countries in comparison with the TAC

Until 1992 the TAC was given in tonnes, but from 1993 the TAC was given in numbers. The landings in numbers compared to TAC by fishing nations and by areas in 1993-2007 are given in Table 2.2.1. Catches of salmon in % of TAC is presented in Figure 2.2.1.

In 2007 47,4 % of the TAC in sub-division 22-31 was utilised. (total TAC 437437 individuals). In the Gulf of Finland 84 % of the TAC of 15,419 individuals was utilised. It should be noted, that there is occasionally some exchange of TAC between countries, which may result in exceeded TAC's. The total TAC for salmon was allocated to countries and utilized in the following manner:

Contracting party	Quota	Subdiv 22-31		Subdiv 32		
		Catch	Utilized %	Quota	Catch	Utilized %
Denmark	88836	16145	18,2			
Estonia	9028	325	3,6	1581	1053	66,6
Finland	110773	63441	57,3	13836	11925	86,2
Germany	9884	3086	31,2			
Latvia	56504	5318	9,4			
Lithuania	6642	537	8,1			
Poland	26950	18988	70,5			
Sweden	120080	95241	79,3			
<b>Total EU</b>	<b>428697</b>	<b>203081</b>	<b>47,4</b>	<b>15419</b>	<b>12978</b>	<b>84,2</b>
Russia	8740	888	10,2	na	520	na
<b>TOTAL</b>	<b>437437</b>	<b>203969</b>	<b>46,6</b>	<b>15419</b>	<b>12978</b>	<b>84,2</b>

The major part of the salmon catch in the Baltic Sea was caught by professional fishermen with drift nets or long lines in the offshore areas, or by trap- and gillnets in the coastal areas. The catches in the recreational fishery using commercial gear-types are for self-consumption. These catches are usually not reported through the official channels and therefore the figures have to be estimated. Table 2.1.6 gives an estimate of the magnitude of this fishery and it appears from the table that non-commercial fisheries constitute a considerable part of the total catch of salmon. In 2007 these catches constitute 20% of the total reported salmon catch.

The proportion of the total catch by different tackles (including sports fishery) for the period 2001 – 2007 is presented in figure 2.2.2. Even with the limitations on the number of drift nets being enforced in recent years the proportion of the total catch

by drift net in 2007 was still approx. 35 %. During the period the proportion of the catch in trap nets has gradually increased and in 2007 it was 30 %.

## 2.2 Discards, misreporting and unreporting of catches

In general, data on discards, misreporting and unreporting of salmon from different fisheries in the Baltic Sea are incomplete and fragmentary. An adjustment factor based on the experts' opinion of the unreported discarded catches has therefore been developed. These opinions are based on the reported knowledge presented here and other background information available for each country. This conversion factor has been applied to obtain probabilistic estimates for the total number of salmon caught, including discarded catches. The magnitude of the present discard and unreported salmon catch is presumed to vary between regions and to account for 21- 64% of the total salmon catch in numbers (Tables 2.1.1 and 2.1.2).

As main reasons for salmon discard in the Baltic fisheries are the seal damages and bycatch of undersized young salmon in different fisheries. Salmon discard due to seal damages occurs only in the Northern part of Baltic Sea, i.e. in the main distribution area of the grey seal Gulf of Riga, Gulf of Finland and Gulf of Bothnia. Bycatch of undersized young salmon occurs in all the Baltic Sea and in different types of fisheries. With the reduced catches bycatch of undersized salmon is also reduced.

Misreporting of catches probably occurs in all different types of fisheries, fisheries zones and countries. In fact this phenomenon displays in many forms. Catch in the traditional small scale fishery as traditional direct selling fish from the boat, self-consuming of salmon or discard of dead fish without catch report, etc. Reporting of salmon as a sea trout or rainbow trout or even marine rainbow trout, creates additional source of unreported salmon. There is no data on larger scale misreporting of catches. As the TAC is not fully utilised in any country, misreporting due to catch restrictions is likely to be low.

However, inexplicable inadequacies of basic data exist: i.e. significant differences of tagged fish recapture compared to total catch of salmon by country, significant differences in catch composition in same fisheries by different countries (proportion of sea trout and salmon in same fisheries and sub-div.).

**Denmark** has not any longer information from which it is possible to estimate trustworthy discard percentages. As the quota for salmon only are utilized by less than 15%, it is very unlikely that there are any unreported catches in the Danish salmon fishery. The by-catch of salmon in other fisheries is believed to be at a quite low level. Observers from the Danish Marine Institute have participated in the herring and sprat fishery in the Baltic this winter for about 50 days, and only by-catches of very few salmon was observed in this fishery.

In **Estonia** the seal damages are serious problem in salmon and sea trout gill net fishery. By personal communications of fishermen damages are increasing from year to year. Quantitative assessment of damages is not available as fishermen in most cases did not present claims for gear compensation.

Discards of seal damaged salmon in **Finland** were 6,081 fish (31 t) in sub-divisions 22-31. Seal damages took place mainly in sub-divisions 29-31 comprising 18% of total commercial catch in the area.

In **Latvia** a small number of fishermen reported the number of salmon damaged by the seals. The total estimation of catch losses are impossible due to bad quality of salmon catch statistics in the 2005 and 2006.

In 2005 the ban of landing and selling of Baltic salmon due to dioxine content was established in Latvia. As result the large part of salmon landed in coastal fisheries was not declared.

In **Lithuania** discard, misreporting and unreporting information from the fishery was not available.

According to the EU National Data Collection Programme a discard pilot programme in salmon fishery was conducted in 2007 in **Poland**. Two cruises (together 6 fishing days) were made in March and April 2007 with SFI observers on board of vessel of 17 metres-class. In all cases catches were made in sub-div.26 and with use of driftnets. Due to logistics problems there was no possibility to sample other sub-divisions and longline cruises.

Amount of discard was very low and varied from 0,0 to 5,9% per daily catch and on average was 1,0%. Discards due to undersize was 45 % and due to damage was 55%. Maximum observed rate of discards was due to damage made by seals, when only heads of salmon left in the nets. Apart of target species, flounder and sea birds as a by-catch, were also found.

Similar observations were made in driftnet salmon cruises, conducted with observers on board as a part of activity under Regulation EC 812/2004 on reporting the presence of cetaceans and birds in salmon drift nets.

A number of young salmon (30-40 cm) can be caught sometimes in bottom and pelagic trawling. Also feeding adult salmon (up to 2-4 fish per trawling) can be caught as a by-catch in pelagic trawling targeted for sprat and herring and most frequently this fact is not recorded in logbook.

The coastal spring gillnet herring fishery frequently catches a number of smolts especially tagged ones because they are hanged in meshes by wires of tag.

Some amount of salmon caught in costal fishery could be not reported as it is used for home consumption or sold from the boat.

Reporting salmon as a sea trout or rainbow trout or even marine rainbow trout, creates additional source of unreported salmon. Data from fish inspections shows that total number of unreported salmon can be slightly up 50%. Adding together all sources of unreported and discarded salmon the overall amount of unreported salmon can achieve yearly over 50% of reported catch. Recently, very high fines imposed on unreported salmon catches will serve for better reporting, thus decrease of IUU salmon catch.

In **Russia** discard, misreporting and unreporting information from the fishery was not available. Unofficial information indicates significant poaching.

In **Sweden** total percentage of the salmon catch in trap nets that is discarded due to damage by seals is estimated to be about 15% and this leads to an estimated discard in 2007 of 34 tonnes of salmon.

### 2.3 Fishing Effort

The total fishing effort by drifting gear in the offshore fishery in the Main Basin since 1987 is presented in Table 2.4.1. which includes Baltic salmon at sea, at the coast and in the river in 1987-2007 in subdivision 22-31, excluding Gulf of Finland. The fishing efforts are expressed in number of geardays (number of fishing days times the number of gear) and are reported per half year (HYR). The coastal fishing effort on

stocks of assessment area 1 (Chapter 5) refers to the total Finnish coastal fishing effort. The coastal fishing effort on stocks in assessment area 2 refers to the Finnish coastal fishing effort in area 3 and the Swedish coastal fishing effort in area 2. The coastal fishing effort on stocks of area 3 refers to the Finnish and Swedish coastal fishing effort in area 3. Because sea trout in Poland are fished with the same gear type as salmon, effort from the Polish fishery targeting sea trout was included in the table before 2003. (Figure 2.4.1 and Table 2.4.1).

An overview of the number of fishing vessels engaged in the offshore fishery for salmon during the last 9 years period is presented in Table 2.4.2. Data are missing from Lithuania and Russia, but as the catches by these countries are small, it seems unlikely that their boats have been engaged more than occasionally in salmon fishery. Germany has no fishery targeting salmon directly, and is only catching salmon as a by-catch in other fisheries.

In 2007 77 vessels were engaged in the offshore fishery and this was a further decrease compared to the level in 2006 (98 vessels). In 2007 45 vessels fished less than 20 days and only 11 vessels were fishing more than 40 days.

In overall there is no major change in the effort in the drift net fishery in the Main Basin since mid 1990'ies, but In Denmark the total effort went down in 2007. The total Danish effort in 2007 was 19,113 (2006 25,271) driftnets, and 200,558 (2006 373,398) longline-hooks.

The introduction of national fishing zones in the 1980s and the adoption of a TAC in the 1990s combined with low market prices affected the fishing effort. In recent years effort is restricted by limitation in the number of nets used in the fishery and rules for dioxin contents (Chapter 4.3.1).

## 2.4 Catch Per Unit Effort

In the same way as biological sampling of salmon, the EU member states fisheries data collection programmes includes CPUE data.

The seasonal average CPUE's information was collected since 1980/1981 for Danish, Finnish, Latvian and Swedish fisheries in various combinations of sub- divisions in the Main Basin, the Gulf of Bothnia and the Gulf of Finland. CPUE values are presented in Table 2.5.1.

From the year 2000 all the information available on CPUE is obtainable from the WGBAST salmon Catch Database.

Available information on CPUE for countries, fisheries and sub-div is presented in the table below.

COUNTRY	SUB- DIV	OFFSHORE FISHERIES, GEAR		COASTAL FISHERIES, GEAR		PERIOD FROM
		LL	DN	GN/DN	TN	
Denmark	22- 25;26-29	X	X			1983
Estonia	28- 29; 32		X			80- 88
Finland	22- 31; 32	X	X		X*	1980
Latvia	26, 28		X		X*	1980
Poland	26	X	X	X		2000
Russia	26		X			2000
Sweden	22- 29	X	X			1985

\*- data series from 2000, LL: Longlines, DN: Driftnets, GN: Gillnets, TN: Traps

The CPUE is presented as number of salmon per 100 nets (drift net), number of salmon per 1000 hooks (longline) and number of salmon per trapnet day in coastal fisheries.

From the fishing season 1983/1984 and onwards, the CPUE in the drift net fishery has increased significantly compared to preceding years, however with somewhat lower levels in the mid 1990'ies. In 2006 (as also in 2005) the CPUE in both drift net and long-line fishery decreased substantially in the Main Basin and stayed at this level in 2007. Because of a historical low effort in the Danish salmon fishery Danish CPUE's for the last two years do not show a realistic picture of the catch ability.

## 2.5 Description of basic collection of catch data

The countries participating in the salmon fishery in the Baltic are asked to deliver data on catch of salmon and sea trout, area for catch (economical zone, ICES Sub-division), type of fishery (offshore, coastal, river, commercial, recreational), information on discard, unreported catch and seal damage. Furthermore the catch effort and CPUE in weight and number of catch in different gears (driftnet, longline, trapnet, angling or other). The effort in terms of number of days each gear was deployed is also asked for. The composition of the information provided by the countries in 2006 is summarised in the table below, containing catch in numbers.

Logbooks provide only preliminary information taken on board the vessels, where real count and weight estimates are normally difficult to obtain. The catch statistics in different countries are obtained by combination of data included in logbooks, landing declarations, first sales notes and fisheries companies catch reports.

From 2005 EU type logbooks were implemented in new member states Latvia, Estonia, Poland and Lithuania.

The catch statistics provided for ICES WGBAST are mainly based on logbooks and/or sales notes. Recreational catches are mainly estimated by questionnaires or special issues. In total, direct information on catch represented approximately 56 % of total catch. Extrapolated and estimated catch (partly based on solid information) provides information given below on approx. 44 % of the total catch. The table below provides an overview of the origin of the information.

Fishery type	Logbook <sup>1</sup>	Extrapolated	Estimated	Guestimated	Total	%
Commercial	161533	14298	880	na	176711	81,1
Discard	785			na	785	0,4
Recreational		6214	34310	na	40524	18,6
Seal Damage	7838			na		
	162318	20512	35190	na	218020	
%	74,5	9,4	16,1			100,0

1) includes all fisheries documentation, sales notes, logbooks, and landing declarations.

Catch tables are constructed by extracts from the resulting database. Because of a delay in the delivery of data from some countries, part of the information is preliminary. These data must be corrected the following year.

Effort data are shown in Table 2.4.1. The effort data are calculated separately for 3 different stock assessment management areas (see chapter 5). Basic data for these calculations are found in the catch database, but needs to be divided into the three

stock assessment areas before calculations are made. From the year 1981 Table 2.1.1 and from 1993 Table 2.1.2 show estimated discard and unreported catches.

### **Collection of catch statistics by country**

**Denmark:** The catch statistics are based on official landing reports and logbooks, combined with additional information from logbooks, e.g. type of gear for all catches, and from 2007 effort for 100 % of the catches, (before 2007 only 60-70%) collected in a database at DIFRES, and from this the total catches and effort are estimated. As no Danish salmon rivers discharges into the Baltic Sea, and salmon therefore rarely migrate into the close coastal areas, sports' fishing for salmon is only possible by offshore trolling. This catch was earlier extremely scarce, but the trolling has developed in the last few years and in the period from 2004 to 2007 an estimated 3,000 salmon per year were caught near Bornholm. The estimates of recreational catches are calculated from information from sports fishermen, information from the ferry company servicing Bornholm, and from boat rental companies.

**Estonia:** The catch statistics are based on logbooks from the offshore and coastal fisheries. Data on river catches are from brood stock fishery and anglers questionnaires.

**Finland:** Catch statistics in the commercial fishery has been collected in logbooks from the offshore and coastal fishery. Catch statistics of the commercial salmon fishery for 2007 are preliminary.

To obtain more accurate estimates on catches in rivers Tornionjoki, Simojoki and Kiiminkijoki, extensive inquiries are conducted every year among fishermen who have bought a fishing licence. Catches of the recreational salmon fishing were updated based on the Finnish survey of the recreational fishing 2006.

**Latvia:** The Latvian salmon catch and landing statistics are based on the logbooks and landing declarations from the offshore and logbooks from coastal and inland fisheries. Catch data from a small scale recreational fishing in the River Salaca and River Venta is based on questionnaires. This data are not included in catch statistics.

**Lithuania:** Catch statistics are based on logbook data. All data storing and processing are provided by the Fisheries department of Ministry of Agriculture.

**Poland:** Commercial offshore and coastal catch statistics are based on logbooks of vessels over 10m and on monthly reports of vessels smaller than 10 m. All raw data are sent through Regional Fisheries Inspectorates for input to the database, which is run by the Ministry of Agriculture and Rural Development in Warsaw and is linked to VMS centre, located in Gdynia. Estimated catch data from rivers is provided by Polish Anglers Union.

**Russia:** The catch statistics are based on landing reports, logbooks and direct observation from the offshore and coastal commercial fisheries and broodstock fisheries in the rivers. Catches could be grossly underestimated.

**Sweden:** Swedish catch statistics are based on logbooks of licensed fishermen in coastal and offshore fisheries. Catches by non-licensed fishermen in coastal areas are estimated from the total number of gears in each coastal region and the catch in the licensed fishery in the area.

On the basis of different kinds of circumstantial data, angling and trolling in the coastal and offshore areas are believed to be of small, but increasing, magnitude. Estimates of the trolling catch are based on a survey carried out in the Main Basin in

2003. Catch statistics are collected for all Swedish salmon rivers, but the quality depends on local conditions, size of the river and on how the river fishery is organised.

### Biological sampling from the catch of salmon

All EU-member states must follow the EU-minimum sampling programme as specified by EC 1639/2001 chapter H: Biological sampling of catches: composition by age and by length and chapter I: Other biological sampling. The precision level for this programme is 1 sample of 50 fishes per 100 tonnes of fish. New member states initiated national programmes from 2005.

