

Agenda item 5.5
For decision

Council

CNL(06)10

Unreported Catches – Returns by the Parties

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Summary

Management control and reporting systems

1. The information on management control and reporting systems provided since 2000 is presented in Section 1.

Estimates of unreported catch

2. The Council has agreed that the Parties should be requested to provide, on an annual basis, information in relation to unreported catches, and has welcomed the progress made in transparent presentation of this information. In 2005, between 584-807 tonnes were estimated to be unreported compared to a provisional declared catch of 2,117 tonnes, i.e. the estimate of unreported catch is between 28-38% of the reported catch. The estimated unreported catch by Party (rounded to the nearest tonne) over the seven years for which information is available is as follows:

Year	1999	2000	2001	2002	2003	2004	2005
Canada	133	124	81	84	118	101	101
Denmark (Faroe Islands and Greenland)	10-15	10	10	11	10	11	11
European Union	215	240	169	165	125	116	114
Iceland	2	2	2	2	2	3	3
Norway	320-540	440-760	500-860	410-690	320-600	252-420	285-475
Russian Federation	237-255	249-309	200-252	166-206	99-152	110	70-103
USA	0	0	0	0	0	0	0
Total	917-1,160	1,065-1,445	962-1,374	838-1,158	674-1,007	593-761	584-807
Confirmed catch	2,247	2,903	3,066	2,636	2,450	2,150	2,117*
% of reported catch	41-52%	37-50%	31-45%	32-44%	27-41%	28-35%	28-38%

* Note: 2005 catch data are provisional.

How the figure for unreported catch is derived

3. Information on how the figure for unreported catch is estimated by each Party is provided in Section 3. It is clear that while the unreported catches for some Parties and relevant jurisdictions arise only from legal activities, for others both illegal and legal activities contribute to unreported catches.

Catch and release salmon angling

4. Approximately 139,000 salmon were released following capture in recreational fisheries in 2005. This is a slight reduction compared to the number released in 2004 (144,000). Catch and release angling is not practised in all countries and in some

countries no statistics are available on the extent of its use. The numbers of salmon caught and subsequently released by NASCO Party is as follows:

Year	2000	2001	2002	2003	2004	2005
Canada	62,106	58,961	54,425	51,442	57,005	45,886
Denmark (Faroe Islands and Greenland)	0	0	0	0	0	0
European Union	27,346	33,504	32,984	34,968	55,064	60,145
Iceland	2,918	3,607	5,576	5,357	7,294	9,150
Norway	0	0	0	0	0	0
Russian Federation	12,624	16,410	25,248	33,862	24,679	23,592
USA	0	0	0	0	0	0
Total	104,994	112,482	118,233	125,629	144,042	138,773

Measures to minimise unreported catches

- Ongoing actions to minimise the level of unreported catch continue to be taken. In Canada, seizures, prosecutions and penalties associated with illegal fishing are published in local newspapers and on the government website and those convicted of illegal fishing are frequently asked to make restitution to the local conservation organization. In UK (England and Wales) rod licences were issued by the Post Office in 2005, which resulted in a more up-to-date and accurate database for issuing reminders, so a higher proportion of anglers would have received a reminder. Furthermore, following a surveillance operation, reporting rates in the Solway estuary haaf net fishery are believed to have been significantly improved in 2005. In Norway, improvements to the systems for reporting catches have continued to be made. In Russia, a new management approach was implemented in 2005 which, it is believed, will reduce the level of unreported catches. In the US, educational efforts are continuing with regard to identification of salmon and awareness of the restrictions.

Additional actions

- The Council has previously noted the progress being made in reducing the level of unreported catches and emphasised the need to take stronger measures to minimise the level of such catches which are still around one third of the reported catches. Last year Norway proposed (CNL(05)39) that the Council should consider holding a Special Session or Working Group meeting on the issue of unreported catches since such an exchange might benefit all Parties given that catch statistics are one of the most important management tools and are used in models to estimate pre-fishery abundance. The Council decided that if there was a Special Session on the Decision Structure for management of salmon fisheries there might be an opportunity for a more detailed consideration of approaches used to assess unreported catches, the sources of such catches and the measures being taken to minimise them. The Secretary will continue to request information on unreported catches from the Parties on an annual basis unless the Council wishes to include such reports in the reporting under the implementation plans. The Council may also wish to further consider whether or not to hold a Special Session or a Working Group meeting on unreported catches. At the time of preparation of this paper, information had not been received from some EU Member States (France and Portugal) which have salmon stocks.

Secretary
Edinburgh
9 May, 2006

1. Description of Management Control and Reporting Systems by Country

Party	Year of Return	Description
Canada	2000	Within Quebec, all legally harvested commercial and recreational salmon have to be registered. In the rest of Atlantic Canada, recreational fisheries are estimated by licence stub return systems and surveys. Aboriginal Food Fisheries are either reported by the Native People themselves or estimated by local enforcement staff. This means that all legal fisheries have reporting systems and unreported catches arise mainly from those harvests which are illegal. Unreported catches are generally estimated by local enforcement or scientific staff based on local assessment of illegal activity.
Denmark (in respect of the Faroe Islands and Greenland)		
Faroe Islands	2003	In the Faroe Islands there is currently no reporting system regarding sport fishing for salmon. The Sportfishermen's Association works on estimates of catches for its own purposes. There are plans to introduce a reporting system.
	2005	The recreational rod catch in rivers is limited by a licensing system where fishing licences are sold. The catch is reported to the Faroese Sportfishermen's Association which then informs the Ministry of Fisheries.
Greenland	2000	All commercial catches of salmon must be reported to the Greenland Fishing Licence Control Authority (GFLK) by the fishermen on a daily basis. Catches from the recreational fishery and the fishery for non-residents/tourists must be reported to the GFLK by the fishermen as soon as possible. Only persons licensed for the commercial salmon fishery can sell their catches. The catches from the commercial salmon fishery can only be sold at local markets and local shops, to hotels, schools, hospitals and other public eating places.
European Union		
Denmark	2002	At sea, control is based on registration (logbooks) and landing control. (Denmark has national technical rules but no quota regulations). In rivers, private landowners, in cooperation with angler associations, are responsible for the control of the recreational fisheries.
	2005	The catch statistics in Danish rivers come from local angling clubs on a voluntary basis.
Finland	2000	Recreational fishing catch statistics are well reported (angler response rate was 75%). The total salmon catch is estimated. Local salmon catches (set nets, drift nets, weirs and rod and reel fishing) are requested after the fishing season ends. Fishermen are asked to complete a catch report or answer personally to interviews (out of a total of 800 fishermen, 50-65% report their catch). Reported salmon catches are underestimated by about 20-30%.
Germany	2004	There has been a legal obligation since 1993 for all fishermen to report catches of salmon to the authorities but no management control system has been established.
	2005	<p><u>Brandenburg:</u></p> <ul style="list-style-type: none"> • National restocking project for river Elbe (cooperation with other federal states) • Annual control of smolts (survival rates, growth) • Annual control of returns (electric fishery; telemetry) • Annual reports for the fishery department <p><u>Northrhine-Westfalia:</u> Salmon are protected by law in all countries along the River Rhine. Recently there was much concern about by-catches in the Rhine-Delta (the Netherlands) by professional fishermen and by angling. But no realistic estimate of the importance of these by-catches is yet available.</p>

