



Council

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EU Salmon Fishery Information

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This document provides some facts relating to the operation and extent of European salmon fisheries in the following countries:

- Finland
- Ireland
- Sweden
- UK England and Wales
- UK N. Ireland
- UK Scotland

Finland

1. Management of the Salmon Fishery

There are two river systems in Finland that drain into the Atlantic Ocean (the Rivers Teno and Nääämöjoki) and which support Atlantic salmon stocks. Both are border rivers between Finland and Norway with their lowest section belonging to Norway only. There is no Atlantic Salmon fishery in the sea.

The salmon fishery is managed by regulations introduced and agreed by the Finnish and Norwegian authorities for the river fisheries.

Responsibility for management of the salmon fishery in Finland lies with the Ministry of Agriculture and Forestry and is administered through the eleven regional districts. These districts enforce fisheries legislation and carry out inspection.

2. Brief description of the fishing gear and recent legislation

The salmon populations of the River Teno and River Nääämöjoki reproduce naturally and fishing restrictions are used as a means of preserving and developing the salmon stocks. On the Finnish side of the river, the fishing rights are privately owned. Some of the Sami people have old rights to use driftnets, standing nets and dams in certain places and time.

Regulations of fishing in the river Teno for non-resident persons:

Fishing is only permitted with rod and lure. The duration of the season is from 1st of June to the 20th of August. The fishing days starts at 19.00. The fishery is closed each week from 19.00 on Sunday to 19.00 on Monday. Use of shrimp, baittrap or artificial lures resembling them or use of baitfish or warm bait is prohibited. Salmon that have spawned the previous autumn and migrate to the sea in the early summer must be returned to the water immediately.

Fishing from a boat is permitted along the entire length of the river. Fishing from a boat without a local rower is allowed from Monday to Sunday between 9 p.m. and 2 p.m. The boat used must be registered in the Teno boat register in the name of a local resident.

Fly fishing and fishing with rod and reel from the bank is permitted on certain places.

3. Recent Mean Catch and Current Catch Level

The total salmon catch in Finnish side of the River Teno in 2002 was 90 tonne and River Nääämöjoki was 2.6 tonne.

4. Age Composition of the Catches

Atlantic salmon populations in these rivers are considered healthy with large fluctuations in the yearly abundance of salmon but no declining trend. Salmon stocks in these systems comprise both ISW and MSW salmon.

5. Stock Assessment and Conservation Limits

The salmon monitoring program has three key element:

- catch and fisheries statistics
- Estimation of juvenile abundance and density by electric fishing
- Sampling of the catch for biological data (age structure, size and origin)

6. Salmon Hatchery Programmes and Restocking

All salmon production is natural, and no releases of salmon are allowed in these river systems.

Ireland

This document provides factual information relating to the operation and extent of Irish salmon fisheries. It is designed to answer frequently asked questions regarding the size of the catch, exploitation levels in the fisheries (commercial and rod) and the systems that are in place to manage Irish Salmon Fisheries. Information on the level of interception of stocks from other countries, based on micro-tag returns, is also provided.

1 Management of the Irish Salmon Fishery

Responsibility for management of the salmon fishery lies with the Department of Communications, Marine and Natural Resources and is administered through the seven Regional Fisheries Boards (East, South, South West, Shannon, West, North West and North). The Boards enforce fisheries legislation and carry out inspection at sea and on inland waters. This surveillance is further enhanced by dedicated naval surveillance co-ordinated through the Central Fisheries Board. Each region is further sub-divided into districts for administrative and management purposes. There are 17 salmon fishery Districts in Ireland.

The Foyle Fisheries salmon fishery is administered by the Foyle, Carlingford and Irish Lights Commission (Loughs Agency) which is a North/South body established under the British/Irish Agreement Acts.

2 Brief Description of Fishing Gear and Recent Legislation

The main fishing engines used for the taking of salmon in Irish waters are 1) drift nets; 2) draft nets; 3) snap nets; 4) various traps and trapping nets (loop, pole, bag); and 5) fishing rods.

New conservation measures were introduced in 1997 aimed at reducing fishing effort, these have been continued since and are as follows: -

- Cap on public commercial fishing licences for draft nets and drift nets
- Area of fishing at sea reduced from 12 to 6 nautical miles
- Drift net season constrained to 1st June to 31st July
- Draft net fishery deferred to the 12th of May
- Restriction on night time drift net fishing (0400 to 2100 hrs only)
- Reduction to 4 days fishing per week
- Monofilament netting legalised for drift net fishing.