Since the numbers specified in the EU programme is very limited many states exceed this programme.

Available details on the sampling programme are summarized in the table below, while country specific exceptions and additions to the programme are listed for each country below.

Overview of samples collected for biological sampling.

Country	TIME PERIOD / month number	Fisheries	Gear	Number of sampled fish by subdivision					Total
				22-28	29	30	31	32	
Denmark <sup>1</sup>									
Estonia	1-12	Coastal	Gillnet					320	100
Finland	1-4 and 9-12	Offshore	Longline	200					200
Finland		Offshore	Driftnet						
Finland	5-8	Coastal	Driftnet		346				346
Finland		Coastal	Trapnet		54	441	632	200	1327
Finland	5-9	River	Trapnet				476		476
Latvia	1-6,	Offshore	Driftnet	100					100
Latvia	6-11	Coast	Trapnet	693					693
Lithuania	Autumn	Coast	na	68					68
Poland	2-4, 12	Offshore	Driftnet	225					225
Russia	8-11	River	Trapnet					40	361
Russia	9-10	River	Gillnet					321	
Russia	5-11	Coast	Gillnet					179	
Sweden	1,11	Offshore	Longline	70					70
Sweden	5	Offshore	Trapnet	59					59
Sweden	6	Coast	Trapnet				390		390
Sweden	3	River	Other	34					34
Sweden	5,6	River	Trapnet				124		124
Sweden	6	River	Trapnet			103			103
Germany <sup>1</sup>									
Total				1449	400	544	1622	1060	4676

1) no sampling.

**Denmark:** In 2007 the landings of salmon in Danish harbours have been very limited and concentrated in the first quarter of the year when 81% catches was landed. As the main part (55%) of the Danish salmon catches were landed in Sweden it has not been possible collect biological data at all in 2007.

**Estonia:** Starting in 2005 Estonia follows the EU sampling programme. Sampling takes place occasionally, carried out by fishermen with about 100 salmon per year from the coastal fishery. In addition 120 – 200 salmon have been sampled annually in the river brood-stock fishery for some years.

**Finland:** In 2007 catch sampling brought in about 3500 salmon scale samples from the Finnish commercial salmon fisheries. The samples represented fisheries in terms of time and space. The whole pool of samples was resampled by stratifying according to appeared catches. The final amount of analysed samples was optimally adjusted to meet the quality criteria of DCR. Finally the following (~~text table below~~) numbers of samples were analysed by scale reading and part of these (about 1600) also by DNA micro satellite techniques. Part of these samples were collected and analysed by the national funding.

**Germany:** There is no information available on biological sampling in Germany.

**Latvia:** The biological sampling of salmon is divided by two main types of fisheries: offshore and coastal. Sampling from offshore fisheries is carried out only in the first half of the year from January till May. In coastal fisheries salmon biological sampling is carried out from June till November in two coastal locations: near the rivers Daugava (reared population) and Salaca (wild population) outlets. In total 100 salmon were sampled in offshore and 693 in coastal fisheries.

In relation with ban for driftnet fisheries from 2008 salmon sampling in offshore fisheries is not planned in after years.

**Lithuania:** From 2005 sampling will follow the EU Minimum programme. Lithuanian fishermen did not carry out specialized salmon fishing. The largest share of salmon was caught in coastal zone as while fishing for other fish species, sometimes using wide mesh size driftnets and seine nets designed for salmon, though.

**Poland:** Sampling was conducted on landed fish from off-shore targeted catch and in some cases on fish caught during pelagic trawling for sprat. The weight presented is a gutted weight. According to DCR total number of sampled fish should be 100 for the whole Polish salmon fishery, but in fact 255 fish was sampled for age, length and weight. Age was estimated on base of scale readings. Due to logistic problems data collection was conducted mainly in ICES sub-area 26 and covered only driftnet fishery. Sub-sample of salmon scales (150 samples) was sent to RKTL, Helsinki for genetic investigations.

**Russia:** There is no biological sampling programme in Russia. However 361 fish collected in the river broodstock (the rivers Neva, Narva and Luga) fishery are aged and lengths and weights are recorded.

**Sweden:** Salmon were sampled in accordance with the EU minimum programme. It also followed the Swedish National Programme for collection of fisheries data from 2003. The relevant geographic area is the ICES sub-areas IIIb, c and d. Swedish salmon fishery takes place in ICES SD 23-31 and it includes river, coastal and offshore fisheries. The samples taken exceed the required precision level.

The offshore fishery takes place mainly in the 1<sup>st</sup>, 2<sup>nd</sup> and 4<sup>th</sup> quarters of the year. Sampling covered all the different fisheries types and was carried out by screening of salmon landings in weight classes in ports in south Sweden. As a part of the Swedish catch is landed at Bornholm in Denmark sampling was also carried out there in cooperation with DIFRES.

The coastal trapnet salmon fishery covers several quarters. Samples were taken by the fishermen at two different locations in the Gulf of Bothnia (ICES SD 30-31); Skellefteå and outside Nordmaling, and by the Board of Fisheries in the archipelago of Haparanda. All data are stored in a database at the Institute of Freshwater Research.

As salmon from the offshore fishery is already gutted when landed, sex and gonadal maturity by age are not available from offshore samples taken in ports. In addition to sampling in ports some sampling is carried out on board commercial vessels. Sexing of fish is carried out in a proper manner by some coastal fishermen. At the same time when ageing of fish takes place by scale reading, it is also determined if the fish is of wild or reared origin. As a preparation of studies on stock proportions in the fishery, genetic samples were taken both in the offshore and coastal fishery.

## 2.6 Age Composition and Mean Weight of the Catches

Since 2004 - 2005 all EU Baltic sea countries follow the Fisheries data collection programme including the salmon catch age, length and weight composition. The national data collection programmes mostly include different fisheries regions (offshore, coastal, river), different fisheries (commercial, angling, broodstock), different origin (wild, reared) fish. Only Russia provides data collection according to state research programme.

The number of sampled and analysed fish varies between countries; mostly the national sampling programmes exceed the precision requirements of EC 1639/2001. Annually at least 3 - 4 thousand salmon are sampled from different fisheries. Data on age, length, weight composition of salmon catches are available from year indicated and onward:

COUNTRY	FISHERIES	PARAMETERS			
		Lenght	Weight	Age	Sex
Denmark <sup>1</sup>	Offshore	2002	1973	1973	-
Estonia	Coastal	2005	2005	2005	2005
Finland	Offshore	1986	1986	1986	
	Coastal	1986	1986	1986	
	River	1974	1974	1974	1974
Latvia	Offshore <sup>2</sup>	1974	1974	1974	-
	Coastal	1978	1978	1978	1978
Lithuania	Coastal	na	na	na	na
Russia	River	na	na	na	na
Sweden	Offshore	2002	2002	2002	2006
	Coastal	1990	1990	1990	1990
	River	1991	1991	1991	1991
Poland	Offshore	2003	2003	2003	2003

1- no sampling in 2007

There are some problems in comparing the previous year's data by the differently stated salmon birthday. For this reason there will be a significant shift between age readings, so the data should be recalculated concerning one date of the annual year.

## 2.7 Proportion of wild salmon in genetic studies and scale readings of catch samples

This year a combined DNA- and smolt-age-data was used to estimate stock and stock group proportions of catches samples. The baseline data included 33 stocks and for most of them 17 loci baseline data were available (Table 2.8.1). Adding the smolt-age data to the analysis appeared to improve especially distinguishing between genetically very similar stocks in two wild and hatchery stock pairs: Tornionjoki wild- and hatchery stocks and Umeälven (hatchery) – Vindelälven (wild) stocks. Smolt age was used as two classes: 'two-year-old smolts' and 'older smolts'. Two-year-old smolts could originate either from a wild or hatchery stock, but hatchery stocks consisted exclusively from the two-year-old smolts. Older than two year old smolts were assumed to wild a wild stock.

The estimates of the stock group proportions in the catch samples (Table 2.8.2.) changed significantly from the values of corresponding results in the previous years WG reports. Earlier the discrepancy between the results of DNA analysis and scale reading was in many samples considerable. These results suggested about the similar proportions. The DNA-analysis, however, requires a further exploration before using the stock proportion results as an input in the assessment model. For the first time also the estimates of individual river stock proportions were given for all samples (Table 2.8.3)

The results suggested that in the Åland Sea catch samples the proportion of wild fish was in 2007 the highest (78%) since 2000 (Table 2.8.2, Figure 2.8.1). The main stocks contributing into catches were Tornionjoki wild, Kalixälven, Tornionjoki hatchery and Iijoki stocks. From the Swedish stocks Luleälven and Vindelälven and Ångermanälven have contributed regularly, but with smaller proportions (Table 2.8.3).

In the Bothnian Sea the proportion of wild fish was also high in 2007, 58%, but not quite as high as in the last year (64%). In this area about one fifth of the catch is coming from the local releases of Neva stock salmon, other important stocks are Kalixälven, Tornionjoki wild and hatchery and Iijoki.

In the Bothnian Bay catch samples until 2005 are solely from the Finnish fishery and since 2006 a pooled Finnish Swedish sample. The proportion of wild fish has been higher in the pooled samples (57-60%), than in pure Finnish samples (16-43%). In the Finnish coastal fishery Finnish hatchery stocks Tornionjoki hatchery, Iijoki and Oulujoki are more common. In the Swedish fishery the Luleälven, Åbyälven and Byskeälven make a marked contribution.

In the Main Basin samples the proportion wild salmon was over 50 % in 2006-2007, when the international catch sample has been taken. Last year Finnish and Swedish hatchery stocks contributed evenly, but in 2007 the proportion of Swedish hatchery stocks was higher (Tables 2.8.3 and 2.8.4).

## 2.8 Description of gears used in salmon fisheries

A description of the gears used in the different fisheries is found in Anon. (2003). This report includes extensive descriptions of presently used gears in Sweden, Finland, Estonia, Latvia, Poland and Denmark, as well as historical gear development in the Baltic Salmon fisheries

In the coastal fishery trap nets and anchored floating gillnets are more commonly used. Some regional differences and development of the gear used was also described in Anon. (2003). In the offshore fisheries some of the Finnish and Polish fishermen in the 1980'ies started to use deeper driftnets with total depth of 10 - 15m in comparison with traditional driftnets (6.4 m). In the Gulf of Bothnia and Gulf of Finland, trap net fisheries has been developed using new netting-material that the seal cannot bite through as well as fixed fences at the entrance of the traps preventing the seal from entering the traps has been developed. In Sweden a new type of trap has been developed in recent years, the so called 'push-up trap', with fixed walls that protect the catch from seals.

With continued and increasing problems from seal predating on salmon captured in fishing gear, the use of traps that protect the salmon from seal predation was raised in 2004 compared to previous years. In Sweden the number of seal-safe traps has continued to increase. An inventory of the number of both traditional and seal-safe traps will be carried out in 2007. In Finland the government has been giving support to coastal fishermen to change from traditional traps to seal-safe traps. In 2006 the number of these traps in operation in Finland was more than 100.

## 2.9 Present tagging and marking

### 2.9.1 Fin-clipping

Data on numbers of adipose fin-clipped salmon are given in Table 2.10.1.1 In almost all cases fin-clippings were aimed at distinguishing between reared/enhanced salmon or from the wild production. There is continuous increasing trend in number of fin-clipped parr and smolt since 2003.

In 2007 total number of fin-clipped salmon parr and smolt increased 13% comparing to 2006 and was 2,275,130. Out of this it was 148,224 parr and 2,126,906 smolt. Comparing to 2006 the number of fin-clipped salmon parr decreased but number of fin-clipped salmon smolt increased about 50%.

In 2007 39% of all reared salmon smolt production was fin-clipped, which was at the same level as in 2006.

Most fin-clippings (in numbers) were carried out in Subdivisions 30 and 31.

Starting in 2005 it is mandatory in Sweden to fin-clip all salmon. All Estonian salmon smolts were fin-clipped in 2007. In Poland all salmon released into Rivers Leba, Slupia, Wieprza and Parseta were adipose fin clipped. In Russia 109 100 1-yr salmon smolts in Luga hatchery were fin-clipped.

### 2.9.2 External Tagging

The number of Carlin tagged reared salmon was 80,292 in 2007 (Table 2.10.2.1), which was 10% less than in 2006. The share of tagged salmon in all releases was the same as in the 2006 (approx. 2%). A smaller amount of wild salmon smolts in Lithuania and Latvia were tagged with Floy tags.

The recapture rate of salmon smolts shows rather decreasing trend in last years in the Gulf of Bothnia, Gulf of Finland and Main Basin (Figures F2.10.2.1, F2.10.2.2), however, recapture rate has been even lower in the Baltic Main Basin (0.2–7.0%). In the Gulf of Bothnia recapture rate was at similar level in Swedish and Finnish tagging in 1980–2002. Based on Finnish data, there is observed lower recapture rate of salmon in the Gulf of Bothnia than in Gulf of Finland. Tagging results indicates the long-term

variation in the survival and the fluctuation seems to follow the same path in all countries. According to tagging data the survival of the released smolts is at present lower than a long-term average.

There is a need to increase tag reporting rates in most of countries since increased returns will substantially improve quality of salmon assessments.

### 2.9.3 Tag reporting rate

Tagging in Baltic salmon monitoring programs is mostly based on Carlin type of tags relying on tag recoveries being reported by the public. Therefore it is vital that fishermen find and report all tags. Some studies to estimate the reporting rate has been carried out in the Baltic Sea and their results indicate an obvious unreporting.

Backiel and Bartel (1967), working on sea trout, assumed that the increased mortality, tag loss and incomplete discovery and/or return brought about an underestimation of recaptures by ca. 15%. Debowski and Bartel (1996), based on analysis of tagging experiments in 1961 through 1986, estimated that underestimation of stocking efficiency, which was caused by not reported tags and increased mortality of tagged smolts was up to 40%.

The number of reported salmon tags has dropped in Poland since 2001. Now, for two years, the rate has been around 0.4 %. Comparing the yearly recapture tags (excluded in reporting rate) with reported tags, no increasing in number of former one were noted.

Decreasing trend in returns can be to some extent explained also by catch limits and the attitude of fishermen, which are afraid to return tags because they think, those tags can prove, to some extent, exceeded catch limits. In Poland, increase of reward paid to fishermen does not affect seriously returning rates and it is believed that there will be observed continue decrease in number of returning tags in future, because of tax obligation associated with received reward that was enforced in 2007.

In Denmark two high rewarded-tag sea trout release experiments were conducted in 1988. Increase in return rates were 10.2 % and 62.5 % respectively, depending on local awareness and local fishing patterns. It is, however, doubtful if these results can be extrapolated to the whole Baltic salmon fishery.

A larger Swedish dataset exists from the offshore fishery in the Main Basin. A fisherman at Gotland, assumed to be reliable on the basis of earlier experiences, agreed to report all tags he found in the catches. When comparing the number of Swedish tags that he found in his catches, to the total number of Swedish tags reported, some underreporting from this fishery was indicated.

Observations from the offshore drift net fishery in the Main Basin in 2002, involving observers on board two salmon fishing boats suggest that slightly less than 1 % of salmon caught is tagged with Carlin tags. This number may be compared to results from other analysis, assuming equal number of recaptures of tagged salmon in all samples of salmon.

Reporting rate may vary between countries. Comparison of reporting rates from two countries fishing in the Baltic Main Basin indicates, that one country can report significantly less than the other.

An experiment with different rewards for different tags (electronic Data Storage Tags – DST's) and conventional - Carlin tags, was conducted in the coastal fishery in the Gulf of Bothnia in 1995-1997. For the DST tags it was clearly stated that a substantial

reward was offered. Clear differences in recapture rates were observed. However, it was not ascertained that the two tag types were mixed, and the results should be taken with caution. Nonetheless substantial differences in reporting were observed.

Comparing reporting rate from anglers in the Dalälven to observations in the brood stock fishery data from Dalälven suggests that the reporting rate by anglers in the river is about 80%.

In the Gulf of Finland studies from the late 1980s suggested that the reporting rate varied between 40-75% (median 55%).

## **2.10 Tagging data in the Baltic salmon stock assessment**

Tagging data in combination with the tag reporting rates have been used within the assessment of Baltic salmon in order to estimate the population parameters as well as the exploitation rates by the different fisheries (section 5.3.8). Table 2.11.1 gives an overview of the number of tagged hatchery-reared and wild salmon released in rivers of assessment areas 1, 2 or 3. Table 2.11.1 present numbers of tagged reared salmon released in different areas and years of recaptures in particular fisheries. No reliable Swedish tagging data have been available for recent years hence the large decrease in tagged salmon in areas 2 and 3. For wild salmon only salmon from area 1 have been tagged and not in every year. The number of wild tagged salmon has increased during recent years.