Party	Year of Return	Description
	2006	<u>Brandenburg</u> : Catch of salmon is forbidden (law of fisheries in Brandenburg): - for natural populations – non-seasonal; - for restocking populations – 01.10. – 31.03. and > 60 cm bodylength. <u>Sachsen-Anhalt</u> : The catch of native salmon is illegal in Sachsen-Anhalt, only restoration salmon stocks may be caught. There are no spawning-rivers for Atlantic salmon in Sachsen-Anhalt. For that reason there are no control and reporting systems.
Ireland	2000	The Department of the Marine and Natural Resources is charged with the enactment and enforcement of fisheries legislation. Authorised officers in seven regional fisheries areas carry out enforcement and fisheries protection. Commercial catch statistics are reported from licensed salmon dealers' registers in all regions except one, where an estimate is made based on sample fishermen's catches. Angling catch returns are not collected systematically and best estimates are made in most regions.
	2002	Until 2000, catch statistics were derived primarily from recorded sales in licensed salmon dealers' registers. An estimate of private sales of legally caught salmon was included in unreported catch estimates. A carcass tagging and logbook system was introduced in 2001. Under this scheme all salmon landed are tagged with the appropriate coloured and coded tag and catch details are recorded in an official logbook. A national database of catch information has been established. Initial analyses indicate a significant increase in the reported catch compared to the previous 5 years due mainly to the inclusion of previously unreported catches and, therefore, a corresponding decrease in the unreported catch.
	2003	The carcass tagging and logbook scheme introduced in 2001 has resulted in an increase in the reported catch in 2002 over the previous five-year period and, therefore, a corresponding decrease in the unreported catch. Up to 2000, the catch statistics were derived from recorded sales by licensed salmon dealers. As a result of the introduction of the carcass tagging and logbook scheme, it is possible to estimate the proportion of the catch not sold through licensed dealers and, therefore, to assess the validity of previous estimates of unreported catch.
	2004	A national database of catch information has been established. The carcass tagging and logbook scheme introduced in 2001 has resulted in an increase in the reported catch for the period 2001-2003 over the previous 5 years and therefore a corresponding decrease in unreported catch. Prior to 2001 catch statistics had been derived primarily from recorded sales in licensed salmon dealers' registers, with estimates of private sales of legally caught salmon included in unreported catches. Preliminary analyses suggest that approximately 30% of salmon caught in 2002 and 2003 were not sold through licensed dealers but were either kept for domestic consumption or sold through retail outlets, hotels, etc. While there is still an element of illegal catch this is thought to be low at present.
	2005	A national database of catch information has been established under the Carcass Tagging and Logbook scheme. Almost 100% of commercial fishing logbooks were returned in 2004. In 2003 (the latest year for which figures are available) 56% of angling logbooks were returned compared to 43% in 2001. This has resulted in an increase in reporting catch from 2001 compared to the previous 5 years and therefore a corresponding decrease in the unreported catch. Some 30% of salmon caught in 2002 and 2003 were not sold through licensed dealers but were kept for domestic consumption or sold through retail outlets, hotels, etc. In 2004, 85.9% of commercial salmon catch is sold through licensed salmon dealers and of other sales, 7.6% is accounted for by domestic consumption and only 6.5% is unaccounted for by the time logbooks are returned. While there is still an element of illegal catch, this is thought to be low at present.
	2006	A national database of catch information has been established under the Carcass Tagging and Logbook scheme. Almost 100% of commercial fishing logbooks and 62% of angling logbooks were returned in 2005. This carcass tagging scheme has resulted in an increase in reported catch from 2001 compared to the previous 5 years and therefore a corresponding decrease in the unreported catch. While there is still an element of illegal catch, this is thought to be low at present (approx. 10%).
Spain	2005	All salmon catches must be reported. Salmon fishing is strongly regulated. For example, in Cantabria and Navarre rod and line fishing only is permitted, all other techniques are prohibited.
	2006	Galicia, Navarra, and Principality of Asturias: All catches must be declared. Cantabria: All rod and line catches are screened, other salmon fisheries (nets, coastal fisheries...) are illegal. Basque Country (Guipuzcoa): Fishing and catches are not allowed under economical penalty.

Party	Year of Return	Description
Sweden	2000	The level of unreported catches is assumed to be between 5 to 25% of the total catch. The level has been estimated based on the official catch figures collected yearly by the National Board of Fisheries through the mandatory log-books and sales notes regarding the licensed professional fishing, and the county administrations regarding all salmon catches in the coastal area and in the rivers. The county administrations issue fishing licences to fishermen, a condition of which is the submission of a yearly report of all catches. Sport fishing organisations and fisheries management areas managing the salmon fishing through the sale of one-day fishing licences for smaller areas in the rivers are also obliged to report all catches of salmon, including specification of individual length, weight, sex and date of the catch. Even the place of the catch and fishing method used are commonly reported. The information is compiled yearly at the respective county administration's fishing unit and submitted to the Board of Fisheries. The information regarding sport fishing with rod and line and professional fishing with fixed gears is estimated to be quite complete but the catch by the public, because of their right to fish with a limited number of nets, is assumed to be the major part of the Swedish unreported catch.
UK (England and Wales)	2000	All net, fixed engine and rod fishing is subject to licence. All licensees are required to submit a mandatory catch return. The proportion of netmen submitting returns is usually at, or very close to, 100%, with active follow-up of non-respondents. A lower proportion of rod licensees respond; a postal reminder system operates. Declared catches are adjusted for under-reporting.
	2002	In England and Wales anglers were issued with a second reminder, in respect of catches in the 2001 season, in an effort to reduce the level of unreported catch. No change for net fisheries or in the methodology applied for assessing illegal catches.
UK (Northern Ireland)	2000	Returns from netmen as a licence condition.
	2002	In Northern Ireland, control of commercial netting and sport angling exploitation in the Foyle, Carlingford and Irish Lights Commission (FCILL) area is in real time based on management targets for salmon. Salmon carcass tagging and logbooks have been introduced for all forms of exploitation. In the Fisheries Conservancy Board (FCB) area a salmon tagging and log book scheme was introduced in 2001 and should provide angling and commercial effort data which has previously been unreported.
UK (Scotland)	2000	Wild resources are policed by the District Salmon Board's bailiff force. Catch return forms are sent to owner/occupiers of the salmon fishery. A reminders system is in place to maximise returns. A return rate of 95% or greater is received annually.
Iceland	2000	Detailed catch statistics for angling. Reliable catch statistic for net fishing in rivers. No legal sea fisheries for salmon.
Norway	2000	The main responsibility for collection and administration of the catch reports lies with the County Governors. The County Governors collect reports at the end of the year from land owners on the rivers. A report from each county is sent to the official bureau "Statistics Norway". Sea-fishermen are registered by the County Governor before the fishing season starts. Catch reports from sea fishing are sent directly from each fisherman to Statistics Norway.
Russian Federation	2000	For all types of fishing a licence is issued by the Fishery Protection authorities. For commercial fishing for salmon, and fishing based on "catch and release", a special seasonal day-book is available in which the daily catch statistics are registered. During "catch and retain" fishing the catch statistics are entered on a licence to further submit to the Fishery Protection authorities. Reporting on commercial fishing is practised on a decade basis and that on licensed recreational fishing - after the termination of the season. When the catch statistics are not reported the fishing licence is cancelled.
USA	2000	There is no legal harvest of Atlantic salmon in the United States with the exception of the fishery on the Merrimack River on reconditioned broodstock. Fishermen on the Merrimack River are required to purchase a separate license and fill out a log book. Commercial fishermen in state and federal waters are required to report catch, including by-catch. This data is entered into a database that can be searched by species, area, gear, etc.