Further measures were put in place since 2001 as follows: -

- Introduction of mandatory carcass tagging and logbook scheme in 2001 for all sectors of the salmon fishery.
- Ban on the sale of rod caught fish
- Angling bag limit of 1 per day up to 1st June with 3 fish per day subsequently up to a season limit 20 fish
- TAC of 219,619 salmon imposed for commercial fisheries in 2002
- TAC of 182,000 imposed for commercial salmon fisheries in 2003
- TAC to be consistent with the national scientific advice by 2005

The development of scientific advice in Ireland is in keeping with current ICES methodologies and will be refined in line with any changes in approach adopted by ICES.

Drift nets – surface enmeshing gill nets fished at sea.

In general the maximum length of drift net permissible for salmon or sea trout fishing is 732 metres in the Southern, South Western, Shannon and Western Fisheries Regions and 1,372 metres in the North Western and Northern Fisheries Regions. The byelaws provide for lower maxima in certain waters such as specified tidal waters and bays in these fisheries regions and in the Eastern Fisheries Region.

Minimum mesh size = 17.8 cm/7" in the round (8.9cm/3.5" stretched mesh).

Maximum depth allowed - 45 meshes.

Duration and location of drift net fishery

Season opens in June and closes at the end of July – effectively fishing takes place for 17 hours per day, 4 days per week during 2 months of the year. The main drift net fisheries are in the North, North West and South West. Salmon drift net fishermen are restricted to fishing in the District in which their licence has been issued.

Number of drift net licences

There were 880 salmon drift net licences issued in 2002. The number of licences issued in 2003 will not be known until the end of the 2003 season. However, since 1997, the number of drift net licences has been capped at 887.

Draft nets – seine nets operated from shore by wading or boats, which encircle and draw fish into shore in estuaries and rivers.

Duration and location of draft net fisheries

Season opens in mid-May and closes at the end of July. (Some local variations occur). Mostly located in the South West, Shannon, Eastern and Northern Regions.

Number of draft net licences

There were 544 salmon draft net licences issued in 2002. The number of draft net licences issued in 2003 will not be known until the end of the 2003 season. However, since 1997, the number of draft net licences has been capped at 577.

Snap nets – traditional inshore net similar to seine net operated between two boats (cots) with head rope being manually dropped to entrap fish entering the net.

Duration and location of snap net fisheries

Season opens in mid-May and closes mid August. Exclusively located in the Southern Region.

Number of snap net licences

There were 139 salmon snap net licences issued in 2002. This is the maximum permitted number of snap net licences.

Other methods – traps, loop, bag, and pole nets and other engines.

Duration and location of other commercial fisheries

Season opens in mid-May and closes at the end of July. (Some local variations occur). Catches by traps has declined markedly as a result of the closure for conservation purposes. Loop nets are specific to the Swilly estuary in the Northern Fishery Region. Bag nets are a fixed engine used in the sea.

Number of other commercial licences

There were 23 licences for other commercial salmon fishermen issued in 2002 (20 loop, 2 bag and 1 trap). This is the maximum permitted number of other licences.

Rod angling – Fly fishing, lure fishing and bait fishing.

Duration and location of rod fisheries

Season opening varies locally but can be 1st January through end of September. An anglers logbook and gill tags are issued with each salmon rod licence. Anglers must return their completed logbook and any unused gill tags within seven days of the licence expiry, (even if no salmon have been caught).

Restrictions and bag limits

Various local restrictions are in place on use of prawn, shrimp or other natural baits and artificial lures.

Ban on the sale of rod caught salmon (or sea trout >40 cms).

Bag limit of 1 salmon (or sea trout >40 cms) per day up to 1st June with 3 salmon per day subsequently up to a season limit of 20 fish.

Number of rod licences for salmon angling

There were 32,814 licences issued for rod anglers in 2001. Information is not yet available for 2002 but a similar number is expected.

3 Recent Mean Catch and Current Catch Levels

For the purposes of reporting national salmon catch statistics, 50% of the Foyle Fisheries Area drift net and draft net catch is included in the Irish figures while the remaining 50% is included in the catch statistics of UK (N. Ireland).