**Table 2.1.1** Nominal catches, discards (incl. seal damaged salmon) and unreported catches of Baltic Salmon in tonnes round fresh weight, from sea, coast and river by country in 1972-2007 in sub-division 22-32. (mode = most likely value, 95% PI = probability interval)

Year	Reported catches by country										Reported catches total	Discard		Unreported catches		Total catches	
	Denmark	Estonia	Finland	Germany	Latvia	Lithuania	Poland	Russia	Sweden	USSR		mode	95% PI	mode	95% PI	mode	95% PI
1972	1045	na	403	117	na	na	13	na	477	107	2162	na	na	na	na	na	
1973	1119	na	516	107	na	na	17	na	723	122	2604	na	na	na	na	na	
1974	1224	na	703	52	na	na	20	na	756	176	2931	na	na	na	na	na	
1975	1210	na	697	67	na	na	10	na	787	237	3008	na	na	na	na	na	
1976	1410	na	688	58	na	na	7	na	665	221	3049	na	na	na	na	na	
1977	1011	na	699	77	na	na	6	na	669	177	2639	na	na	na	na	na	
1978	810	na	532	22	na	na	4	na	524	144	2036	na	na	na	na	na	
1979	854	na	558	31	na	na	4	na	491	200	2138	na	na	na	na	na	
1980	886	na	668	40	na	na	22	na	556	326	2498	na	na	na	na	na	
1981	844	25	663	43	184	36	45	61	705		2606	319	193-498	456	144-1101	3470	3051-4056
1982	604	50	543	20	174	30	38	57	542		2058	246	148-386	352	110-864	2727	2401-3192
1983	697	58	645	25	286	33	76	93	544		2457	302	182-471	430	135-1040	3273	2877-3825
1984	1145	97	1073	32	364	43	72	88	745		3659	428	256-678	616	192-1533	4829	4253-5659
1985	1345	91	963	30	324	41	162	84	999		4039	457	271-736	655	193-1693	5297	4661-6227
1986	848	76	1000	41	409	57	137	74	966		3608	437	264-685	624	197-1519	4792	4216-5608
1987	955	92	1051	26	395	62	267	104	1043		3995	463	278-736	656	198-1673	5256	4626-6171
1988	778	79	797	41	346	48	93	89	906		3177	381	229-600	555	178-1339	4222	3714-4935
1989	850	103	1166	52	523	70	80	141	1416		4401	542	327-847	780	246-1866	5877	5157-6856
1990	729	93	2294	36	607	66	195	148	1468		5636	801	481-1245	1098	324-2512	7737	6718-9062
1991	625	86	2171	28	481	62	77	177	1096		4803	654	382-1039	937	278-2139	6565	5699-7694
1992	645	32	2121	27	278	20	170	66	1189		4548	640	356-1046	912	254-2149	6284	5401-7456
1993 1)	575	32	1626	31	256	15	191	90	1134		3966	560	338-864	771	235-1753	5436	4729-6358
1994	737	10	1209	10	130	5	184	45	851		3181	410	248-637	594	189-1365	4292	3755-5005
1995	556	9	1324	19	139	2	133	63	795		3040	422	254-654	594	187-1339	4161	3625-4861
1996	525	9	1316	12	150	14	125	47	940		3138	475	282-738	640	200-1457	4371	3785-5146
1997	489	10	1357	38	170	5	110	27	824		3030	450	260-716	631	196-1441	4232	3653-5007
1998	495	8	850	42	125	5	118	36	815		2494	353	214-541	501	168-1102	3433	2996-4002
1999	395	14	720	29	166	6	135	25	672		2162	319	191-494	440	142-987	3001	2606-3518
2000	421	23	757	44	149	5	144	27	771		2342	242	135-391	466	159-1022	3127	2728-3642
2001	443	16	606	39	136	4	180	37	616		2076	311	189-476	423	137-945	2884	2506-3379
2002	334	16	509	29	108	11	197	66	572		1841	290	177-442	377	120-851	2577	2233-3029
2003	454	10	410	29	47	3	198	22	454		1627	251	159-373	327	109-719	2257	1973-2625
2004	370	7	654	35	34	3	88	16	879		2087	326	190-511	430	126-1007	2927	2519-3476
2005	214	8	616	24	23	3	114	15	719		1736	264	152-418	360	108-834	2410	2074-2861
2006	178	8	370	18	14	2	117	5	497		1208	210	121-331	268	73-639	1788	1532-2135
2007	79	7	410	15	26	2	95	6	484		1125	160	91-255	241	79-535	1572	1363-1850

All data from 1972-1994 includes sub-divisions 24-32, while it is more uncertain in which years sub-divisions 22-23 are included. The catches in sub-divisions 22-23 are normally less than one ton. From 1995 data includes sub-divisions 22-32.

Catches from the recreational fishery are included in reported catches as follows: Finland from 1980, Sweden from 1988, Denmark from 1998. Other countries have no, or very low recreational catches.

Danish, Finnish, German, Polish and Swedish catches are converted from gutted to round fresh weight w by multiplying by 1.1.

Estonian, Latvian, Lithuanian and Russian catches before 1981 are summarized as USSR catches.

Estonian, Latvian, Lithuanian and Russian catches are reported as whole fresh weight.

Sea trout are included in the sea catches in the order of 3 % for Denmark (before 1983), 3% for Estonia, Germany, Latvia, Lithuania, Russia, and about 5% for Poland (before 1997).

Estimated non-reported coastal catches in Sub-division 25 has from 1993 been included in the Swedish statistics.

Danish coastal catches are non-professional trolling catches.

1. In 1993 fishermen from the Faroe Islands caught 16 tonnes, which are included in total Danish catches.

In 2007 data from Finland, Russia and Sweden are preliminary.

**Table 2.1.2** Nominal catches, discards (incl. seal damaged salmons) and unreported catches of Baltic Salmon in numbers from sea, coast and river by country in 1993-2007. Sub-divisions 22-32. (mode = most likely value, 95% PI = probabilistic interval)

Year	Country									reported total	Discard		Unreported catches		Total catches	
	Denmark	Estonia	Finland	Germany	Latvia	Lithuania	Poland	Russia	Sweden		mode	95% PI	mode	95% PI	mode	95% PI
1993 1)	111840	5400	248790	6240	47410	2320	42530	9195	202390	676115	95452	57720-147400	131463	40170-298800	926661	806100-1084000
1994	139350	1200	208000	1890	27581	895	40817	5800	158871	584404	75239	45640-117100	109162	34860-250700	788429	689900-919500
1995	114906	1494	206856	4418	27080	468	29458	7209	161224	553113	76802	46270-119100	108085	34130-243600	757219	659500-884400
1996	105934	1187	266521	2400	29977	2544	27701	6980	206577	649821	98362	58600-152800	132560	41510-301600	905259	783800-1066000
1997	87746	2047	245945	6840	32128	879	24501	5121	147910	553117	82230	47550-130800	115158	35860-263100	772416	666800-914100
1998	92687	1629	154676	8379	21703	1069	26122	7237	166174	479676	67818	41240-104100	96346	32310-212000	660390	576300-769700
1999	75956	2817	129276	5805	33368	1298	27130	5340	139558	420548	62085	37240-96120	85673	27800-192100	583776	507000-684300
2000	84938	4485	144260	8810	33841	1460	28925	5562	165016	477297	71425	40060-115600	101028	30450-234700	669513	576600-796600
2001	90388	3285	115756	7717	29002	1205	35606	7392	149391	439742	67802	41330-103800	89932	29110-201700	613696	532500-719900
2002	76122	3247	104641	5762	21808	3351	39374	13230	138255	405790	65383	40100-99620	83499	26570-188700	569853	493300-670500
2003 2)	108845	2055	99149	5766	11339	1040	40870	4413	115347	388824	61752	39160-91820	78574	26060-173300	542344	473400-631700
2004 2)	81425	1452	132105	7087	7700	704	17650	5480	192856	446459	67052	40210-103400	88988	26530-203400	604116	522800-711300
2005	42491	1618	115068	4799	5629	698	22896	3069	144584	340852	52561	30730-82560	72106	22100-164800	478595	413400-565700
2006	33723	1516	64501	3551	3195	488	22207	1002	97285	227468	38677	22710-60630	50406	14630-117800	336595	289600-399600
2007	16145	1378	75367	3086	5318	537	18988	1408	95241	217468	31440	18040-50020	46372	14870-104000	305102	264200-359200

All data from 1993-1994, includes sub-divisions 24-32, while it is more uncertain in which years sub-divisions 22-23 are included.

The catches in sub-divisions 22-23 are normally less than one tonnes.

From 1995 data includes sub-divisions 22-32.

Catches from the recreational fishery are included in reported catches as follows: Finland from 1980, Sweden from 1988, Denmark from 1998.

Other countries have no, or very low recreational catches.

1) In 1993 Fishermen from the Faroe Islands caught 3200 individuals, which is included in the total Danish catches.

In 2007 data from Finland, Russia and Sweden are preliminary.

**Table 2.1.3** Nominal catches of Baltic Salmon in tonnes round fresh weight, from sea, coast and river by country and region in 1972 - 2007. S=sea, C=coast, R=river.

Year	Main Basin (Sub-divisions 22-29)										
	Denmark	Finland	Germany	Poland	Sweden		USSR		Total		GT
	S	S+C	S	S	S	R	S	C+R	S	C+R	
1972	1034	122	117	13	277	0	0	107	1563	107	1670
1973	1107	190	107	17	407	3	0	122	1828	125	1953
1974	1224	282	52	20	403	3	21	155	2002	158	2160
1975	1112	211	67	10	352	3	43	194	1795	197	1992
1976	1372	181	58	7	332	2	84	123	2034	125	2159
1977	951	134	77	6	317	3	68	96	1553	99	1652
1978	810	191	22	4	252	2	90	48	1369	50	1419
1979	854	199	31	4	264	1	167	29	1519	30	1549
1980	886	305	40	22	325	1	303	16	1881	17	1898

Year	Main Basin (Sub-divisions 22-29)																									
	Denmark		Estonia		Finland			Germany	Latvia				Lithuania		Poland			Russia		Sweden			Total			
	S	C	S	C	S	C	R	S	S	C	R	S	C	S	C	R	S	C	S	C	R	S	C	R	GT	
1981	844	*	23	0	310	18	0	43	167	17	0	36	na	45	na	na	56		401	0	1	1925	35	1	1961	
1982	604	*	45	0	184	16	0	20	143	31	0	30	na	38	na	na	57		376	0	1	1497	47	1	1545	
1983	697	*	55	0	134	18	0	25	181	105	0	33	na	76	na	na	93		370	0	2	1664	123	2	1789	
1984	1145	*	92	0	208	29	0	32	275	89	0	43	na	72	na	na	81		549	0	4	2497	118	4	2619	
1985	1345	*	87	0	280	26	0	30	234	90	0	41	na	162	na	na	64		842	0	5	3085	116	5	3206	
1986	848	*	52	0	306	38	0	41	279	130	0	57	na	137	na	na	46		764	0	4	2530	168	4	2702	
1987	955	*	82	0	446	40	0	26	327	68	0	62	na	267	na	na	81		887	0	4	3133	108	4	3245	
1988	778	*	60	0	305	30	0	41	250	96	0	48	na	93	na	na	74		710	0	6	2359	126	6	2491	
1989	850	*	67	0	365	35	0	52	392	131	0	70	na	80	na	na	104		1053	0	4	3033	166	4	3203	
1990	729	*	68	0	467	46	1	36	419	188	0	66	na	195	na	na	109		949	0	9	3038	234	10	3282	
1991	625	*	64	0	478	35	1	28	361	120	0	62	na	77	na	na	86		641	0	14	2422	155	15	2592	
1992	645	*	19	4	354	25	1	27	204	74	0	20	na	170	na	na	37		694	0	7	2170	103	8	2281	
1993	591	*	23	4	425	76	1	31	204	52	0	15	na	191	na	na	49		754	7	5	2283	139	6	2428	
1994	737	*	2	4	372	80	1	10	97	33	0	5	na	184	na	na	29		574	11	8	2010	128	9	2147	
1995	556	*	4	3	613	86	1	19	100	39	0	2	na	121	12	na	36		464	13	6	1915	153	7	2075	
1996	525	*	2	4	306	53	1	12	97	53	0	14	na	124	1	na	na	35		551	8	5	1631	154	6	1791
1997	489	*	1	5	359	44	0	38	106	64	0	1	4	110	0	0	na	23		354	9	7	1458	149	7	1614
1998	485	10	0	4	324	14	0	42	65	60	0	1	4	105	9	4	na	33		442	3	7	1464	137	11	1612
1999	385	10	0	4	234	108	0	29	107	59	0	1	5	122	9	4	na	22		334	2	7	1212	219	11	1442
2000	411	10	1	7	282	87	0	44	91	58	0	0	5	125	13	6	23	0		461	2	8	1439	182	14	1635
2001	433	10	0	4	135	76	0	39	66	71	0	1	4	162	12	6	33	0		313	2	7	1181	178	13	1373
2002	319	15	0	6	154	59	0	29	47	61	0	1	9	178	9	10	64	0		228	2	6	1021	161	16	1198
2003	439	15	0	3	115	41	0	29	33	14	0	0	3	154	22	22	20	0		210	3	3	999	102	25	1126
2004	355	15	0	3	169	108	0	35	19	13	2	0	2	83	na	5	14	0		433	5	3	1108	145	11	1264
2005	199	15	0	1	188	92	0	24	15	8	0	0	2	104	5	5	12	0		314	5	2	856	129	8	993
2006	163	15	0	1	105	28	0	18	9	5	0	0	2	100	11	6	3	0		220	3	1	618	66	7	691
2007	64	15	0	2	158	18	0	15	16	3	7	0	2	75	15	5	4	0		216	4	2	548	59	14	621

Table 2.1.3 Continued

Year	Gulf of Bothnia (Sub-divisions 30-31)											Main Basin+Gulf of Bothnia (Sub-divs. 22-31) Total		
	Denmark	Finland			Sweden			Total				S	C+R	GT
	S	S	S+C	C	S	C	R	S	C	R	GT			
1972	11	0	143	0	9	126	65	163	126	65	354	1726	298	2024
1973	12	0	191	0	13	166	134	216	166	134	516	2044	425	2469
1974	0	0	310	0	15	180	155	325	180	155	660	2327	493	2820
1975	98	0	412	0	33	272	127	543	272	127	942	2338	596	2934
1976	38	271	0	155	22	229	80	331	384	80	795	2365	589	2954
1977	60	348	0	142	49	240	60	457	382	60	899	2010	541	2551
1978	0	127	0	145	18	212	40	145	357	40	542	1514	447	1961
1979	0	172	0	121	20	171	35	192	292	35	519	1711	357	2068
1980	0	162	0	148	23	172	35	185	320	35	540	2066	372	2438

Year	Gulf of Bothnia ( Sub-divisions 30-31)										Main Basin + Gulf of Bothnia (Sub-divisions 22-31) Total			
	Finland			Sweden			Total				S	C	R	GT
	S	C	R	S	C	R	S	C	R	GT				
1981	125	157	6	26	242	35	151	399	41	591	2076	434	42	2552
1982	131	111	3	0	135	30	131	246	33	410	1628	293	34	1955
1983	176	118	4	0	140	32	176	258	36	470	1840	381	38	2259
1984	401	178	5	0	140	52	401	318	57	776	2898	436	61	3395
1985	247	151	4	0	114	38	247	265	42	554	3332	381	47	3760
1986	124	176	5	11	146	41	135	322	46	503	2665	490	50	3205
1987	66	173	6	8	106	38	74	279	44	397	3207	387	48	3642
1988	74	146	6	1	141	48	75	287	54	416	2434	413	60	2907
1989	225	207	6	10	281	68	235	488	74	797	3268	654	78	4000
1990	597	680	14	12	395	103	609	1075	117	1801	3647	1309	127	5083
1991	580	523	14	1	350	90	581	873	104	1558	3003	1028	119	4150
1992	487	746	14	7	386	95	494	1132	109	1735	2664	1235	117	4016
1993	279	426	16	10	267	91	289	693	107	1089	2572	832	113	3517
1994	238	269	14	0	185	73	238	454	87	779	2248	582	96	2926
1995	66	302	20	0	214	97	66	516	117	699	1981	669	124	2774
1996	96	350	93	5	261	110	101	611	203	915	1732	765	209	2706
1997	44	360	110	1	295	158	45	655	268	968	1503	804	275	2582
1998	57	225	43	2	224	137	59	449	180	688	1523	586	191	2300
1999	17	175	23	1	195	133	18	370	156	544	1230	589	167	1986
2000	11	170	30	0	167	133	11	337	163	511	1450	519	177	2146
2001	9	218	26	1	175	117	10	393	143	546	1191	571	157	1919
2002	5	193	20	1	233	101	6	426	121	554	1027	588	137	1752
2003	1	167	25	2	164	73	3	331	98	432	1002	433	123	1558
2004	3	274	32	0	352	86	3	627	118	748	1111	772	129	2012
2005	6	204	37	1	275	123	6	479	160	644	862	608	167	1637
2006	1	140	17	6	195	71	7	335	88	431	625	401	95	1122
2007	3	127	27	1	161	101	4	288	128	420	552	347	142	1041