2. Estimate of unreported catch by country, broken down by category and indicating whether the unreported catch is the result of legal or illegal activities

Party	Estimate (tonnes)	Breakdown												
Canada	101	About 50% of the unreported catch occurs in fresh water and 50% in coastal and estuary areas. Estimates are received from all areas and are considered as complete as possible.												
Denmark (in respect of the Faroe Islands and Greenland)														
Faroe Islands	1	For 2005, the unreported catch was 0.95 tonnes. The unreported catch is the result of legal activities - recreational rod catches in rivers. The catch is limited by a licensing system, where fishing licences are sold. Catch is reported to the Faroese Sportfishing Association, which informs the Ministry of Fisheries and Maritime Affairs.												
Greenland	Approx. 10	The estimate was reviewed at this year's WGNAS meeting. The license control office (GFLK) has noted that there have been no reports of illegal fishing for salmon in 2005. A total of 185 licences were issued to professional fishermen in 2005, but according to the catch reports, only 29 of these were utilized. The total utilization of licences amounted to 15.68%. In 2005, licences have not been issued in 2 municipalities (Nanortalik Langilinnuit / Ivittuut) in West Greenland and Tasiilaq in East Greenland. No catch reports were received from the municipalities of Aasiaat, Tasiilaq, Kangaatsiaq and Uummannaq. 477 salmon were reported after the season closed on 31 October and were proportionately allocated into the weeks of known landings in the NAFO Divisions they came from.												
European Union														
Denmark	-	No information.												
Finland	10	Negligible illegal catch.												
Germany	-	<u>Brandenburg</u> : Unknown. 1 salmon caught by an angler in 2004 (illegally). <u>Northrhine-Westfalia</u> : No estimate available for rod catches. <u>Sachsen-Anhalt</u> : Very rare by-catch of salmon in fisheries for other species, mainly in the river Elbe. Estimate of unreported catch (as a result of legal fishery): approximately 1-5 specimens in river Elbe.												
Ireland	43	Approximately 10% of the declared catch. Predominantly illegal catch. Based on direct monitoring of dealers and knowledge of the local fisheries, this is considered by many fishery inspectors to be an overestimate.												
Spain	<1	No assessment of unreported catches but control of fishing is strict and unreported catches are believed to be less than 5% of catches for each autonomous region, i.e. less than 1 tonne in 2005.												
Sweden	1.7	Approximately 10% of catch. Largely the result of legal activities in fisheries with no obligation to report catches (e.g. non-commercial netting) but poaching probably contributes to a minor extent. Lack of well organized collection of catch data in some salmon rivers leads to under-reporting. It is believed that new fishery regulations in recent years have reduced the proportion of the catch that is not reported.												
UK – England and Wales	29	Estimates are not made for separate categories of unreported catch. The total is calculated using the percentages in Section 3.												
UK – Northern Ireland	2.3	Mainly legal actions. The estimate is based on a statistically adequate return of angling catches.												
UK – Scotland	28													
Iceland	3													
Norway	380 (uncertainty ± 95 tonnes)	<table border="0"> <tr> <td>Illegal catch in the sea:</td> <td>102 tonnes</td> <td>Legal catch in sea by angling:</td> <td>80 tonnes</td> </tr> <tr> <td>By-catch in commercial sea fishing:</td> <td>15 tonnes</td> <td>Illegal catch in rivers:</td> <td>11 tonnes</td> </tr> <tr> <td>Legal catch in sea by bag-net and bend net:</td> <td>92 tonnes</td> <td>Legal catch in rivers, mainly by angling:</td> <td>80 tonnes</td> </tr> </table>	Illegal catch in the sea:	102 tonnes	Legal catch in sea by angling:	80 tonnes	By-catch in commercial sea fishing:	15 tonnes	Illegal catch in rivers:	11 tonnes	Legal catch in sea by bag-net and bend net:	92 tonnes	Legal catch in rivers, mainly by angling:	80 tonnes
Illegal catch in the sea:	102 tonnes	Legal catch in sea by angling:	80 tonnes											
By-catch in commercial sea fishing:	15 tonnes	Illegal catch in rivers:	11 tonnes											
Legal catch in sea by bag-net and bend net:	92 tonnes	Legal catch in rivers, mainly by angling:	80 tonnes											

Russian Federation	70-103	Legal coastal fishery: 8-11 tonnes Illegal coastal fishery: 3-4 tonnes	Legal in-river fishery: 9-13 tonnes Illegal in-river fishery: 50-75 tonnes
USA	0		
TOTAL	584-807		