Therefore the estimates below include all 17 Irish Salmon Fishery Districts and half of the Foyle areas catch.

Drift net	Mean (previous 10 yrs) = 456 tonne (approx. 168,000 salmon) Catch in 2002 = 514 tonne (194,177 salmon) 76% of total catch
Inshore net	Mean (previous 10 yrs) = 127 t (approx. 47,000 salmon) Catch in 2002 = 89 tonne (33,222 salmon) 13% of total catch
Rod	Mean (previous 10 yrs) = 79 tonne (approx. 29,000 salmon) Catch in 2001 = 70 tonne (26,074 salmon) 11% of total catch

In 2002 a TAC was introduced for all 17 salmon fishing districts. This does not include the Foyle Fisheries Area which have a separate management regime.

The Commercial fisheries TAC for 2002 was set at 219,619 fish. The total recorded commercial catch in 2002 was 207,339 fish.

The Commercial fisheries TAC for 2003 was reduced to 182,000 fish.

In order to move towards attainment of Conservation Limits in all Districts, a pragmatic approach is being followed whereby the Districts requiring the greatest reductions in current catch to meet Conservation Limits have been targeted with the greatest reduction in District catch.

As the current catch model is largely based on the mixed stock drift net fishery, it was decided that some reduction should occur in catch level in all Districts. This rationale was based on the knowledge that the District catches include migrating salmon from outside any particular District. Therefore a reduction in the mixed stock fishery in all Districts may further benefit attainment of Conservation Limits in Districts below the required stock level. This approach is also based on the presumption that fish saved by a reduction in catch in all Districts will benefit those Districts in future years when depleted stocks have recovered.

4 Age Composition of the Catches

The Irish catch is principally composed of grilse (1SW salmon). The drift net fishery is predominantly (>95%) a grilse fishery. Catches of multi-sea winter salmon in the drift net fishery are not significant as it is closed during the main MSW run and large summer salmon (which may be repeat spawners) are not common.

The principal fisheries catching MSW salmon are the rod angling fisheries and to some extent the inshore nets. Efforts to curtail exploitation of early running spring salmon have resulted in a mid-May start to the season for inshore commercial fishing engines. This should result in a significant reduction in the numbers of spring salmon being taken. Additional restrictions on the rod fishery may be required once advice is available on Conservation Limits for this component of the stock.

5 Unreported Catch

The carcass tagging and logbook programme introduced in 2001, has provided for the first time an estimate of the previously unrecorded legal catch in Ireland, which was about 32%.

The national illegal unreported catch is currently assumed to be approximately 10% based on local observations. Based on direct monitoring of dealers and knowledge of the local fisheries, this is probably an overestimate.

6 Stock Assessment and Conservation Limits

The principal aim of the stock assessment programme is to evaluate the total return of salmon relative to a pre-determined Conservation limit. The data used for this assessment and for the establishment of a Conservation Limit are the catch (including the unreported catch of each stock) and the exploitation rates by the fisheries, derived each year from the results of the National Micro-tagging and Tag recovery programme. Between 200,000 and 300,000 salmon smolts are tagged annually from nine locations around Ireland. Examination of over 100,000 salmon annually in commercial and recreational catches (between 30% and 50% of the national catch) provides recoveries of between 3,000 and 10,000 tags for analyses. This generates specific information on exploitation rates, marine survival and freshwater survival of Irish salmon stocks.

These values provide an estimate of the total spawning numbers and by adding the total spawners to the total catch this provides the total stock that returned. The Conservation Limit for Ireland has been estimated from a stock and recruitment curve derived from catch data and exploitation rate data over 30 years (ICES 2003). These values are summarised below.

Irish National Conservation Limit	273,661
Estimated spawners in 2002	301,925

This provisional estimate suggests that the national spawners exceeded the required National Conservation Limit in 2002. However, the number of spawners has been below the Conservation Limit for 13 of the previous 15 years, and it is known that of the 17 salmon Fishery Districts, only 8 have been consistently above their individual Conservation Limit requirements since 1997.