Table 2.1.3 Continued

Year	Gulf of Finland (Sub-division 32)					Sub-division 22-32		
	Finland			USSR		Total		
	S	S+C	C	S	C+R	S	C+R	GT
1972	0	138	0	0	0	1864	298	2162
1973	0	135	0	0	0	2179	425	2604
1974	0	111	0	0	0	2438	493	2931
1975	0	74	0	0	0	2412	596	3008
1976	81	0	0	0	14	2446	603	3049
1977	75	0	0	0	13	2085	554	2639
1978	68	0	1	0	6	1582	454	2036
1979	63	0	3	0	4	1774	364	2138
1980	51	0	2	0	7	2117	381	2498

Year	Gulf of Finland (Sub-division 32)											Sub-division 22-32				
	Estonia			Finland			Russia		Total				Total			
	S	C	R	S	C	R	C	R	S	C	R	GT	S	C	R	GT
1981	0	2	0	46	1	0	5	0	46	8	0	54	2122	442	42	2606
1982	0	5	0	91	7	0	0	0	91	12	0	103	1719	305	34	2058
1983	0	3	0	163	32	0	0	0	163	35	0	198	2003	416	38	2457
1984	0	5	0	210	42	0	7	0	210	54	0	264	3108	490	61	3659
1985	0	4	0	219	34	2	20	0	219	58	2	279	3551	439	49	4039
1986	24	0	0	270	79	2	28	0	294	107	2	403	2959	597	52	3608
1987	10	0	0	257	61	2	23	0	267	84	2	353	3474	471	50	3995
1988	19	0	0	122	112	2	15	0	141	127	2	270	2575	540	62	3177
1989	36	0	0	181	145	2	37	0	217	182	2	401	3485	836	80	4401
1990	25	0	0	118	369	2	35	4	143	404	6	553	3790	1713	133	5636
1991	22	0	0	140	398	2	88	3	162	486	5	653	3165	1514	124	4803
1992	6	3	0	77	415	2	28	1	83	446	3	532	2747	1681	120	4548
1993 1)	3	1	1	91	309	3	39	2	94	349	6	449	2666	1181	119	3966
1994	3	1	0	88	141	6	15	1	91	157	7	255	2339	739	103	3181
1995	1	1	0	32	200	5	25	2	33	226	7	266	2014	895	131	3040
1996	0	3	0	83	324	10	10	2	83	337	12	432	1815	1102	221	3138
1997	0	4	0	89	341	10	4	0	89	349	10	448	1592	1153	285	3030
1998	0	4	0	21	156	10	0	3	21	160	13	194	1544	746	204	2494
1999	0	10	0	29	127	7	0	3	29	137	10	176	1259	726	177	2162
2000	0	14	1	37	130	11	0	4	37	144	16	196	1486	663	193	2342
2001	0	10	2	19	111	11	0	3	19	122	16	157	1211	693	173	2076
2002	1	10	0	17	46	15	0	2	18	56	16	90	1044	643	154	1841
2003	0	7	0	3	50	8	0	1	3	57	9	69	1006	489	132	1627
2004	0	4	0	2	57	9	1	1	3	62	11	75	1114	834	139	2087
2005	0	6	0	3	72	15	1	2	3	79	17	99	865	687	184	1736
2006	0	5	1	3	65	10	1	2	3	70	13	86	628	471	108	1208
2007	0	4	1	3	65	9	0	1	3	69	11	84	556	416	153	1125

All data from 1972-1994, includes sub-divisions 24-32, while it is more uncertain in which years sub-divisions 22-23 are included. The catches in sub-divisions 22-32 are normally less than one tonnes. From 1995 data includes

Catches from the recreational fishery are included as follows: Finland from 1980, Sweden from 1988, Denmark from 1998.

Other countries have no, or very low recreational catches.

Danish, Finnish, German, Polish and Swedish catches are converted from gutted to round fresh weight by multiplying by 1.1.

Estonian, Latvian, Lithuanian and Russian catches before 1981 are summarized as USSR catches.

Estonian, Latvian, Lithuanian and Russian catches are reported as hole fresh weight.

Sea trout are included in the sea catches in the order of 3% for Denmark (before 1983), 3% for Estonia, Germany, Latvia, Lithuania, Russia, and about 5% for Poland (before 1997).

Estonian sea catches in Sub-division 32 in 1986-1991 include a small quantity of coastal catches.

Estimated non-reported coastal catches in Sub-division 25 has from 1993 been included in the Swedish statistics.

Danish coast catches are non-professional trolling catches.

1) In 1993 fishermen from the Faroe Islands caught 16 tonnes, which are included in total Danish catches.

In 2007 data from Finland, Russia and Sweden are preliminary.

**Table 2.1.4** Nominal catches of Baltic Salmon in numbers, from sea, coast and river by country and region in 1996-2007.  
S=sea, C=coast, R=river.

Year	Main Basin (Sub-divisions 22-29)																								
	Denmark		Estonia		Finland			Germany	Latvia			Lithuania			Poland			Russia	Sweden			Main Basin (sub-divisions 22-29) Total			
	S	C	S	C	S	C	R	S	S	C	R	S	C	R	S	C	R	S	S	C	R	SEA	COAST	RIVER	GT
1996	105934	0	263	528	58844	8337	200	2400	19400	10577	0	1485	1059	27479	222	0	5199	121631	1322	633	342635	22045	833	365513	
1997	87746	0	205	1023	61469	7018	0	6840	20033	12095	0	214	665	24436	0	65	4098	68551	1415	810	273592	22216	875	296683	
1998	90687	2000	0	770	60248	2368	0	8379	13605	8098	0	288	781	23305	1927	890	6522	99407	573	940	302441	16517	1830	320788	
1999	73956	2000	28	741	45652	15007	0	5805	24309	9059	0	166	1132	24435	1835	860	4330	74192	408	876	252873	30182	1736	284791	
2000	82938	2000	129	1190	56141	12747	0	8810	24735	9106	0	78	1382	25051	2679	1195	4648	107719	400	1005	310249	29504	2200	341954	
2001	88388	2000	122	819	26616	10706	0	7717	18194	10808	0	152	1053	33017	1764	825	6584	78873	407	890	259663	27557	1715	288935	
2002	73122	3000	0	1171	32870	9503	0	5762	11942	9781	85	363	2988	35636	1804	1934	12804	60242	462	699	232741	28709	2718	264168	
2003	105845	3000	16	681	24975	6521	0	5766	8843	2496	0	74	966	30886	4282	5702	3982	54201	498	469	234588	18444	6171	259203	
2004	78425	3000	na	594	35567	17824	50	7087	4984	2316	400	49	655	16539	na	1111	4983	99208	849	441	246842	25238	2002	274082	
2005	39491	3000	na	286	36917	14736	25	4799	2787	2054	788	na	691	20869	1025	1002	2433	66527	698	337	173823	22490	2159	198472	
2006	30723	3000	na	291	19958	4326	20	3551	1705	1490	0	9	474	5	20050	1274	883	552	45685	542	180	122233	11397	1088	134718
2007	13145	3000	na	325	30371	2773	20	3086	2960	1478	880	0	529	14984	3038	966	888	44844	576	243	110278	11719	2117	124114	

Year	Gulf of Bothnia ( Sub-divisions 30-31)										Main Basin + Gulf of Bothnia (Sub-divisions 22-31) Total			
	Finland			Sweden			Total				SEA	COAST	RIVER	GT
	S	C	R	S	C	R	S	C	R	GT	SEA	COAST	RIVER	GT
1996	22196	84940	14000	1181	61239	20571	23377	146179	34571	204127	366012	168224	35404	569640
1997	8205	76683	17000	251	49724	27159	8456	126407	44159	179022	282048	148623	45034	475705
1998	11105	46269	5100	329	41487	23438	11434	87756	28538	127728	313875	104273	30368	448516
1999	3529	35348	3100	89	38447	25546	3618	73795	28646	106059	256491	103977	30382	390850
2000	2423	37755	4150	13	32588	23291	2436	70343	27441	100219	312685	99847	29641	442173
2001	1904	49497	3750	122	44077	25022	2026	93574	28772	124373	261690	121131	30487	413308
2002	864	42433	3900	174	55261	21417	1038	97694	25317	124050	233779	126403	28035	388218
2003	166	51922	4500	293	43047	16839	459	94969	21339	116767	235047	113413	27510	375970
2004	604	60368	5900	0	75151	17207	604	135519	23107	159230	247446	160757	25109	433312
2005	1045	39983	6700	99	55174	21749	1144	95157	28449	124750	174967	117647	30608	323222
2006	162	24776	2620	1144	34544	15190	1306	59320	17810	78436	123539	70716	18898	213153
2007	596	26111	3570	195	31712	17671	791	57823	21241	111069	69543	23358	203970	

Year	Gulf of Finland (Sub-division 32)										Sub-divisions 22-32 Total					
	Estonia			Finland			Russia				Total					
	S	C	R	S	C	R	C 1)	R	S	C	R	GT	SEA	COAST	RIVER	GT
1996	0	396	0	20664	55840	1500	1485	296	20664	57721	1796	80181	386676	225945	37200	649821
1997	0	819	0	19577	54493	1500	1023	0	19577	56335	1500	77412	301625	204958	46534	553117
1998	22	761	76	4210	23876	1500	65	650	4232	24702	2226	31160	318107	128975	32594	479676
1999	12	1904	132	6234	19306	1100	95	915	6246	21305	2147	29698	262737	125282	32529	420548
2000	79	2833	254	8105	21040	1900	79	835	8184	23952	2989	35124	320869	123799	32630	477297
2001	62	1965	317	3804	17578	1900	82	726	3866	19625	2943	26434	265556	140756	33430	439742
2002	108	1968	0	3652	8219	3200	18	408	3760	10205	3608	17573	237540	136608	31643	405790
2003	17	1341	0	553	8812	1700	75	356	570	10228	2056	12854	235617	123641	29566	388824
2004	36	822	0	480	9811	1500	183	314	516	10816	1814	13147	247962	171573	26923	446459
2005	34	1298	0	536	12326	2800	213	423	570	13837	3223	17630	175537	131484	33831	340852
2006	48	955	222	506	10433	1700	121	329	554	11509	2251	14315	124093	82225	21149	227468
2007	64	764	225	456	10074	1395	120	400	520	10958	2020	13498	111589	80501	25378	217468

Data from the recreational fishery are included in Swedish and Finnish data. Recreational fishery are included in Danish data from 1998. Other countries have no, or very low recreational catches.  
In 1996 sea trout are included in the Polish catches in the order of 5%.  
1) Russian coastal catches have in earlier reports been recorded as sea catches.  
In 2007 data from Finland, Russia and Sweden are preliminary.

**Table 2.1.5** Nominal catches of Baltic Salmon in tonnes round fresh weight and numbers from sea, coast and river, by country and sub-divisions in 2007. Sub-divisions 22-32. S=sea, C=coast, R=river

Sub-division	Fishery	-	COUNTRY									Total	
			DK	EE	FI	DE	LV	LT	PL	RU	SE		
22	S	Weight				1							0
		Number				247							19
23	S	Weight										0	30
		Number										19	6194
24	S	Weight	19			6				0		4	0
		Number	4000			1230				2		793	19
	C	Weight										0	190
		Number										19	38488
25	S	Weight	44		44	6				15		104	19
		Number	9145		8108	1221				2953		21335	3669
		Weight	15							1		3	2
	C	Number	3000							171		498	336
		Weight								0		2	236
	R	Number								94		242	45162
		Weight								0		73	16
26	S	Number			81	2	15	0	60	4		73	16
		Weight			14672	388	2828	0	12029	888	14357		3377
		Weight						2	14				5
	C	Number						529	2848			880	
		Weight						0	5			13	
	R	Number					8	872				3437	
		Weight				6					8	0	
27	S	Number				1381						2056	73
		Weight										0	0
		Number										73	1
	C	Weight										0	0
		Number										1	11346
		Weight										0	47
28	S	Number				25		1				21	4
		Weight				5988		132				5226	1654
		Weight			1			3				0	4
	C	Number			171		1478				5	1654	
		Weight					7					7	
	R	Number					880					880	
		Weight									7	8	
		Number										1058	1280
29	S	Weight				1						7	8
		Number				222							19
		Weight			1	18							2927
	C	Number			154	2773						0	
		Weight				0						20	
30	S	Number				3						1	4
		Weight				594						195	789
		Weight				33						43	77
	C	Number				6093					7305	13398	
		Weight				1						25	26
	R	Number				170					4943	5113	
		Weight				0						76	102
31	S	Number				2							2
		Weight				94						117	211
		Number				20018						24407	44425
	C	Weight				26						76	102
		Number				3400						12728	16128
32	S	Weight			0	3							3
		Number			64	456							520
		Weight			4	65					0		69
	C	Number			764	10074					120		10958
		Weight			1	9					1		11
	R	Number			225	1395					400		2020
		Weight											
TOTAL 22-31	S	Weight	64	0	161	15	16	0	75	4	217		82
		Number	13145	0	30967	3086	2960	0	14984	888	45039		111069
		Weight	15	2	146	0	3	2	15	0	165		347
	C	Number	3000	325	28885	0	1478	529	3038	0	32288		69543
		Weight	0	0	27	0	7	0	5	0	103		142
	R	Number	0	0	3590	0	880	8	966	0	17914		23358
		Weight											
TOTAL 22-31	S,C,R	Weight	79	2	334	15	26	2	95	4	484		1041
		Number	16145	325	63442	3086	5318	537	18988	888	95241		203970
TOTAL 32	S,C,R	Weight	0	5	77	0	0	0	0	2	0		84
		Number	0	1053	11925	0	0	0	0	0	520	0	13498
GRAND TOTAL	S	Weight	64	0	164	15	16	0	75	4	217		556
		Number	13145	64	31423	3086	2960	0	14984	888	45039		111589
		Weight	15	6	210	0	3	2	15	0	165		416
	C	Number	3000	1089	38959	0	1478	529	3038	120	32288		80501
		Weight	0	1	36	0	7	0	5	1	103		153
	R	Number	0	225	4985	0	880	8	966	400	17914		25378
		Weight											
NATIONAL TOTAL	S,C,R	Weight	79	7	410	15	26	2	95	6	484		1125
		Number	16145	1378	75367	3086	5318	537	18988	1408	95241		217468

Data from the recreational fishery are included in Danish, Swedish and Finnish data. Other countries have no, or very low recreational catches. In 2007 data from Finland, Russia and Sweden are preliminary.

**Table 2.1.6.** Non-commercial catches of Baltic Salmon in numbers from sea, coast and river by country in 1997-2007 in sub-division 22-31 and sub-division 32. (S = Sea, C = Coast).