3. *Explanation of how the figure for unreported catch is arrived at*

Party	Year of Return	Explanation
Canada	2000	Illegal fishing: Unreported catch is attributed principally to illegal fishing.
	2001	Illegal fishing: Estimates supplied by enforcement staff.
	2003	Illegal fishing: Unreported catches are estimated by enforcement, management and biological staff.
	2005	Illegal fishing: Almost all unreported catch in Canada arises from illegal fishing; estimates are usually provided by enforcement staff, in some cases based on a proportion of the reported catch (the proportion being determined from previous studies) or are current or previous years' estimates based on knowledge of illegal activities in specific fishing areas.
	2006	Absence of a requirement for catch statistics to be collected: Based on historical information on consumption and size of communities fishing the resource. Illegal fishing; Based on estimates from Conservation and Protection staff or regional biologists familiar with the activities occurring in their respective areas.
Denmark (FI&G)		
Faroe Islands	2000	Absence of a requirement for catch statistics to be collected: There is no unreported catch.
	2003	Local sale or consumption: The unreported catch is used for local consumption.
	2005	Unreported catches result from legal activities, recreational rod catches in rivers. They arise from an absence of a requirement for catch statistics to be collected and from local consumption.
Greenland	2000	Absence of a requirement for catch statistics to be collected: All catches are landed to local markets, sold privately or kept for home consumption. Due to the scattered nature of the fishery, recordings of the landings are considered incomplete. Suppression of information thought to be unfavourable: Not available. Local sale or consumption: It has been established that salmon have been sold by persons with no licence in the towns of Nuuk, Qaqortoq, Maniitsoq and Narsaq. Catches for home consumption seem to be heavily under-reported. Innocent inaccuracy in making returns: Not available. Illegal fishing: Not available.
	2001	Absence of a requirement for catch statistics to be collected: All catches are landed to local markets, sold privately or kept for home consumption. Due to the scattered nature of the fishery, recordings of the landings are considered incomplete. Suppression of information thought to be unfavourable: Not available. Local sale or consumption: Catches for home consumption seem to be heavily underreported. The catches from the commercial salmon fishery in 2000 were restricted to subsistence use only, and one private company was given permission to purchase salmon from the fishermen for distribution in Greenland. Almost all the catch reports originated from landings to this company in 2000, and only a few of the catches from the commercial salmon fishery are reported to have been sold at local markets, local shops, to hotels, schools, hospitals or other public eating places in comparison with previous years. The short season is probably the reason for this, and is not necessarily an indicator of unreported catches. Innocent inaccuracy in making returns: Not available. Illegal fishing: Official gamekeepers and inspectors from the GFLK have reported incidents of illegal gill net fishing after the closure of the salmon fishery. The inspection of this fishery had high priority after the closure, and due to the very short season (5 days) it is estimated that there were more illegal fishing incidents in 2000 than previous years.

Party	Year of Return	Explanation
	2003	<p>Absence of a requirement for catch statistics to be collected: All catches must be reported to Greenland Fisheries Licence Control (GFLK).</p> <p>Suppression of information thought to be unfavourable: Not available.</p> <p>Local sale or consumption: Catches are landed to local markets, sold privately or kept for home consumption. Due to the scattered nature of the fishery, recordings of landings are considered incomplete.</p> <p>Innocent inaccuracy in making returns: Not available.</p> <p>Illegal fishing: The unreported catches are mostly legal.</p>
	2005	<p>Absence of a requirement for catch statistics to be collected. All catches must be reported to the Greenland Fishing Licence Control. Due to the scattered nature of the fishery, effective control by the authorities is impossible within any reasonable effort. Presently there is no reliable method of estimating the magnitude of the unreported catch.</p>
European Union		
Finland	2000	<p>Absence of a requirement for catch statistics to be collected: The reporting is voluntary and fishermen underestimate their catch.</p> <p>Innocent inaccuracy in making returns: 50-70% of fishermen report their catch.</p> <p>Illegal fishing: Some illegal fishing with drift nets late in season. Illegal gill net fishing in small tributaries.</p>
	2003	<p>Absence of a requirement for catch statistics to be collected: Licensed fisheries without requirement to report catch. Extrapolation from reported catch used to estimate total catch. An additional margin has been included in the estimate of unreported catch of 15 tonnes.</p> <p>Illegal fishing Thought to be small but difficult to evaluate. Only a guess-estimate.</p>
	2004	<p>In Finland there are licensed fisheries which are not required to report their catch, but the total catch is estimated by extrapolation from the reported catch. There is negligible illegal catch but suppression of information thought to be unfavourable might also lead to unreported catches.</p>
	2005	<p>Absence of a requirement for catch statistics to be collected: 50% of total, a guess-estimate.</p> <p>Suppression of information thought to be unfavourable: 50% of total, a guess-estimate.</p>
Germany	2005	<p><u>Brandenburg:</u> Absence of a requirement for catch statistics to be collected: Insufficient control or enforcement of law and order. Suppression of information thought to be unfavourable: Yes. Local sale or consumption: Yes, but illegal. Innocent inaccuracy in making returns: Unknown. Illegal Fishing: Yes.</p> <p><u>Northrhine-Westfalia</u> No estimate can be given though catch of salmon would be illegal due to the protected status of Atlantic salmon.</p>
	2006	<p><u>Brandenburg</u> Suppression of information thought to be unfavourable: Cannot be excluded. Innocent inaccuracy in making returns: Unknown. Illegal fishing: No Information, but it is possible by anglers or fishermen (gill-net, stow-net, eel-shokker) in the Elbe.</p> <p><u>Sachsen-Anhalt</u> Absence of a requirement for catch statistics to be collected: Occasional information from fishers, anglers and angler associations. Occasional information in newspapers.</p>

Party	Year of Return	Explanation
Ireland	2000	<p>Absence of a requirement for catch statistics to be collected: No.</p> <p>Suppression of information thought to be unfavourable: No.</p> <p>Local sale or consumption: An unknown proportion of the unreported catch.</p> <p>Innocent inaccuracy in making returns: No.</p> <p>Illegal fishing: Comprises most of the unreported catch.</p>
	2001	<p>Absence of a requirement for catch statistics to be collected: Not applicable. Returns for all methods are required by law.</p> <p>Suppression of information thought to be unfavourable: May be some element of this in some areas.</p> <p>Local sale or consumption: Most of the unreported catch comes from this category.</p> <p>Innocent inaccuracy in making returns: Not a large part of the estimate.</p> <p>Illegal fishing: Some of the input derives from this category.</p>
	2002	<p>Absence of a requirement for catch statistics to be collected: All catches must be declared in logbooks.</p> <p>Suppression of information thought to be unfavourable: Unlikely given the presumption of buy-outs, quotas or set-asides in recent years.</p> <p>Local sale or consumption: It is obligatory to provide details in logbooks of all disposal of salmon landed in Ireland.</p> <p>Innocent inaccuracy in making returns: A small element of this may occur given that the carcass tagging/logbook scheme was only introduced in 2001.</p> <p>Illegal fishing: Thought to represent most of the unreported catch but still difficult to assess accurately.</p>
	2003	<p>Absence of a requirement for catch statistics to be collected: Not applicable – all catches must be declared in logbooks.</p> <p>Suppression of information thought to be unfavourable: This is unlikely given the presumption of buyouts, quotas or set-aside in recent years.</p> <p>Local sale or consumption: It is obligatory to provide details of all disposals of salmon landed in Ireland.</p> <p>Innocent inaccuracy in making returns: This may occur but will reduce as familiarity with the carcass tagging logbook scheme increases.</p> <p>Illegal fishing: Difficult to assess accurately, based on accounts from local sources (fishery inspectors, fishermen). Thought to represent most of the unreported catch and is believed to be at a low level presently.</p>
	2004	<p>Local sale or consumption was thought to have been a source of unreported catches in the past but since 2001, with the introduction of logbooks, it is obligatory to provide details of all disposals of salmon landed in Ireland.</p>
	2005	<p>Absence of a requirement for catch statistics to be collected: Not applicable – all catches must be declared in logbooks by both commercial fishermen and recreational anglers.</p> <p>Suppression of information thought to be unfavourable: This is unlikely in recent years given the anticipation, on the part of some commercial fishermen at least, of the possible introduction in the future of non-transferable quotas or the prospects for the introduction of buyouts, or set-aside schemes.</p> <p>Local sale or consumption: This may have been true in the past but it is obligatory since 2001 to furnish details in the logbook of all disposal of salmon landed in Ireland.</p> <p>Innocent inaccuracy in making returns: This may occur but would not be significant and will reduce as familiarity with the scheme increases.</p> <p>Illegal fishing: This is thought to represent most of the unreported catch which is believed to be at a low level presently (reports from local inspectors).</p>
Spain	2005	<p>Illegal fishing: In Cantabria illegal fishing is estimated using information reported by foresters and bailiffs.</p>