The National Salmon Commission (NSC) provides catch advice to the Department of Communications, Marine and Natural Resources relative to the objective of meeting conservation limits. The Commission is a statutory body, which includes representatives of the commercial fishing sector, the angling sector and other relevant stakeholders. The Commission is advised in its work by its own Standing Scientific Committee, which includes scientists from Bord Iascaigh Mhara (BIM - The Irish Sea Fisheries Development Board), Central Fisheries Board (CFB), Dúchas (The Irish Heritage Body), Environmental Protection Agency (EPA), Foyle, Carlingford and Irish Lights Commission (Loughs Agency) and the Marine Institute. The Commission is also advised by the National Fisheries Management Executive (NFME), a committee of the fisheries boards' Chief Executive Officers.

The NFME proposed a reduction of 5% in the average 5-year commercial catch of 9 Districts shown to have met their conservation limits based on the current model. A

reduction of 10% was proposed for Districts which needed to reduce their catch by up to 50% and a reduction of 15% was proposed for Districts where the catch was required to be reduced by 50% - 75%. In the three Districts where all of the returning stock would be required to contribute towards achievement of the conservation limit, a 20% reduction in the 5-year average catch was proposed. This process will be continued until 2005 when the National TAC will be consistent with the scientific advice from Standing Scientific Committee of the National Salmon Commission.

These deliberations resulted in a recommendation that the total allowable quota for 2003 for all Fishery Districts be set at 182,000 rather than the precautionary catch advice of 140,000 salmon provided by the Standing Scientific Committee. The NFME considered that further reductions in catch would be required in 2004 to progressively reach the precautionary catch advice level provided by the scientists.

Fishery district	Maximum number of wild salmon or sea trout that may be taken by commercial fishing engines
(1)	(2)
Dublin	678
Wexford	2,416
Waterford	15,141
Lismore	10,003
Cork	25,197
Kerry	31,061
Limerick	14,288
Galway	4,572
Connemara	3,094
Ballinakill	7,232
Bangor	6,202
Ballina	23,438
Sligo	5,840
Ballyshannon	10,344
Letterkenny	17,497
Dundalk	1,503
Drogheda	3,494

Bearing in mind the socio-economic impact of the immediate cessation of the salmon fishery in some districts, Government policy, adopted on the recommendation of the NSC, is that spawning escapement in all Districts and catchments must be brought up to the level of the Conservation Limit as soon as possible and within a defined timeframe. The Scientific Committee of the NSC has agreed that the implementation of a three-year strategy aimed at reaching the conservation limit by 2005 would be acceptable from a scientific viewpoint.

7 Irish Catch as a Percentage of North Atlantic Catches

The percentage of the total North East Atlantic (NEA) catch accounted for by Irish fisheries in 2002 was 34%, while the percentage of the total North Atlantic catch was 31%.

TOTAL NEA	740,071
% Irish catch	34.25
TOTAL North Atlantic	806,738
% Irish catch	31.4

If a similar estimate is carried out using numbers of fish rather than weight, the proportion of the North Atlantic catch accounted for by the Irish fisheries is approximately 25%

8 Irish Catch as a Percentage of Total Irish and North East Atlantic Returns

The reported catch of Irish salmon accounted for approximately 47% of the total returning stock of 1SW salmon in 2002 and approximately 24% of 2SW returns.

Estimated total returns of 1SW Irish salmon	492,531
<i>% of total 1SW returns caught in Irish fisheries</i>	<i>47.45</i>
Estimated total returns of 2SW Irish salmon	83,460
<i>% of total 2SW returns caught in Irish fisheries</i>	<i>23.69</i>
Estimated total returns of 1SW North East Atlantic salmon	1,469,733
<i>% of European 1SW returns in Irish fisheries</i>	<i>15.90</i>
Estimated total returns of 2SW North East Atlantic salmon	781,622
<i>% of European 2SW returns in Irish fisheries</i>	<i>2.53</i>

Compared to the overall return of North East Atlantic salmon, the Irish catch represented approximately 16% of total North East Atlantic returns of 1SW fish and 2.5% of the total European 2SW returns.