Sub-divisions 22-31																			
Year	Denmark	Estonia		Finland		Germany	Latvia		Lithuania		Poland		Russia		Sweden		S+C	River	Grand
	S+C	S+C	River	S+C	River	S+C	S+C	River	S+C	River	S+C	River	S+C	River	S+C	River	Total	Total	Total
1997	na	na	na	na	17000	0	na	na	na	na	na	65	na	na	na	27969	na	45034	45034
1998	2000	na	na	na	5100	0	na	na	na	na	na	890	na	na	na	24378	2000	30368	32368
1999	2000	0	132	5100	400	0	0	0	0	0	0	100	0	0	9350	18529	16450	19161	35611
2000	2000	0	0	11667	4150	0	0	0	0	0	0	0	0	0	na	na	13667	4150	17817
2001	2000	0	0	11667	3750	0	0	0	0	0	0	na	0	0	14443	22216	28110	25966	54076
2002	3000	0	0	3500	3900	0	0	85	0	0	0	na	0	0	17906	16945	24406	20930	45336
2003	3000	0	0	3500	4500	0	0	0	0	0	0	na	0	0	14889	13424	21389	17924	39313
2004	3000	0	0	17200	5950	0	0	0	0	0	0	na	0	0	22939	14687	43139	20637	63776
2005	3000	0	0	17200	6725	0	0	0	0	0	0	na	0	0	17931	15260	38131	21985	60116
2006	3000	0	0	6000	2640	0	0	0	0	0	0	na	0	0	12757	12229	21757	14869	36626
2007	3000	0	0	6000	3590	0	0	0	0	0	0	na	0	0	11928	14429	20928	18019	38947

Year	Sub-division 32									Sub-division 22-32		
	Estonia		Finland		Russia		S+C	River	Grand	S+C	River	GT
	S+C	River	S+C	River	S+C	River	Total	Total	Total	Total	Total	Total
1997	na	na	na	17000	na	na	na	17000	17000	na	62034	62034
1998	na	na	na	5100	na	na	na	5100	5100	2000	35468	37468
1999	0	132	10000	1100	0	0	10000	1232	11232	26450	20393	46843
2000	0	na	9300	1900	0	0	9300	1900	11200	22967	6050	29017
2001	0	na	9300	1900	0	0	9300	1900	11200	37410	27866	65276
2002	0	na	2500	3200	0	0	2500	3200	5700	26906	24130	51036
2003	0	na	2500	1700	0	0	2500	1700	4200	23889	19624	43513
2004	0	na	3400	1500	0	0	3400	1500	4900	46539	22137	68676
2005	206	na	3400	2800	0	0	3606	2800	6406	41737	24785	66522
2006	138	na	182	1700	0	0	320	1700	2020	22077	16569	38646
2007	0	na	182	1395	0	0	182	1395	1577	21110	19414	40524

In 2007 data from Finland, Russia and Sweden are preliminary.

**Table 2.2.1** Nominal catches of Baltic Salmon in numbers from sea and coast, excluding river catches, by country in 1993-2007 and in comparison with TAC. Sub-divisions 22-32.

Year	Baltic Main Basin and Gulf of Bothnia (Sub-divisions 22-31)											
	Fishing Nation									Total	TAC	Landing in % of TAC
	Denmark	Estonia	Finland	Germany	Latvia	Lithuania	Poland	Russia	Sweden			
1993 1)2)	111840	5400	248790	6240	47410	2320	42530	9195	202390	676115	650000	104
1994	139350	1200	208000	1890	27581	895	40817	5800	158871	584404	600000	97
1995	114906	1494	206856	4418	27080	468	29458	7209	161224	553113	500000	111
1996	105934	791	174317	2400	29977	2544	27701	5199	185373	534236	450000	119
1997	87746	1228	153375	6840	32128	879	24436	4098	119941	430671	410000	105
1998 3)	92687	770	119990	8379	21703	1069	25232	6522	141796	418148	410000	102
1999	75956	769	99536	5805	33368	1298	26270	4330	113136	360468	410000	88
2000	84938	1319	109066	8810	33841	1460	27730	4648	140720	412532	450000	92
2001	90388	941	88724	7717	29002	1205	34781	6584	123479	382821	450000	85
2002	76122	1171	85671	5762	21723	3351	37440	12804	116139	360183	450000	80
2003	108845	697	83584	5766	11339	1040	35168	3982	98039	348460	460000	76
2004	81425	594	114363	7087	7300	704	16539	4983	175208	408203	460000	89
2005	42491	286	92681	4799	4841	691	21894	2433	122498	292614	460000	64
2006	33723	291	49222	3551	3195	483	21324	552	81915	194256	460000	42
2007	16145	325	59852	3086	4438	529	18022	888	77327	180612	428697	42

Year	Gulf of Finland (Sub-division 32)					
	Fishing Nation			Total	TAC	Landing in % of TAC
	Estonia	Finland	Russia			
1993 1)	874	98691	8200	107765	120000	90
1994	800	53487	3200	57487	120000	48
1995	338	32935	5035	38308	120000	32
1996	396	76504	1485	78385	120000	65
1997	819	74070	1023	75912	110000	69
1998	783	28086	65	28934	110000	26
1999	1916	25540	95	27551	100000	28
2000	2912	29144	79	32135	90000	36
2001	2027	21382	82	23491	70000	34
2002	2076	11871	18	13965	60000	23
2003	1358	9365	75	10798	50000	22
2004	858	10292	183	11333	35000	32
2005	1332	12862	213	14407	17000	85
2006	1003	10940	121	12064	17000	71
2007	828	10530	120	11478	15419	74

All data from 1993-1994, includes sub-divisions 24-32, while it is more uncertain in which years sub-divisions 22-23 are included.

The catches in sub-divisions 22-23 are normally less than one tonnes. From 1995 data includes sub-divisions 22-32.

Estonia: Offshore catches reported by numbers, coastal catches converted from weight. Catches from the recreational fishery are included as follows: Finland from 1980, Sweden from 1988, and Denmark from 1998. Other countries have no, or very low recreational catches.

Estimated non-reported coastal catches in sub-division 25, have from 1993 been included in the Swedish catches.

Sea trout are included in the sea catches in the order of 5% for Poland before 1997.

1) In 1993 Polish, Russian and Faroe llands numbers are converted from weight.

2) In 1993 Fishermen from Faroe llands caught 3100 salmon included in the total Danish catches.

3) In 1998 German numbers are converted from weight.

In 2007 data from Finland, Russia and Sweden are preliminary.

**Table 2.4.1:** Fishing efforts of Baltic salmon at sea, at the coast and in the river in 1987-2004 in subdivision 22-31 (excluding Gulf of Finland). The fishing efforts are expressed in number of gear-days (number of fishing days times the number of gear) and are reported per half year (HYR). The coastal fishing effort on stocks of assessment area 1 refers to the total Finnish coastal fishing effort. The coastal fishing effort on stocks of assessment area 2 refers to the Finnish coastal fishing effort in area 3 and the Swedish coastal fishing effort in area 2. The coastal fishing effort on stocks of area 3 refers to the Finnish and Swedish coastal fishing effort in area 3.

Effort		Area 1			Area 2			Area 3		
		Offshore driftnet	Offshore longline	Commercial Coastal driftnet	Commercial coastal trapnet	Commercial coastal other gear	Commercial coastal trapnet	Commercial coastal other gear	Commercial coastal trapnet	Commercial coastal other gear
1987	I	1523587	1447789	233703	14951	99171	9667	67956	9634	88375
	II	2122115	2142495	95009	43259	164084	41234	175555	30097	437726
1988	I	1914340	1568397	240296	25398	126509	17893	127284	16826	423237
	II	1623306	1173796	16092	39460	118718	48936	132120	36463	374801
1989	I	1833110	1216741	320879	26015	197177	20803	132953	17414	154266
	II	1956293	829833	57311	29927	148415	28071	251729	20063	308801
1990	I	1487996	1517064	339960	43175	120228	35247	105160	27503	135350
	II	1515556	1050816	24366	47749	140541	47096	128380	36231	144260
1991	I	1763644	1138104	398447	34855	185839	31535	139274	31492	178861
	II	1397820	534334	32973	43500	275215	53178	221086	35203	225466
1992	I	1553470	1174250	448853	53069	179395	30342	135902	29157	191465
	II	1556474	555475	24726	49407	172123	45152	146772	30569	147919
1993	I	1649367	835887	595034	51095	162849	35201	61293	35783	70857
	II	774882	288516	26783	50649	125396	51060	100180	39086	144853
1994	I	1380558	753481	538689	29200	116753	18881	110042	18667	133865
	II	1363667	217771	42617	33271	77930	52531	100885	32188	71983
1995	I	1756044	633759	394522	20053	68728	13086	66889	12847	67961
	II	954980	78073	58336	35505	83800	39916	80370	26112	73944
1996	I	828908	854241	48742	7081	46687	8535	44996	5032	41991
	II	606402	314326	29944	35670	53723	42139	47610	22809	48254
1997	I	681679	937311	87216	7402	51848	10025	43644	6452	43555
	II	549884	516218	30991	39201	55584	43746	38279	25712	41084
1998	I	1173608	1054785	89338	5269	3636	4341	2123	3861	1974
	II	710037	182425	23055	13463	4755	21369	3327	10374	3247
1999	I	1026458	965912	101733	8553	4792	7856	2976	5460	2470
	II	629706	570516	24849	16866	4532	33945	2739	13240	2601
2000	I	1014465	1298280	85034	7000	3227	6905	1571	5468	1375
	II	1052352	721174	21974	16361	5096	22908	4016	12697	3996
2001	I	824956	1286600	98962	8624	2088	8180	1451	6647	1305
	II	887163	602809	3695	19270	1791	26529	1210	15468	1208
2002	I	931134	1212120	82572	11419	1330	10424	487	8763	440
	II	501841	967826	3785	16608	2448	29788	2764	15081	2712
2003	I	699856	1075016	92732	8868	3602	7718	3658	4837	3029
	II	762600	745546	2290	23706	5179	17425	6794	9330	4602
2004	I	673321	841713	93460	8427	2154	9365	982	4777	1330
	II	608334	250929	10190	15149	2031	26935	733	7998	918
2005	I	738619	555855	77607	8580	2327	10708	1793	5227	1774
	II	552662	280851	6616	14751	2128	30462	6308	9437	1513
2006	I	780164	887774	73979	7121	3014	11065	4705	4324	3217
	II	464387	283939	3936	11174	927	17121	625	6750	742
2007	I	795486	554886	41934	8309	4011	11943	2952	5244	2979
	II	496187	77724	3700	12149	1042	14498	454	6621	472

In 2006 data from Finland, Russia and Sweden are preliminary.

**Table 2.4.2** Number of fishing vessels in the offshore fishery for salmon by country and area from 1999-2006. Number of fishing days divided in 4 groups, from 1-9 fishing days, from 10-19 fishing days, from 20-39 fishing days and more than 40 fishing days (from year 2001 also from 60 to 80 and > 80 days, total 6 groups). Sub-divisions 22-31 and Sub-division 32.

Year	Area	Country	Effort in days per ship				
			>40	20-39	10-19	1-9	Total
1999	Sub-divisions 22-31	Denmark	5	7	4	4	20
		Estonia	0	0	0	na	na
		Finland	13	13	11	20	57
		Germany	na	na	na	na	na
		Latvia	4	5	6	13	28
		Lithuania	na	na	na	na	na
		Poland	23	23	8	33	87
		Russia	2	1	2	7	12
		Sweden	10	8	9	38	65
		Total	57	57	40	115	269
	Sub-div. 32	Finland	2	3	3	39	47
Sub-divs 22-32	Total	59	60	43	154	316	

Year	Area	Country	Effort in days per ship				
			>40	20-39	10-19	1-9	Total
2000	Sub-divisions 22-31	Denmark	8	9	2	9	28
		Estonia	0	0	0	4	4
		Finland	15	8	14	12	47
		Germany	na	na	na	na	na
		Latvia	3	4	10	14	31
		Lithuania	na	na	na	na	na
		Poland	40	23	12	22	97
		Russia	na	na	na	na	na
		Sweden	11	12	7	29	59
		Total	77	56	45	90	266
	Sub-div. 32	Estonia	0	0	1	0	1
	Finland	3	6	7	20	36	
Sub-divs 22-32	Total	80	62	53	110	305	

Year	Area	Country	Effort in days per ship						
			>80 days	60-80	40-59	20-39	10-19	1-9	Total
2001	Sub-divisions 22-31	Denmark	3	2	4	2	2	9	22
		Estonia	0	0	0	0	0	2	2
		Finland	2	1	5	12	7	10	37
		Germany	na	na	na	na	na	na	na
		Latvia	0	1	0	3	2	24	30
		Lithuania	na	na	na	na	na	na	na
		Poland	7	9	18	11	12	12	69
		Russia	na	na	na	na	na	na	na
		Sweden	4	1	2	11	8	25	51
		Total	16	14	29	39	31	82	211
	Sub-div. 32	Finland	0	0	0	4	3	15	22
Sub-divs 22-32	Total	16	14	29	43	34	97	233	

Table 2.4.2 Continued

Year	Area	Country	Effort in days per ship						Total
			>80 days	60- 80	40-59	20-39	10-19	1-9	
			Number of fishing vessels						
2002	Sub-divisions 22-31	Denmark	3	3	2	3	5	12	28
		Estonia	0	0	0	0	0	2	2
		Finland	na	na	na	na	na	na	0
		Germany	na	na	na	na	na	na	na
		Latvia	0	0	1	3	4	20	28
		Lithuania	na	na	na	na	na	na	0
		Poland	na	na	na	na	na	na	50
		Russia	na	na	na	na	na	na	0
		Sweden	2	0	1	11	11	29	54
		Total		5	3	4	17	20	63
	Sub-div. 32	Finland	0	0	0	5	5	19	29
	Sub-divs 22-32	Total	5	3	4	22	25	82	191

Year	Area	Country	Effort in days per ship						Total	
			>80 days	60- 80	40-59	20-39	10-19	1-9		
			Number of fishing vessels							
2003	Sub-divisions 22-31	Denmark	1	2	8	2	6	11	30	
		Finland	0	3	5	10	16	21	55	
		Germany	na	na	na	na	na	na	na	
		Latvia	0	0	0	1	4	27	32	
		Lithuania	na	na	na	na	na	na	0	
		Poland	1	0	1	21	12	46	81	
		Russia	na	na	na	na	na	na	0	
		Sweden	1	0	1	7	8	24	41	
			Total		3	5	15	41	46	129
		Sub-div. 32	Estonia	0	0	0	0	1	0	1
		Finland	0	0	0	3	2	12	17	
	Sub-divs 22-32	Total	3	5	15	44	49	141	257	

Year	Area	Country	Effort in days per ship						Total	
			>80 days	60- 80	40-59	20-39	10-19	1-9		
			Number of fishing vessels							
2004	Sub-divisions 22-31	Denmark	0	0	1	9	1	16	27	
		Finland	0	1	6	12	10	24	53	
		Germany	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
		Latvia	0	0	0	1	1	15	17	
		Lithuania	0	0	0	0	0	0	0	
		Poland	0	1	10	26	15	44	96	
		Russia	na	na	na	na	na	na	n.a.	
		Sweden	1	2	4	7	8	24	46	
			Total		1	4	21	55	35	123
		Sub-div. 32	Estonia	0	0	0	0	0	1	1
		Finland	0	0	0	0	1	14	15	
	Sub-divs 22-32	Total	1	4	21	55	36	138	255	

Table 2.4.2 Continued

Year	Area	Country	Effort in days per ship						
			>80 days	60- 80	40-59	20-39	10-19	1-9	Total
			Number of fishing vessels						
2005	Sub-divisions 22-31	Denmark	0	0	3	2	5	6	16
		Finland	0	1	6	12	8	18	45
		Germany	na	na	na	na	na	na	na
		Latvia	0	0	0	0	0	12	12
		Lithuania	0	0	0	0	0	0	0
		Poland	1	3	9	25	2	16	56
		Russia	na	na	na	na	na	na	na
		Sweden	5	2	3	8	6	14	38
		Total	6	6	21	47	21	66	167
	Sub-div. 32	Estonia	na	na	na	na	na	na	na
		Finland	0	0	0	0	2	6	8
Sub-divs 22-32	Total	6	6	21	47	23	72	175	

Year	Area	Country	Effort in days per ship						
			>80 days	60- 80	40-59	20-39	10-19	1-9	Total
			Number of fishing vessels						
2006	Sub-divisions 22-31	Denmark	2	1	0	3	0	3	9
		Finland	0	3	5	8	6	5	27
		Germany	na	na	na	na	na	na	na
		Latvia	0	0	0	0	3	6	9
		Lithuania	0	0	0	0	0	0	0
		Poland	na	na	na	na	na	na	na
		Russia	na	na	na	na	na	na	na
		Sweden	4	8	0	8	5	12	37
		Total	6	12	5	19	14	26	82
	Sub-div. 32	Estonia	na	na	na	na	na	na	na
		Finland	0	0	0	1	1	14	16
Sub-divs 22-32	Total	6	12	5	20	15	40	98	

Year	Area	Country	Effort in days per ship						
			>80 days	60- 80	40-59	20-39	10-19	1-9	Total
			Number of fishing vessels						
2007	Sub-divisions 22-31	Denmark	0	1	0	4	2	5	12
		Finland	0	4	4	7	4	9	28
		Germany	na	na	na	na	na	na	na
		Latvia	0	0	0	1	2	1	4
		Lithuania	0	0	0	0	0	0	0
		Poland	na	na	na	na	na	na	na
		Russia	na	na	na	na	na	na	na
		Sweden	4	2	3	2	3	11	25
		Total	4	7	7	14	11	26	69
	Sub-div. 32	Estonia	na	na	na	na	na	na	na
		Finland	0	0	0	0	1	7	8
Sub-divs 22-32	Total	4	7	7	14	12	33	77	

In 2007 data from Finland, Russia and Sweden are preliminary.