Party	Year of Return	Explanation
Sweden	2000	<p>Absence of a requirement for catch statistics to be collected: No.</p> <p>Suppression of information thought to be unfavourable: To some limited degree because of minor catches which are believed not to be reported for tax reasons.</p> <p>Local sale or consumption: Less than 30% of the total unreported catches.</p> <p>Innocent inaccuracy in making returns: Approximately 25% of the unreported catches are caught by non-professional fishermen with no legal obligation to report their catches because they fish within their own waters.</p> <p>Illegal fishing: Probably to some extent but at an insignificant level compared with the total level of unreported catches.</p>
	2001	<p>Absence of a requirement for catch statistics to be collected: A large part of the unreported catch.</p> <p>Suppression of information thought to be unfavourable: To some limited degree because of minor catches which are believed not to be reported for tax reasons.</p> <p>Local sale or consumption: Less than 30% of the total unreported catches.</p> <p>Innocent inaccuracy in making returns: Underestimation of catch is probably not a common source of unreported catch.</p> <p>Illegal fishing: This occurs but to a lesser extent than some other categories of unreported catch.</p>
	2003	<p>Absence of a requirement for catch statistics to be collected: A large proportion of the unreported catch.</p> <p>Suppression of information thought to be unfavourable: To some limited degree because of minor catches which are believed to be unreported for tax reasons.</p> <p>Local sale or consumption: Less than 30% of the total unreported catch.</p> <p>Innocent inaccuracy in making returns: Under-estimation of catch is not a common source of unreported catches. Catches are as likely to be over-estimated.</p> <p>Illegal fishing: Important factor in a few rivers and river mouths where illegal fishing may occur without proper control of the fishery.</p>
	2005	<p>Absence of a requirement for catch statistics to be collected: A major factor behind unreported catch.</p> <p>Suppression of information thought to be unfavourable: Unlikely to be important.</p> <p>Local sale or consumption: Less than 30% of total unreported catches.</p> <p>Innocent inaccuracy in making returns: Underestimation of catch is not a common source of unreported catches. Catches are as likely to be overestimated.</p> <p>Illegal fishing: Important factor in a few rivers and river mouths where illegal fishing may occur without proper control of the fishing.</p>
UK (England and Wales)	2000	<p>Absence of a requirement for catch statistics to be collected: Not applicable.</p> <p>Suppression of information thought to be unfavourable: No separate estimate.</p> <p>Local sale or consumption: No separate estimate.</p> <p>Innocent inaccuracy in making returns: Rod fisheries - 10%: The Environment Agency has estimated that declared salmon rod catches in England and Wales should be increased by 10% to allow for under-reporting of the legal rod catch. This has been based on a study of catch returns made following reminders. Exceptions to this apply for a number of rivers for which the fishery owners' returns are regarded as more accurate. Net fisheries - 8%: For net fisheries in England and Wales, the rate of reporting is generally considered to be high in most Regions and this has been supported by the findings of two studies. On the basis of these and opinions on the level of under-reporting in regional net fisheries, collected from Environment Agency fisheries personnel, a figure of 8% has been used for estimating the level of under-reporting of the national net catch. It has been suggested that over-reporting of catches may be occurring in some fisheries, and the north-east coast fishery in particular, in response to continuing rumours about potential future buy-outs (and the perception that compensation will be based on declared catches).</p> <p>Illegal fishing: All methods - 12%: Recent estimates of illegal catches, expressed as a percentage of the declared catch, have ranged from 5% to 18% for different Regions. A figure of 12% has been used to estimate the total illegal catch.</p>

Party	Year of Return	Explanation
	2001	<p>Absence of a requirement for catch statistics to be collected: Not applicable.</p> <p>Suppression of information thought to be unfavourable: No separate estimate.</p> <p>Local sale or consumption: No separate estimate.</p> <p>Innocent inaccuracy in making returns: Rod fisheries – 10% of declared catch based on a study of catch returns made following reminders. Net fisheries – 8% of declared catch (with the exception of the North-East coast fishery for which no correction was applied in 2000).</p> <p>Illegal fishing: All methods – 12% of total declared catch.</p>
	2003	<p>Absence of a requirement for catch statistics to be collected: Not applicable.</p> <p>Suppression of information thought to be unfavourable: 6% of declared net catch.</p> <p>Local sale or consumption: No separate estimate.</p> <p>Innocent inaccuracy in making returns: Figure of 10% of declared rod catch; may be reviewed in the light of issuing second reminders in 2001 and 2002.</p> <p>Illegal fishing: 12% of total declared catch.</p>
	2005	<p>Absence of a requirement for catch statistics to be collected: Not applicable.</p> <p>Suppression of information thought to be unfavourable: No separate estimate – included in the overall total.</p> <p>Local sale or consumption: No separate estimate – included in the overall total.</p> <p>Innocent inaccuracy in making returns: Rod fisheries 10% of declared catch (may be reviewed in future in light of results from the issue of a second reminder to anglers in the period 2001 to 2004). Net fisheries 8% of declared catch.</p> <p>Illegal fishing: All methods – 12% of total declared catch.</p>
	2006	<p>Absence of a requirement for catch statistics to be collected: Not applicable.</p> <p>Suppression of information thought to be unfavourable: No separate estimate – included in the overall total.</p> <p>Local sale or consumption: No separate estimate – included in the overall total.</p> <p>Innocent inaccuracy in making returns: Rod fisheries 10% of declared catch applied for most fisheries (not used for a small number of rivers where catches are derived from fishery owner's returns). Correction factor may be reviewed in future in light of results from the issue of a second reminder to anglers in the period 2001 to 2005. Net fisheries – 8% of declared catch.</p> <p>Illegal fishing: All methods – 12% of total declared catch.</p>
UK (Northern Ireland)	2000	<p>Absence of a requirement for catch statistics to be collected: Not applicable.</p> <p>Suppression of information thought to be unfavourable: No separate estimate.</p> <p>Local sale or consumption: No separate estimate.</p> <p>Innocent inaccuracy in making returns: No separate estimate.</p> <p>Illegal fishing: No separate estimate.</p>
	2001	<p>Absence of a requirement for catch statistics to be collected: Unreported catch is estimated from intelligence reports of fishery officers on the ground and catch figures given to scientists by individual netmen on a confidential basis.</p> <p>Suppression of information thought to be unfavourable: No separate estimate.</p> <p>Local sale or consumption: No separate estimate.</p> <p>Innocent inaccuracy in making returns: No separate estimate.</p> <p>Illegal fishing: No separate estimate.</p>
	2005	<p>Innocent inaccuracy in making returns: Yes.</p>

Party	Year of Return	Explanation
UK (Scotland)	2000	<p>Absence of a requirement for catch statistics to be collected: Not applicable.</p> <p>Suppression of information thought to be unfavourable: A separate estimate is made from intelligence obtained from a number of sources.</p> <p>Local sale or consumption: A separate estimate is made from intelligence obtained from a number of sources.</p> <p>Innocent inaccuracy in making returns: No separate estimate.</p> <p>Illegal fishing: A separate estimate is made from intelligence obtained from a number of sources.</p>
	2005	<p>Absence of a requirement for catch statistics to be collected: Not applicable.</p> <p>Suppression of information thought to be unfavourable: Guess-estimate.</p> <p>Local sale or consumption: Guess-estimate.</p> <p>Innocent inaccuracy in making returns: Guess-estimate.</p> <p>Illegal fishing: Guess-estimate.</p>
Iceland	2000	<p>Absence of a requirement for catch statistics to be collected: No.</p> <p>Suppression of information thought to be unfavourable: Yes.</p> <p>Local sale or consumption: Yes.</p> <p>Innocent inaccuracy in making returns: No.</p> <p>Illegal fishing: Yes.</p>
	2001	<p>Absence of a requirement for catch statistics to be collected: Catch statistics are required by law.</p> <p>Suppression of information thought to be unfavourable: Information on catches in coastal and marine salmon fisheries which are prohibited tends to be suppressed.</p> <p>Local sale or consumption: Some local consumption and limited sale.</p> <p>Innocent inaccuracy in making returns: Not a source of unreported catch.</p> <p>Illegal fishing: Some coastal fishing with illegal mesh-sizes. By-catch in marine fisheries for haddock, etc.</p>
Norway	2000	<p>Absence of a requirement for catch statistics to be collected: See document “Description of methods currently used for estimating unreported catches in Norway” in Annex 1.</p> <p>Suppression of information thought to be unfavourable: See document “Description of methods currently used for estimating unreported catches in Norway” in Annex 1.</p> <p>Local sale or consumption: This is not believed to be a source of unreported catch in Norway.</p> <p>Innocent inaccuracy in making returns: See document “Description of methods currently used for estimating unreported catches in Norway” in Annex 1.</p> <p>Illegal fishing: See document “Description of methods currently used for estimating unreported catches in Norway” in Annex 1.</p>
Russian Federation	2000	<p>Absence of a requirement for catch statistics to be collected: There is a requirement for catch statistics to be collected from all salmon fisheries.</p> <p>Suppression of information thought to be unfavourable: To cut taxes the catch statistics are reduced by salmon fishermen fishing in the coastal zone. To estimate the size of unreported catch by the methods suggested is impossible. According to the estimate from experts, this figure annually constitutes 25-40 t.</p> <p>Local sale or consumption: This is not believed to be a source of unreported catch.</p> <p>Innocent inaccuracy in making returns: This is not believed to be a source of unreported catch.</p> <p>Illegal fishing: According to expert opinion, illegal fishing annually makes up from 50 to 100% of the commercial catch. Calculations based on the assessment of spawners (parent stock) and fry (offspring) indicate that in 1997 illegal fishing on the Tuloma river constituted about 50% of the fish released for spawning.</p>

Party	Year of Return	Explanation
	2006	<p>Absence of a requirement for catch statistics to be collected: Not applicable. There is a requirement for catch statistics to be collected from all salmon fisheries.</p> <p>Suppression of information thought to be unfavourable: A guess estimate for recreational catch-and-retain rod fishery. A guess estimate for catches taken in coastal fisheries, which are not always reported correctly for tax reasons. A separate estimate for commercial in-river fishery.</p> <p>Local sale or consumption: Catches are sold privately or kept for home consumption. No estimate available.</p> <p>Innocent inaccuracy in making returns: It's not a common source of unreported catches.</p> <p>Illegal fishing: Important factor in some areas. A guess estimate for in-river and coastal fisheries.</p>
USA	2000	<p>Absence of a requirement for catch statistics to be collected: Commercial fishermen are required to report catches, including by-catch. No Atlantic salmon were reported in records submitted in 1999.</p>
	2003	<p>Absence of a requirement for catch statistics to be collected: As a condition of having a federal fishing permit, reporting of bycatch is required. There were no reports of Atlantic salmon in the mandatory logbooks completed and returned by fishermen. In addition, observers are placed on some fishing vessels to provide a third-party estimate of bycatch. No observers documented a bycatch of Atlantic salmon in any fishery in 2002.</p> <p>Suppression of information thought to be unfavourable: There is no evidence that this is occurring. In the past, there have been reports made of Atlantic salmon bycatch.</p> <p>Local sale or consumption: There is no evidence that this is occurring.</p> <p>Innocent inaccuracy in making returns: Fisheries observers are trained in species identification, which should reduce the potential for misidentification.</p> <p>Illegal fishing: On occasion, there are reports of potential recreational poaching in the rivers. When such reports are made, law enforcement personnel increase their presence on the river. There were no documented poaching activities in 2002.</p>
	2005	<p>Absence of a requirement for catch statistics to be collected: As a condition of having a federal fishing permit, reporting by-catch is mandatory. There were no reports of Atlantic salmon in the mandatory logbooks completed and returned by fishermen; however, one dealer reported Atlantic salmon by-catch of 25lbs. In addition, observers are placed on some fishing vessels to provide a third-party estimate of by-catch. No observers documented the by-catch of Atlantic salmon in any fishery in 2004.</p> <p>Suppression of information thought to be unfavourable: There is no evidence that this is occurring. In the past, there have been reports made of Atlantic salmon by-catch by fisherman.</p> <p>Local sale or consumption: The Atlantic salmon bycatch referred to above was valued at \$125.00. There is no evidence, however, that Atlantic salmon are being illegally targeted and sold for local consumption.</p> <p>Innocent inaccuracy in making returns: Fisheries observers are trained in species identification, which should reduce the potential for misidentification.</p> <p>Illegal fishing: There have been reports of potential poaching in the rivers in Maine; however, it is infrequent and in some cases it could not be confirmed by law enforcement and therefore never prosecuted. When such reports are made law enforcement personnel increase their presence on the river. In 2004, NOAA Fisheries and the USFWS developed a cooperative agreement with the Maine Atlantic Salmon Commission (ASC) to increase enforcement on rivers within the GOM DPS. Under this agreement, the ASC was awarded a \$10,000 grant from NOAA Fisheries to implement a more effective and ambitious enforcement program. The new enforcement plan includes: increased patrols by the Maine Warden Service on rivers within the GOM DPS that have listed salmon populations; increased coverage by the Warden Service during critical time periods such as during stocking activities, adult out-migration, and when salmon are pooled up in cool water; and installation of cameras in key areas to document activity when Wardens are not in those areas. A USFWS enforcement agent will also be working closely with the Warden Service to implement the new enforcement program.</p>