**Table 2.5.1** Catch per unit effort (CPUE) in number of salmon caught per 100 nets and per 1,000 hooks by fishing season in the Danish, Estonian, Finnish, Latvian, Russian and Swedish offshore fisheries in the Main Basin, in the Gulf of Bothnia, and in the Gulf of Finland from 1980/1981 (Denmark from 1983/84) to 2007.

Fishing season	Denmark			
	Sub-divisions 22-25		Sub-divisions 26-29	
	Driftnet	Longline	Driftnet	Longline
1983/1984	10.3	26.5	11.9	52.3
1984/1985	11.7	na	18.9	35.9
1985/1986	11.4	na	24.4	30.8
1986/1987	8.8	na	22.1	44.3
1987/1988	12.9	23.6	19.8	35.6
1988/1989	11.9	51.7	12.3	30.7
1989/1990	16.4	69.9	14.2	30.0
1990/1991	13.7	80.8	13.8	49.2
1991/1992	14.7	48.7	7.2	11.5
1992/1993	19.8	49.7	7.5	32.4
1993/1994	33.7	110.1	10.5	45.6
1994/1995	17.6	75.2	8.3	64.1
1995/1996	18.8	101.5	30.3	123.6
1996/1997	13.2	109.9	47.2	135.5
1997/1998	5.6	56.6	41.4	51.7
1998/1999	19.5	138.9	39.6	121.3
1999/2000	19.2	56.5	23.2	41.5
2000/2001	12.8	50.4	26.3	36.9
2002	11.9	69.7	18.3	63.3
2003	27.6	106.3	27.2	*
2004	18.3	236.4	46.7	108.8
2005	9.2	136.4	22.2	67.4
2006	15.3	71.7	22.9	*
2007	7.3	64.7	0.0	0.0

Fishing season	Finland					
	Sub-divisions 22-29		Sub-divisions 30-31		Sub-division 32	
	Driftnet	Longline	Driftnet	Longline	Driftnet	Longline
1980/1981	6.6	27.1	5.3	18.4	na	5.5
1981/1982	8.0	43.5	5.2	28.4	na	12.1
1982/1983	9.2	34.5	6.6	21.9	na	14.3
1983/1984	14.4	46.9	12.4	53.2	na	20.5
1984/1985	12.5	43.7	11.0	34.1	na	13.5
1985/1986	15.9	34.5	10.3	17.9	na	15.7
1986/1987	18.9	63.9	5.3	14.7	na	25.6
1987/1988	8.0	42.0	4.0	9.0	na	17.0
1988/1989	7.0	36.0	4.0	6.0	na	10.0
1989/1990	15.0	57.0	13.0	41.0	na	16.0
1990/1991	16.8	42.4	13.3	50.7	na	21.2
1991/1992	8.5	24.5	9.0	21.1	na	30.8
1992/1993	9.1	16.6	8.0	23.1	na	16.6
1993/1994	5.9	20.0	6.5	12.7	na	23.9
1994/1995	7.9	21.0	4.3	10.2	5.7	26.7
1995/1996	22.1	41.6	10.2	*	5.6	19.7
1996/1997	19.2	56.9	9.7	*	9.7	32.2
1997/1998	14.1	29.3	6.7	*	6.7	24.0
1998/1999	15.7	39.7	5.7	*	5.7	25.7
1999/2000	13.3	29.1	5.7	*	3.1	25.5
2000/2001	20.4	23.0	5.8	*	*	28.2
2002	11.0	43.4	3.3	*	7.8	22.0
2003	11.0	55.4	4.3	*	5.3	8.0
2004	18.0	101.6	5.8	*	4.9	13.6
2005	15.1	58.4	4.1	*	4.4	17.3
2006	7.3	38.0	0.0	*	5.7	12.7
2007	9.7	44.7	0.0	*	5.1	18.4

Table 2.5.1 Continued.

Fishing season	Estonia		Latvia		Russia		Sweden	
	Sub-divisions 28-29 32		Sub-divisions 26 and 28		Sub-division 26		Sub-divisions 22-29	
	Driftnet	Driftnet	Driftnet	Longline	Driftnet	Longline	Driftnet	Longline
1980/1981	na	na	5.0	31.7	na	*	na	na
1981/1982	na	na	5.3	26.0	na	*	na	na
1982/1983	na	na	4.0	15.6	na	*	na	na
1983/1984	na	na	9.4	55.0	na	*	na	na
1984/1985	na	na	6.1	27.0	na	*	na	na
1985/1986	na	na	10.6	13.8	na	*	10.2	41
1986/1987	na	na	13.2	*	na	*	16.8	44.4
1987/1988	na	na	11.5	*	na	*	14.0	42
1988/1989	na	na	8.6	*	na	*	12.6	41.7
1989/1990	na	na	25.7	*	na	*	22.4	88.3
1990/1991	na	na	15.5	*	na	*	21.0	74.3
1991/1992	na	na	9.3	*	na	*	14.4	32
1992/1993	9.1	3.7	11.8	*	na	*	18.2	24.5
1993/1994	11.1	12.4	8.5	*	na	*	25.0	73.7
1994/1995	6.8	7.6	11.6	*	na	*	14.0	*
1995/1996	15.3	6.9	18.5	*	na	*	16.7	114.7
1996/1997	5.6	*	21.1	*	na	*	22.2	63.2
1997/1998	2.8	1.4	15.3	*	na	*	15.6	36.8
1998/1999	*	*	19.9	*	23.9	*	18.1	92.7
1999/2000	*	*	18.7	*	16.5	*	16.9	52.1
2000/2001	na	na	30.3	*	30.4	*	27.7	33.6
2002	na	na	20.9	*	24.7	*	13.9	80.9
2003	na	na	37.4	*	12.7	*	na	na
2004	na	na	20.7	22.0	22.1	*	24.6	120.6
2005	na	na	16.9	*	19.2	*	16.1	87.3
2006	na	na	11.8	*	9.3	*	8.3	35.9
2007	na	na	9.0	*	na	*	11.0	44.7

\* No fishery occurred.

All data from 1980/1981-1993/1994 includes sub-divisions 24-32, while it is more uncertain which years sub-divisions 22-23 are included. The catches in sub-division 22-23 are normally less than one ton. From 1995 data includes sub-divisions 22-32.

Estonian data from sub-div. 28-29 has earlier been given as sub-div. 24-29.

In 2007 data from Finland, Russia and Sweden are preliminary.

Table 2.8.1 Baseline data used in the catch analysis.

Stock	Sampling year	Loci	Country	Propagation	N
1 Tornionjoki, W	2000	17	Finland, Sweden	Wild	117
2 Tornionjoki, H	2006	17	Finland	Hatchery	108
3 Simojoki	2006	17	-"	Wild	110
4 Iijoki	2006	17	-"	Hatchery	105
5 Oulujoki	2006	17	-"	Hatchery	110
6 Kalixälven	2002	17	Sweden	Wild	110
7 Råneälven	2003	17	-"	Wild	35
8 Luleälven	2006	17	-"	Hatchery	120
9 Åbyälven	2003, 2005	17	-"	Wild	77
10 Byskeälven	2003	17	-"	Wild	107
11 Skellefteälven	2006	17	-"	Hatchery	120
12 Vindelälven	2003	17	-"	Wild	150
13 Umeälven	2006	17	-"	Hatchery	118
14 Öreälven	2003	17	-"	Wild	25
15 Lögdeälven	1995, 2003	17	-"	Wild	49
16 Ångermanälven	1995, 2006	17	-"	Hatchery	120
17 Indalsälven	2006	17	-"	Hatchery	120
18 Ljungan	1998, 2003	17	-"	Wild	82
19 Ljusnan	2006	17	-"	Hatchery	120
20 Dalälven	2006	17	-"	Hatchery	119
21 Emån	1999, 2003	17	-"	Wild	109
22 Mörrumsån	2003	17	-"	Wild	136
23 Neva, Fi	2006	17	Russia	Hatchery	102
24 Neva, Rus	1995	8	-"	Hatchery	50
25 Luga	2003	17	-"	Wild	67
26 Narva	1999, 2001	8	Estonia, Russia	Hatchery	65
27 Kunda	1996	8	Estonia	Wild	60
28 Keila	1997	8	-"	Wild	53
29 Pärnu	1997	8	-"	Wild	26
30 Gauja	1998	17	Latvia	Hatchery	70
31 Daugava, Lat	1996	17	-"	Hatchery	68
32 Venta	1996	17	-"	Wild	66
33 Neumunas	2004	17	Lithuania	Hatchery	10
Total					2904

Table 2.8.2. Medians of the stock group proportion estimates (% of catch) in Finnish Atlantic salmon catch samples in 2000-2007 based on data of 8 and partly 17 DNA microsatellite loci, and

	Gulf of Bothnia, wild			G. of Bothnia, hatchery, FIN			G. of Bothnia, hatchery, SWE			Gulf of Finland, wild			Gulf of Finland, hatchery			Western Main B., wild, SWE			Others / Eastern Main Basin			Sample size	Scale reading - wild %
	2.5 %	97.5 %		2.5 %	97.5 %		2.5 %	97.5 %		2.5 %	97.5 %		2.5 %	97.5 %		2.5 %	97.5 %		2.5 %	97.5 %			
<b>1. Åland Sea</b>																							
2000	<b>20</b>	16	24	<b>41</b>	33	48	<b>39</b>	32	46	-	-	-	-	-	-	<b>1</b>	0	2	<b>412</b>	22			
2002	<b>66</b>	59	74	<b>22</b>	15	29	<b>10</b>	6	15	-	-	-	-	-	-	<b>1</b>	0	3	<b>218</b>	58			
2003	<b>69</b>	62	76	<b>23</b>	16	31	<b>7</b>	3	13	-	-	-	-	-	-	<b>0</b>	0	1	<b>209</b>	64			
2004	<b>72</b>	65	78	<b>15</b>	9	21	<b>13</b>	9	18	-	-	-	-	-	-	<b>0</b>	0	1	<b>258</b>	65			
2005	<b>69</b>	63	74	<b>24</b>	19	29	<b>7</b>	4	10	-	-	-	-	-	-	<b>0</b>	0	1	<b>315</b>	64			
2006	<b>75</b>	66	82	<b>18</b>	11	26	<b>6</b>	2	12	-	-	-	-	-	-	<b>1</b>	0	3	<b>133</b>	68			
2007	<b>78</b>	73	83	<b>14</b>	9	19	<b>8</b>	5	11	-	-	-	-	-	-	<b>0</b>	0	1	<b>398</b>	78			
Mean	<b>64</b>	58	70	<b>22</b>	16	29	<b>13</b>	9	18							<b>0</b>	0	2					
<b>2. Bothnian Sea</b>																							
2000	<b>21</b>	16	27	<b>59</b>	51	66	<b>19</b>	14	26	-	-	-	-	-	-	<b>0</b>	0	2	<b>293</b>	23			
2002	<b>46</b>	39	55	<b>45</b>	38	54	<b>6</b>	2	11	-	-	-	-	-	-	<b>2</b>	1	5	<b>179</b>	43			
2003	<b>72</b>	65	78	<b>27</b>	20	33	<b>0</b>	0	3	-	-	-	-	-	-	<b>1</b>	0	3	<b>218</b>	64			
2004	<b>46</b>	37	55	<b>45</b>	34	56	<b>7</b>	1	16	-	-	-	-	-	-	<b>2</b>	0	5	<b>145</b>	42			
2005	<b>34</b>	28	40	<b>53</b>	46	60	<b>11</b>	7	17	-	-	-	-	-	-	<b>1</b>	0	2	<b>269</b>	33			
2006	<b>64</b>	57	70	<b>32</b>	26	39	<b>3</b>	1	5	-	-	-	-	-	-	<b>1</b>	0	3	<b>279</b>	62			
2007	<b>58</b>	51	65	<b>33</b>	26	40	<b>8</b>	5	12	-	-	-	-	-	-	<b>1</b>	0	2	<b>250</b>	46			
Mean	<b>49</b>	42	56	<b>42</b>	35	50	<b>8</b>	4	13							<b>1</b>	0	3					
<b>3. Bothnian Bay</b>																							
2000	<b>16</b>	12	21	<b>71</b>	64	76	<b>13</b>	8	19	-	-	-	-	-	-	<b>0</b>	0	1	<b>300</b>	14			
2002	<b>31</b>	24	39	<b>61</b>	52	69	<b>8</b>	4	14	-	-	-	-	-	-	<b>0</b>	0	1	<b>180</b>	32			
2003	<b>41</b>	34	49	<b>50</b>	42	58	<b>9</b>	5	15	-	-	-	-	-	-	<b>0</b>	0	1	<b>203</b>	37			
2004	<b>43</b>	34	53	<b>53</b>	43	62	<b>4</b>	0	9	-	-	-	-	-	-	<b>0</b>	0	2	<b>135</b>	38			
2005	<b>39</b>	33	47	<b>60</b>	53	66	<b>0</b>	0	2	-	-	-	-	-	-	<b>0</b>	0	1	<b>262</b>	34			
2006 <sup>FS</sup>	<b>57</b>	52	63	<b>29</b>	24	34	<b>14</b>	10	18	-	-	-	-	-	-	<b>0</b>	0	1	<b>481</b>	55			
2007 <sup>FS</sup>	<b>61</b>	57	66	<b>19</b>	15	24	<b>19</b>	16	23	-	-	-	-	-	-	<b>0</b>	0	0	<b>629</b>	60			
Mean	<b>41</b>	35	48	<b>49</b>	42	56	<b>9</b>	6	14							<b>0</b>	0	1					
<b>4. Main Basin</b>																							
2002 <sup>F</sup>	<b>45</b>	33	58	<b>17</b>	6	32	<b>20</b>	9	34	<b>6</b>	0	15	<b>4</b>	1	12	<b>2</b>	0	7	<b>3</b>	0	13	<b>71</b>	52
2003 <sup>F</sup>	<b>49</b>	42	56	<b>15</b>	10	22	<b>22</b>	16	29	<b>0</b>	0	1	<b>4</b>	2	8	<b>4</b>	2	8	<b>3</b>	1	6	<b>215</b>	49
2004 <sup>D</sup>	<b>37</b>	20	59	<b>42</b>	22	59	<b>15</b>	6	26	<b>1</b>	0	4	<b>3</b>	1	7	<b>1</b>	0	3	<b>0</b>	0	1	<b>111</b>	-
2006 <sup>FSDP</sup>	<b>62</b>	57	67	<b>16</b>	12	20	<b>15</b>	11	18	<b>1</b>	0	2	<b>3</b>	2	5	<b>1</b>	0	2	<b>3</b>	1	4	<b>521</b>	-
2007 <sup>FSP</sup>	<b>60</b>	55	65	<b>8</b>	5	11	<b>21</b>	18	25	<b>1</b>	0	3	<b>4,3</b>	2,7	6,4	<b>1</b>	0	2	<b>4</b>	2	6	<b>486</b>	59
Mean	<b>51</b>	41	61	<b>20</b>	11	29	<b>19</b>	12	27	<b>2</b>	0	5	<b>4</b>	2	8	<b>2</b>	1	4	<b>2</b>	1	6		

<sup>F</sup> Finish, <sup>S</sup> Swedish, <sup>D</sup> Danish, <sup>P</sup> Polish catch

the proportions of wild salmon estimated by scale reading from the same samples.



Table 2.8.3 continues. Medians of individual river-stock proportion estimates in Atlantic salmon catches.