Party	Year of Return	Explanation
	2006	<p><i>Absence of a requirement for catch statistics to be collected:</i> As a condition of having a federal fishing permit, reporting bycatch is mandatory. There were no reports of Atlantic salmon in the mandatory logbooks completed and returned by fisherman. In addition, observers are placed on some fishing vessels to provide a third-party estimate of bycatch. No observers documented the bycatch of Atlantic salmon in any fishery in 2005.</p> <p><i>Suppression of information thought to be unfavourable:</i> There is no evidence that this is occurring. In the past, there have been reports made of Atlantic salmon bycatch by fisherman.</p> <p><i>Local sale or consumption:</i> There is no evidence that Atlantic salmon are being illegally targeted and sold for local consumption.</p> <p><i>Innocent inaccuracy in making returns:</i> Fisheries observers are trained in species identification, which should reduce the potential for misidentification.</p> <p><i>Illegal fishing:</i> There have been reports of potential poaching in the rivers in Maine; however, it is infrequent and in some cases it could not be confirmed by law enforcement and therefore never prosecuted. When such reports are made law enforcement personnel increase their presence on the river.</p>

4. *The extent of catch and release fishing*

Party	Estimated Number Released	Comment
Canada	45,886	The released fish represent 55% of all the salmon caught (released and retained) in recreational fisheries. The information is obtained as part of the regular creel survey or logbook reports obtained from the fisheries. Efforts are being made to expand the reporting of catch and released fish in Québec, because in the past these data were not routinely collected.
Denmark (in respect of the Faroe Islands and Greenland)		
Faroe Islands	0	No catch and release fishing.
Greenland	0	
European Union		
Denmark	606	Of 2,256 salmon caught in rivers in 2005, 606 were released.
Finland	Negligible.	
Germany	No statistics available	<u>Brandenburg</u> : Catch and release fishing is forbidden. <u>Northrhine-Westfalia</u> : No estimate available for rod catch and release of Atlantic salmon. <u>Sachsen-Anhalt</u> : There is no catch and release of salmon.
Ireland	2,553	Catch and release angling has been increasing steadily. In 2005, approximately 12% of the angling catch was returned (i.e. about 2,553 salmon). This is an increase from 9% in 2004. Catch and release is only mandatory on a small number of rivers although it is practised by individual anglers, in other areas, on a voluntary basis. In August 2004, the Minister of State at the Department of Communications Marine and Natural Resources requested salmon anglers to voluntarily fish on a catch and release basis to the end of the season. He also requested the National Salmon Commission and fisheries managers to look in this context at the necessary conservation measures for the 2005 season.
Spain	No statistics available	In general, catches using barbless hooks are not declared. In Asturias, there are experimental zones where catch and release is the only method of fishing allowed to September. It is not common practice in other zones in Galicia, Cantabria, Guipuzcoa and Navarra.
Sweden	No statistics available	Catch and release fishing is practised in a few rivers in order to improve the protection of females before and during the spawning period. The practice of catch and release fishing is likely to increase.
UK (England and Wales)	10,737	Provisional estimate for 2005 is 55% of rod-caught fish released (including voluntary and compulsory catch and release). In 2005, a national campaign was undertaken aimed at increasing voluntary release rates and providing guidance on best practice for anglers, and a number of Agency Areas wrote to and/or made presentations to anglers and fishing associations with a view to encouraging an increase in the voluntary return rate. As a result, a number of clubs introduced bag limits and method restrictions. Existing agreements (both formal and voluntary) continued to apply for some rivers in southern England for the release of all fish caught by anglers. A new catch and release guide was circulated to all holders of a full Agency salmon licence in September, highlighting rivers with poor stocks and a low catch and release rate.
UK (Northern Ireland)	No statistics available	Bag limits of 4 and 2 salmon daily apply in the two Northern Ireland angling jurisdictions. Catch and release is required thereafter. There is an increasing trend of catch and release even though bag limits have not been reached. In one fishery jurisdiction there is a legal requirement for catch and release up to 31 May.

UK (Scotland)	46,249	An estimated 56% of all salmon and grilse caught by rod and line were subsequently released in 2004. 58% of early-running MSW salmon (those caught before 1 May) caught by rod and line in 2005 (4,205 fish) were subsequently released. With the exception of anglers fishing in the Annan and Esk salmon fishery districts, where catch and release is mandatory between the start of the fishing season and 1 June, catch and release is voluntary, although some fishery proprietors make it a condition of any permit issued.
Iceland	9,150	16.7% of all rod-caught salmon.
Norway	Negligible	The extent of catch and release fishing is sporadic and accidental.
Russian Federation	23,592	87% of the total recreational catch. This information is based on catch reports sent to the relevant authorities.
USA	0	There is no directed catch and release fishing for sea run Atlantic salmon in the United States. However, there is a limited catch and release fishery for reconditioned broodstock in both the Connecticut and Merrimack river systems. This year the State of Maine also proposed a new catch and release fishery in the Penobscot River. A technical committee was charged with conducting a risk assessment to evaluate a variety of options for a fishery and any associated adverse effects of those options. A policy committee was also created to evaluate the policy implications of each option. The risk assessment determined that a catch and release fishery in the Penobscot for sea run returns from September to October would not pose a risk to the restoration of salmon in the Penobscot or recovery of endangered salmon in the Gulf of Maine distinct population segment. Based upon the report of the technical committee, no significant policy concerns were raised. However, the policy committee did recognize that the USFWS and NOAA are currently conducting a status review on the Penobscot population to determine if it warrants protection under the ESA and any fishery would be subject to the findings of this review. The State is in the process of developing proposed regulations, which will be subject to public review and comment before any final decision is made to implement the fishery.
TOTAL	138,773	