	Tornionj. Wild	Tornionj. Hatch.	Simojoki	Iijoki	Oulujoki	Kalixälven	Råneälven	Luleälven	Abyälven	Byskeälven	Skellefteälven	Vindelälven	Umeälven	Öreälven	Lögdeälven	Ångermanälven	Indalsälven	Ljungan	Ljusnan	Dalälven	Emån	Mörrumsån	Neva-FI	Neva-RU	Luga	Narva	Kunda	Keila	Parnu	Gauja	Daugava	Venta	Neumunas	Sample size
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
<b>Main Basin</b>																																		
2002 <sup>F</sup>	43	11	-	3	-	-	-	11	-	-	-	-	2	-	-	-	-	-	-	1	0	-	4	-	5	-	-	-	-	2	-	-	-	71
2003 <sup>F</sup>	16	10	4	5	-	19	-	10	-	5	1	3	1	-	-	5	-	-	4	-	0	4	4	-	-	-	-	-	-	-	-	2	0	215
2004 <sup>D</sup>	11	42	0	-	-	-	-	7	-	-	13	-	-	-	6	4	0	-	2	-	0	3	-	1	-	-	-	-	-	-	-	-	111	
2006 <sup>FSDP</sup>	27	11	2	4	1	22	1	5	-	2	-	4	-	0	1	4	4	3	1	1	-	1	3	0	1	-	-	-	-	2	-	-	0	521
2007 <sup>FSP</sup>	31	4	3	3	0	14	0	9	3	2	1	5	-	-	1	4	6	-	0	-	-	1	4	-	1	-	-	-	2	1	-	1	486	
Mean	26	16	2	3	0	11	0	7	2	2	1	5	1	0	0	4	3	1	1	1	0	1	4	0	2	0	0	0	0	1	0	0	0	
<b>Main Basin 2007</b>																																		
2007 <sup>F</sup>	33	7	-	5	1	12	0	10	4	1	2	4	-	-	1	5	4	-	0	-	-	-	3	-	1	-	-	-	-	-	1	-	1	198
2007 <sup>S</sup>	18	7	3	0	-	24	-	7	-	3	2	7	-	-	1	4	8	-	-	-	-	1	5	-	2	-	-	-	-	3	-	-	144	
2007 <sup>P</sup>	33	3	6	0	-	12	0	7	2	2	0	5	2	-	0	1	5	-	-	-	-	2	6	-	-	-	0	-	-	4	-	-	1	144
Mean	28	6	3	2	0	16	0	8	2	2	1	6	1	0	1	3	6	0	0	0	0	1	4	0	1	0	0	0	0	2	0	0	0	486
<sup>F</sup> Finish, <sup>S</sup> Swedish, <sup>D</sup> Danish, <sup>P</sup> Polish catch																																		
<b>Gulf of Finland, east</b>																																		
2002	-	3	-	-	-	1	-	-	-	-	-	-	-	-	-	-	0	0	-	-	-	-	85	-	-	3	-	-	-	1	1	0	-	150
2003	13	6	3	5	0	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53	-	-	1	-	-	-	-	-	-	0	448	
2004	7	-	-	6	-	26	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	57	-	-	-	-	-	-	0	-	-	-	229	
2005	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76	-	0	-	-	-	-	-	-	-	-	260	
2006	9	-	-	1	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84	-	-	1	-	-	-	0	2	-	-	264	
2007	17	-	-	4	0	9	-	2	-	-	0	0	-	-	-	-	-	-	-	-	-	61	-	-	-	-	-	-	4	-	-	-	200	
Mean	11	2	1	2	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	0	0	1	0	0	0	1	1	0	0	

**Table 2.8.4.** Results from sampling and scale reading of the proportion of wild salmon, years 2007 and total 2002-2007 (W=wild, R=reared).

Sampling date/period	Fishing nation	Subdiv	Area	Gear	Age 1			Age 2			Age>2			Total	%wild	Season
					W	R	Total	W	R	Total	W	R	Total			
2007 01-06	LV	25-28	Sea	Drift net	5	44	49	13	31	44	2	5	7	100	22%	Spring 2007
2007 05-09	Fi	30	Coast	Trap net	71	99	170	148	102	250	9	4	13	433	52%	Summer 2007
2007 05-09	Fi	31	Coast	Trap net	85	123	208	138	126	264	41	16	57	529	50%	Summer 2007
2007 05-09	Fi	32	Coast	Trap net	30	29	59	15	100	115	5	15	20	194	26%	Summer 2007
2007 0129	SW	25	Sea	Long line	0	0	0	18	23	41	24	5	29	70	60%	Winter 2007
2007 05-07	SW	31	Coast	Trap net	11	1	12	26	3	29	20	1	21	62	92%	Spring 2007
2007 05-07	SW	31	Coast	Trap net	6	0	6	25	5	30	24	1	25	61	90%	Spring 2007
2007 06-07	SW	30	Coast	Trap net	7	13	20	20	5	25	21	3	24	69	70%	Summer 2007
2007 06-07	SW	31	Coast	Trap net	74	9	83	28	2	30	27	2	29	142	91%	Summer 2007
2007 06-08	SW	31	Coast	Trap net	12	30	42	35	14	49	30	4	34	125	62%	Summer 2007
2007 1029	SW	26	Sea	Drift net	24	15	39	14	3	17	3		3	59	69%	Autumn 2007
<b>Total</b>																
2002	All	25-29	Sea	All	95	97	192	75	119	194	8	12	20	406	44%	All
2003	All	25-29	Sea	All	206	331	537	286	401	687	107	104	211	1435	42%	All
2004	All	25-29	Sea	All	298	443	741	456	408	864	117	93	210	1815	48%	All
2005	All	25-29	Sea	All	41	16	57	172	79	251	114	49	163	471	69%	All
2006	All	25-29	Sea	All	179	144	323	188	127	315	68	37	105	743	58%	All
2007	All	25-29	Sea	All	5	44	49	31	54	85	26	10	36	170	36%	All
2002	All	30-31	All	All	28	52	80	72	78	150	9	12	21	251	41%	All
2003	All	30-31	All	All	244	422	666	1037	467	1504	221	99	320	2490	62%	All
2004	All	30-31	All	All	127	292	419	591	304	895	141	71	212	1526	56%	All
2005	All	30-31	All	All	150	487	637	1018	828	1846	247	196	443	2926	48%	All
2006	All	30-31	All	All	24	20	44	281	82	363	93	21	114	521	76%	All
2007	All	30-31	All	All	266	275	541	420	257	677	172	31	203	1421	60%	All
2003	All	32	All	All	46	290	336	187	399	586	14	50	64	986	25%	All
2004	All	32	All	All	61	181	242	120	224	344	20	51	71	657	31%	All
2005	All	32	All	All	69	315	384	38	170	208	8	59	67	659	17%	All
2006	All	32	All	All	4	96	100	18	131	149	1	10	11	260	9%	All
2007	All	32	All	All	30	29	59	15	100	115	5	15	20	194	26%	All

**Table 2.10.1.1** Releases of adipose fin clipped salmon in the Baltic Sea and the number of adipose fin clipped salmon registered in Latvian (sub-divisions 26 and 28) offshore catches.

Year	Releases of adipose fin clipped salmon, Sub-divs. 24-31		Latvian offshore catches Sub-divs. 26 and 28	
	Parr	Smolt	Adipose fin clipped salmon in %	Sample N
1984			0.6	1,225
1985			1.0	1,170
1986			1.2	1,488
1987	43,149	69,000	0.6	1,345
1988	200,000	169,000	1.2	1,008
1989	353,000	154,000	1.5	1,046
1990	361,000	401,000	0.8	900
1991	273,000	319,000	1.4	937
1992	653,000	356,000	5.0	1,100
1993	498,000	288,000	7.8	900
1994	1,165,000	272,000	1.6	930
1995	567,470	291,061	2.0	855
1996	903,584	584,828	0.6	1,027
1997	1,626,652	585,630	4.4	1,200
1998	842,230	254,950	4.8	543
1999	1,004,266	625,747	4.4	1100
2000	1,284,100	890,774	7.2	971
2001	610,163	816,295	6.0	774
2002	536,800	733,191	2.5	883
2003		324,002	2.4	573
2004	10,000	648,563	3.2	621
2005	794,500	2,124,628	3.0	546
2006	258,714	1,753,543	2.4	250
2007		103,600	0.0	100

**Table 2.10.1.2** Adipose finclipped salmon released in the Baltic Sea area in 2007.

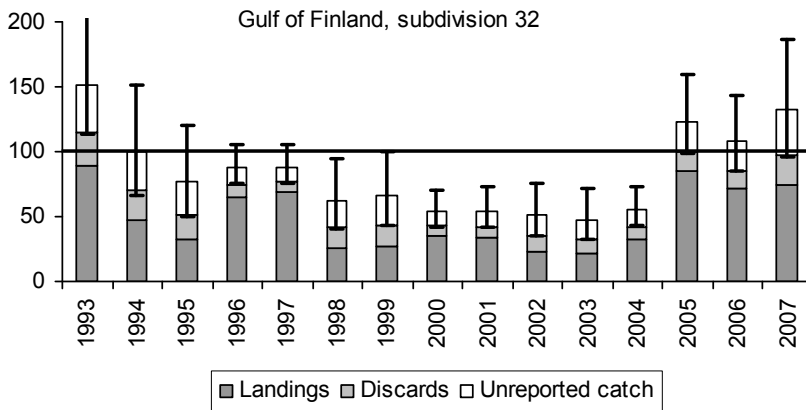
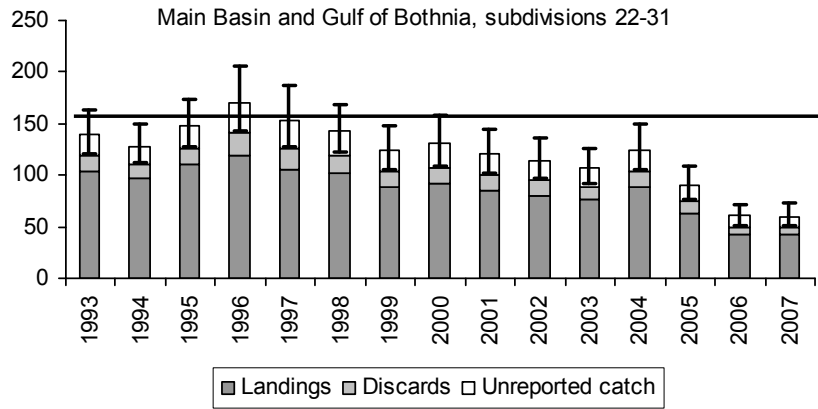
Country	Species	Stock	Age	Number		River	Sub-division	Other tagging
				parr	smolt			
Estonia	salmon	Neva	2		10,300	Loobu	32	700 Carlin
		Neva	1		40,000	Narva	32	1000 Carlin
		Neva	1		10,000	Selja	32	
		Neva	2		10,400	Selja	32	500 Carlin
		Neva	1		31,900	Valgejõgi	32	
		Neva	2		15,500	Valgejõgi	32	700 Carlin
		Neva	2		6,300	Jägala	32	700 Carlin
		Neva	1		31,400	Pirita	32	
		Neva	2		10,400	Pirita	32	700 Carlin
Sweden	salmon	Luleälven	0	40699		Luleälven	31	
		Luleälven	1	50000		Luleälven	31	
		Luleälven	2		557005	Luleälven	31	5000 Carlin
		Skellefteälven	2		122742	Skellefteälven	31	2000 Carlin
		Umeälven	1	6789		Umeälven	31	
		Umeälven	2		100510	Umeälven	31	2000 Carlin
		Skellefteälven	2		6101	Gideälven	30	1000 Carlin
		Ångermanälven	0	34450		Ångermanälven	30	
		Ångermanälven	2		196663	Ångermanälven	30	5000 Carlin
		Indalsälven	1		217627	Indalsälven	30	
		Indalsälven	2		138730	Indalsälven	30	4804 Carlin
		Ljusnan	1	2200		Kvarnån	30	
		Ljusnan	1	4400		Trönöån	30	
		Ljusnan	1	2200		Söderhamnsån	30	
		Ljusnan	0	7486		Ljusnan	30	
		Ljusnan	1		71365	Ljusnan	30	
		Ljusnan	2		50926	Ljusnan	30	1000 Carlin
		Dalälven	1		101927	Dalälven	30	
		Dalälven	2		101399	Dalälven	30	4000 Carlin
		Indalsälven	2		28000	Stockholms Ström	27	
Poland	salmon	Gullspång	2		3000	Motala ström	27	
		Dougava	1		14,080	Łeba	25	
		Dougava	2		2,000	Łeba	25	
		Dougava	1		20,000	Stupia	25	
		Dougava	2		8,128	Stupia	25	
		Dougava	1		72,840	Wieprza	25	4000 Carlin
		Dougava	2		29,470	ParseŃa	25	2000 Carlin
		Dougava	1		9,093	Rega	25	
		Luga	1		108,100	Luga	32	1000 Carlin
Russia	salmon	Luga	2		1,000	Luga	32	500 Carlin
<b>Total salmon</b>				<b>148,224</b>	<b>2,126,906</b>			

**Table 2.10.2.1** Number of Carlin-tagged salmon released into the Baltic Sea in 2007.

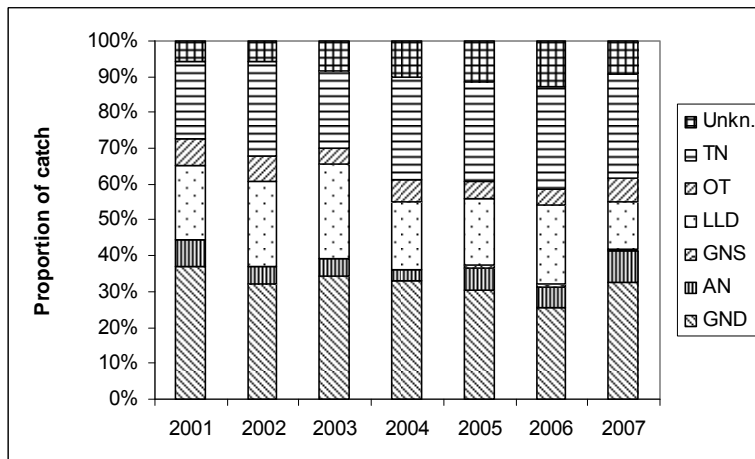
Country	24	25	26	27	28	29	30	31	32	Total
Estonia									4,300	4,300
Finland						3000	2000	24752	6,991	36,743
Sweden				1,263			11,486	4,000		16,749
Latvia					1,000					1,000
Poland	4,000	6,000	7,000							17,000
Lithuania										0
Russia									4,500	4,500
Total	4,000	6,000	7,000	1,263	1,000	3,000	13,486	28,752	15,791	80,292

**Table 2.11.1** Number of tagged hatchery-reared and wild salmon smolts released in assessment units 1, 2 or 3. No Swedish tagging data have been available for recent years hence the large decrease in tagged salmon in areas 2 and 3.