5. Any measures taken to further minimise the level of unreported catches

Party	Measures taken
Canada	Seizures, prosecutions and penalties associated with illegal fishing activities are published in local newspapers and on the government web sites. Convicted individuals are frequently asked to make restitution to local conservation organizations.
Denmark (in respect of the Faroe Islands and Greenland)	
Faroe Islands	No new measures.
Greenland	No new measures.
European Union	
Denmark	No new measures.
Finland	No new measures.
Germany	<u>Brandenburg</u> : No new measures. <u>Northrhine-Westfalia</u> : No new measures. <u>Sachsen-Anhalt</u> : No new measures.
Ireland	No new measures. Regional authorities have continued to issue on-the-spot fines for non-return of angling logbooks.
Spain	No new measures, but unreported catches are low.
Sweden	No new measures.
UK (England and Wales)	Rod licences were issued electronically by the Post Offices in 2005, which resulted in a more up-to-date and accurate database for issuing reminders. Therefore, a higher proportion of anglers will have received a reminder in 2005. A rod licensing scheme was introduced from April 2005 for those fishing the Border Esk in Scotland, thus extending the regime that previously only applied to those fishing the English part of the catchment. A number of netmen (haaf nets) operating in the Solway Estuary (North West Region) were prosecuted for under-reporting following a surveillance operation throughout July and August 2004, which linked observed daily catches of salmonids caught by identified netmen to the returns they subsequently submitted to the Agency. Reporting rates in this fishery are believed to have been significantly improved in 2005.
UK (Northern Ireland)	No new measures.
UK (Scotland)	No new measures.
Iceland	No new measures.
Norway	No new measures. In recent years systems and routines for reporting catches have been gradually improved in many salmon rivers, amongst them many of the major sport-fishing rivers. Measures taken may include introducing deposits on catch reports, employing data technology to support the collection and compilation of catch reports and increasing general awareness of the importance of more accurate catch reporting amongst fishermen. These improvements have led to a considerable reduction in unreported catches of river catches by angling.
Russian Federation	Further implementation of the Federal Law on “Fisheries and conservation of aquatic biological resources” of 2004 is anticipated to contribute to minimizing the level of unreported catches through, <i>inter alia</i> , a new management approach being implemented from 2005 and including renting out of fishing sites to users of aquatic biological resources, including Atlantic salmon, on the basis of a 5-year contract with federal authorities.
USA*	No new measures. Educational efforts are continuing to ensure that recreational anglers can identify Atlantic salmon and are aware of the fishing restrictions. Particular emphasis has been placed on distinguishing between trout and juvenile Atlantic salmon to reduce bycatch and mortality at the early life stages.

* Unreported catch estimated to be zero.

DESCRIPTION OF METHODS CURRENTLY USED FOR ESTIMATING UNREPORTED SALMON CATCHES IN NORWAY

Main approach

The main approach to estimate unreported catch is to divide total unreported catch into components and then establish estimates for each component in relation to reported catches. Detected trends on the extent of the fishery or catches from one year to another are also taken into account. Total unreported catch is divided into the following components:

- Illegal catches in the sea;
- By-catch in marine commercial fisheries;
- Legal catches in sea bag net and bend net;
- Legal catches in the sea by angling;
- Illegal catches in rivers;
- Legal catches in rivers, mainly by angling.

Illegal catches in sea

In 1996 a study on illegal fishing in Norway was conducted (ØF-Rapport nr. 23/1996). In the report the extent of illegal fishing in the sea and illegal catches is estimated. Information on annual numbers of confiscations of fishing gear and reports of illegal activity, derived from surveillance activities, are used to estimate trends in levels of illegal fishing and illegal catches. Current estimates are based upon this study and detected trends from reports on surveillance activities.

By-catch in marine commercial fisheries

A system for reporting by-catch of salmon in marine commercial fisheries is not established, and the knowledge on by-catches from different types of these fisheries is limited. However, by-catches by marine commercial fisheries in home water are, in general, not considered to be a major contributor to the total figure of unreported catches. Test fishing by mackerel gill nets, which are considered to be the main problem, has given information about by-catches of salmon in this type of fishery. The current estimate is based upon these studies, reports on the increase or decrease of this fishery and an overall consideration of potential by-catches in other commercial fisheries.

Legal catches in sea by bag net and bend net

The reporting system for legal takes by bag net and bend net has been improved by introduction of catch journals mailed directly to Statistics Norway from the fishermen themselves. The return of catch journals was about 95 per cent for the years 1993-1999 (93 per cent in 1999). A study by Mørkved & Krokan conducted in 1996 entitled "An analysis of Norwegian bag and bend net fishermen" indicates that catches are slightly under-reported. However, this study was not specifically designed to explore the potential extent of under-reporting of catches. Current estimates are based on this study and more "common

knowledge” of the fisheries, which still gives reason to believe that catches are under-reported.

Legal catches in sea by angling

Although every fisherman has an obligation to “somehow” report salmon catches in the sea by angling to Statistics Norway, there is no system to report these catches. The lack of a system is mainly due to the fact that no licence is necessary to participate. Some trial surveys on the extent of legal takes in the sea by angling have been carried out for some rather limited geographical areas such as fjords. In order to try to get an overview of the extent of, and catches by, this fishery a nationwide study (ØF-rapport nr.7/1997) was conducted in 1996 in co-operation with Statistics Norway. Current estimates are based on these studies.

Illegal catches in rivers

Information derived from reports on surveillance activities is used to estimate trends in levels of illegal fishing and illegal catches in rivers. There is also reason to believe that surveillance activities in rivers by fishing right holders have increased over the last few years due to substantial efforts for better organization and local management of salmon rivers. Illegal catches in rivers are in general not considered to be a major contributor to the total figure of unreported catches. Current estimates are based on these reports and detected trends.

Legal catches in rivers, mainly by angling

The reporting system for legal catches in rivers by angling has been improved due to better organization of fishing right holders and local management of salmon rivers. Several studies conducted in different rivers show that with a catch report return-rate of 30-50%, which is common in Norway, about 60%-75% of the total catch is reported. In many rivers a deposit on fishing licences has been introduced, which is refunded when catch reports are returned. In these rivers catch-reports are improved and the return-rate of catch reports has risen to 85-95%. However, there is still reason to believe that legal takes in rivers are under-reported and current estimates are based on an overall consideration of the facts presented.