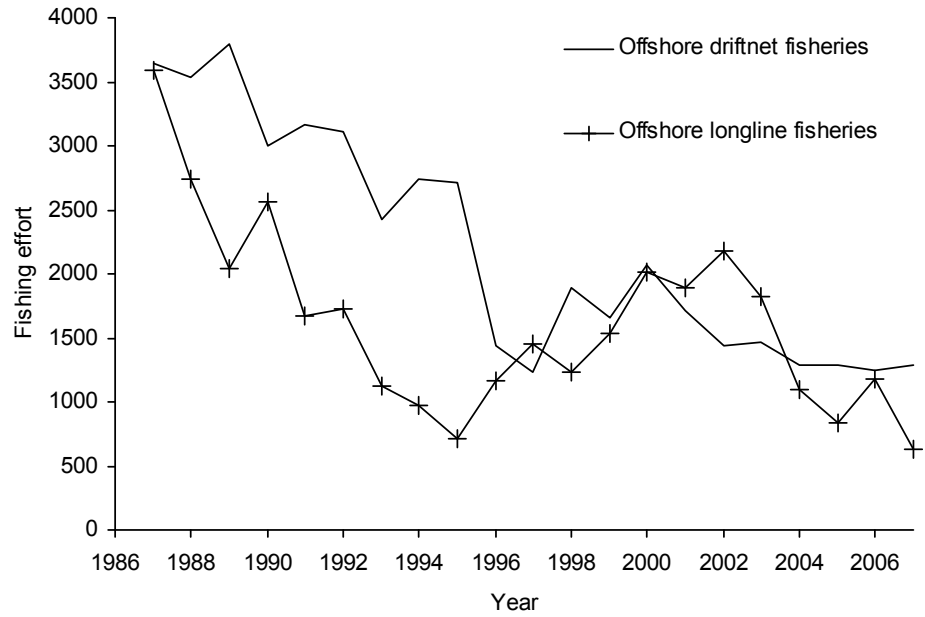
YEAR	Reared salmon stocked in rivers without natural reproduction			Reared salmon stocked in rivers with natural reproduction			Wild salmon Unit 2
	Unit 1	Unit 2	Unit 3	Unit 1	Unit 2	Unit 3	
1987	22809	13258	23000	6900	1987	1994	629
1988	20251	13170	31366	4112	1989	2983	771
1989	11813	13157	36851	4432	2910	0	0
1990	9825	12824	30677	6469	3995	1996	0
1991	7974	13251	36158	6987	3990	1997	1000
1992	8920	12657	33450	4081	1996	1999	574
1993	6862	12656	33825	4969	1999	1991	979
1994	7081	12964	28717	4101	1997	2000	1129
1995	6988	12971	21877	4987	2000	0	0
1996	7967	13480	22429	5991	1000	1000	0
1997	4970	13403	22788	6984	1982	1997	0
1998	6929	13448	22052	2998	1974	994	1364
1999	7908	18920	25362	7927	0	0	2759
2000	6662	17974	23410	8484	0	0	3770
2001	7904	19492	17982	8419	0	0	4534
2002	7458	17989	17998	4986	0	0	3148
2003	7233	15499	20240	6968	0	0	6299
2004	4982	14991	20955	3923	0	0	9604
2005	5970	15000	20982	9994	0	0	6896
2006	7933	13000	19213	10644	0	0	8797
2007		9000	15804				689



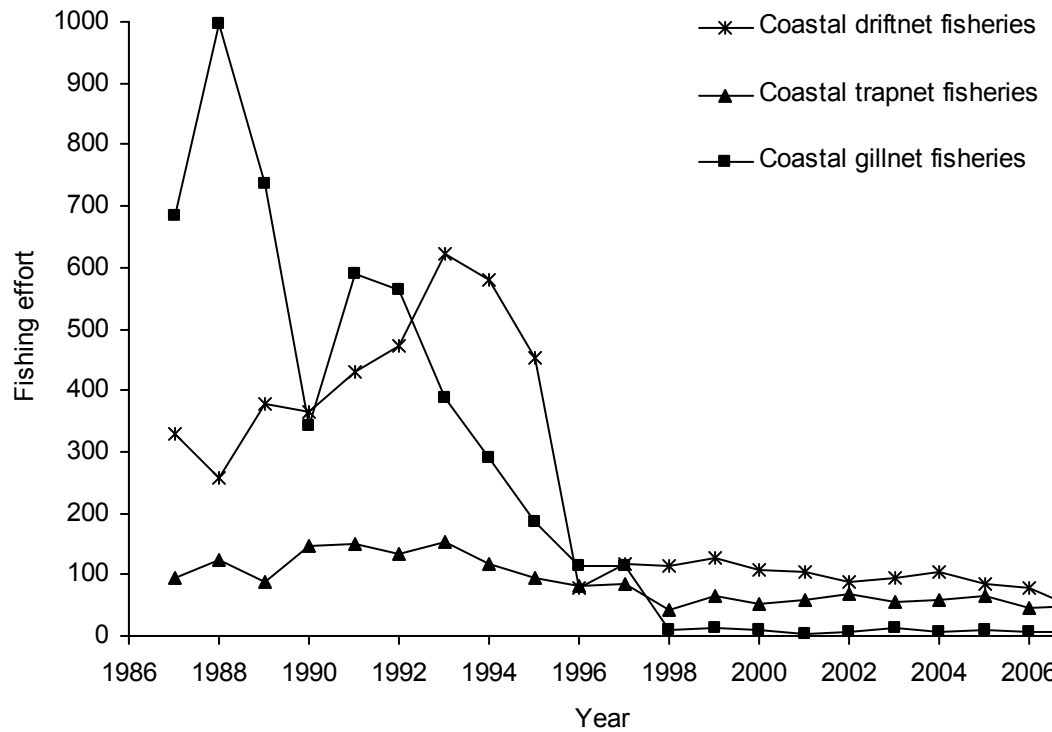
**Figure 2.2.1** Catches of salmon in % of TAC. Estimates of discards and 1 unreported catches are based on estimates presented in Table 5.3.1



**Figure 2.2.2** Proportion of catch of Baltic salmon by weight in different types of tackle 2001-2007. Variables: GND=driftnet, AN=angling, GNS=gillnet, LLD=longline, OT=other, TN=trapnet, Un=unknown

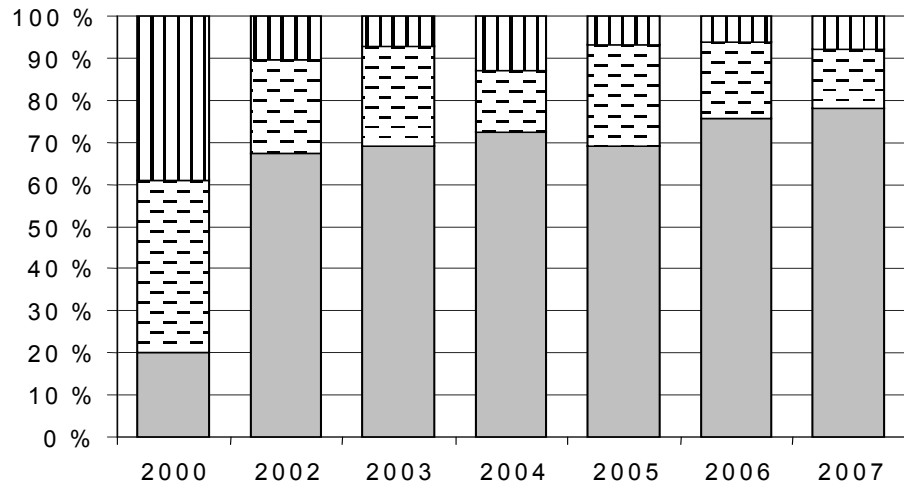


**Figure 2.4.1** Fishing effort in Main Basin offshore fisheries (x 1000 geardays)

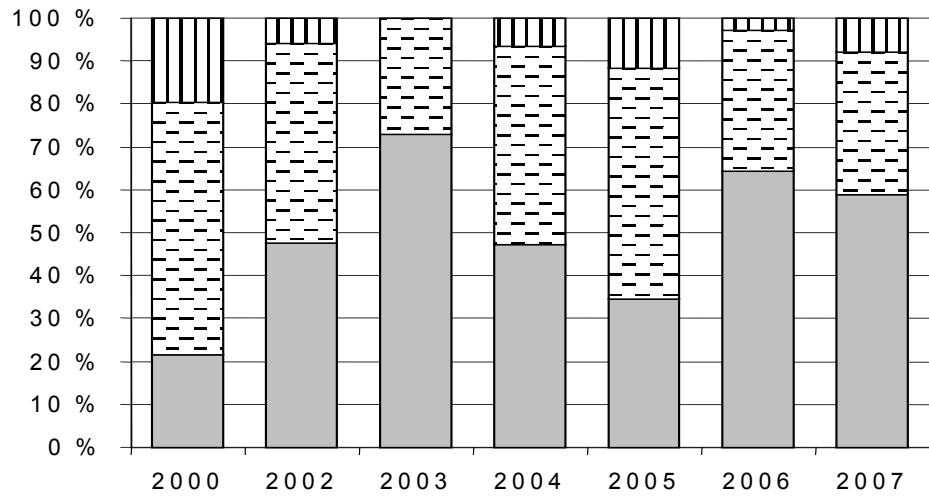


**Figure 2.4.2.** Effort in Main Basin and Gulf of Bothnia coastal fisheries (x 1000 geardays)

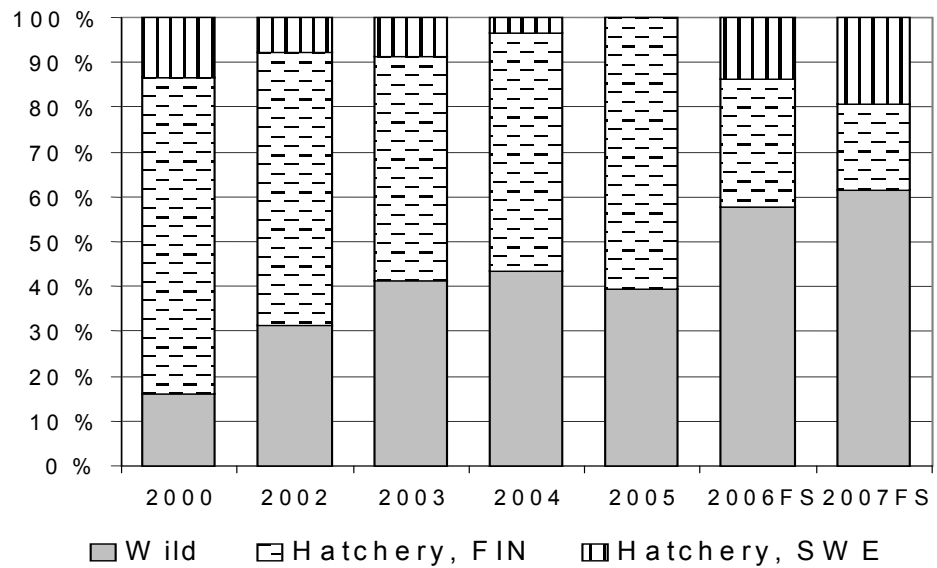
a. Åland Sea catch samples



b. Bothnian Sea catch samples



c. Bothnian Bay catch samples



■ Wild    ▨ Hatchery, FIN    ▤ Hatchery, SW E

## c. Main Basin catch samples

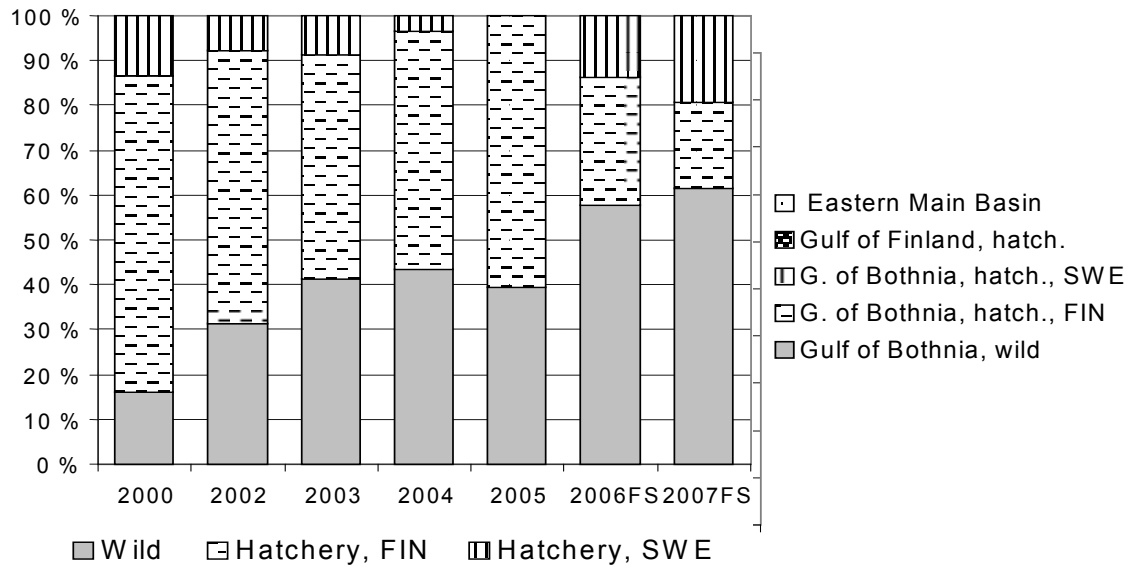


Figure 2.8.1. Stock group proportions estimates in salmon catch samples in the Gulf of Bothnia and Main Basin in 2000-2007 based on DNA microsatellite data.

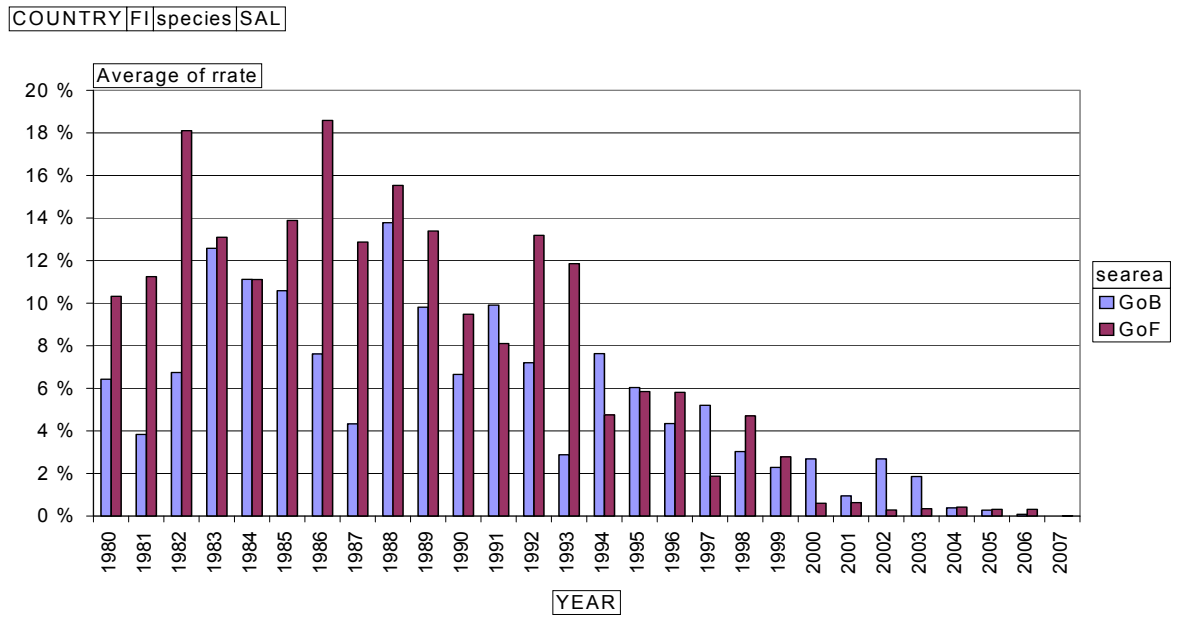


Figure 2.10.2.1 Finish return rates of Carling tagged salmon released in Gulf of Bothnia and Gulf of Finland in 1980-2007

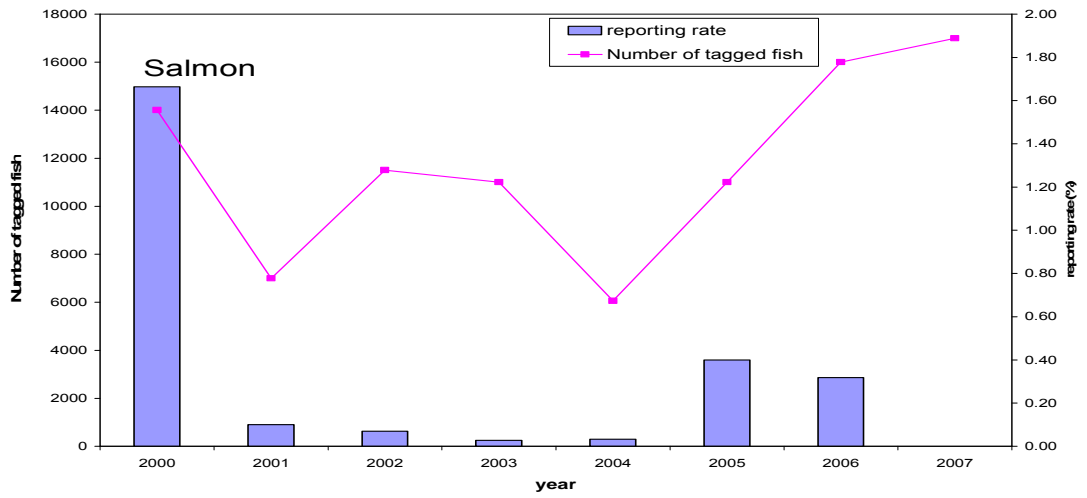


Figure 2.10.2.2 Reporting rates for salmon in 2000-2007 in Poland