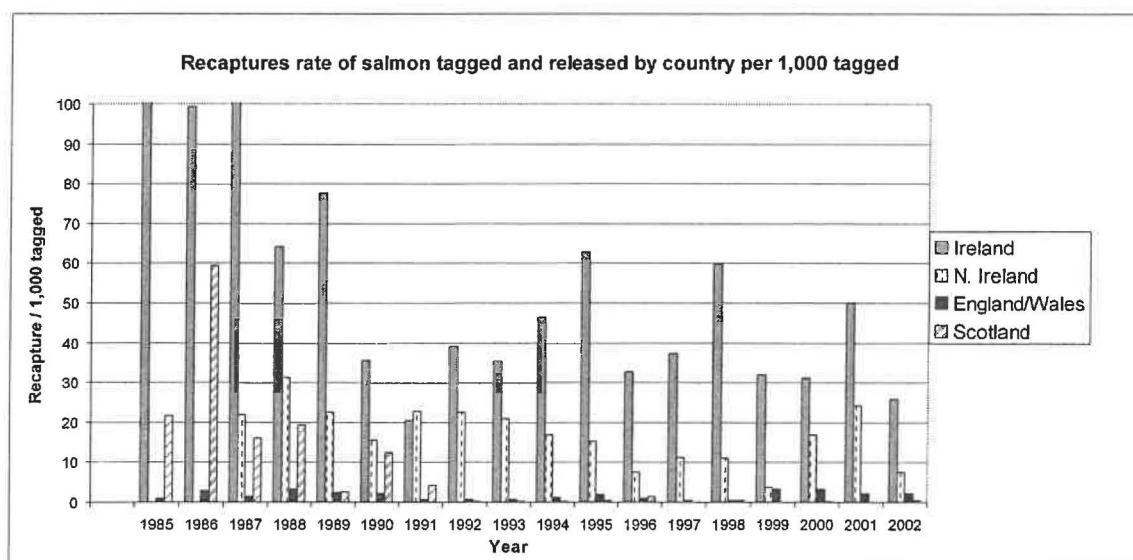
9 Recaptures of Tagged Salmon from other Countries

The vast majority of tag returns in Irish drift nets derive from fish tagged and released in Ireland. Tags have also been recorded from Northern Ireland, Scotland, England and Wales, France, Denmark and Spain. There is only a very small incidence of tagged Norwegian and German salmon.

Table 1: Estimate of total tagged fish in the Irish commercial fishery - i.e. the actual number of tags recovered is raised by the proportion of the samples examined to the total catch (including unreported catch) in Ireland e.g. if 50% of the catch is examined for tags and 10 tags are recovered, then the estimated number of tags in the total regional catch is 20.

Fishing year	Countries of Origin								
	Ireland	N. Ireland	England/Wales	Scotland	France	Spain	Norway	Denmark	Germany
1985	14,136	-	35	647	-	-	-	-	-
1986	15,666	-	155	802	-	-	-	-	-
1987	12,450	572	264	260	-	-	-	-	-
1988	8,971	627	658	401	-	-	-	-	-
1989	10,272	466	313	78	28	-	-	-	-
1990	6,170	153	514	375	9	-	-	-	-
1991	2,644	677	175	175	-	-	-	-	-
1992	16,290	820	204	10	10	-	-	-	-
1993	7,852	490	288	6	3	23	3	-	-
1994	12,082	247	229	9	-	11	3	-	-
1995	13,903	153	442	12	186	9	-	69	-
1996	7,908	302	237	31	3	9	-	3	-
1997	8,864	418	109	-	-	5	-	-	-
1998	17,406	133	88	18	-	42	-	36	-
1999	7,957	137	351	-	6	21	-	104	3
2000	6,237	379	280	5	2	42	-	-	2
2001	12,996	871	237	-	-	35	-	-	-
2002	6,989	257	121	6	-	18	-	-	-

Figure 1: Estimate of recapture rate of all tagged fish in the Irish commercial fishery (estimated total number of tags recovered is divided by the number of tagged smolts released. This is then multiplied by 1,000 to provide a standardised recapture rate per 1,000 smolts released).



10. Salmon Hatchery Programmes and Restocking

Production of juvenile salmonids from Irish hatcheries is widespread, as is the subsequent restocking. The Irish Marine Institute has developed a comprehensive database of restocking with the various life-stages for the past 6 years. Unfed fry comprise the vast bulk of the stocking material from hatcheries. Approximately 2.9 million were released in 2002. Stocking with parr also takes place with 598,000 released in 2002 compared to 349,000 in 1999. About half a million smolts have been stocked each year since 1995 including micro-tagged, fin-clipped and unmarked fish.

The Department of Communications, Marine and Natural Resources Policy Guidelines on Restocking and the use of hatchery offspring have been incorporated into the recent NASCO Guidelines on restocking which will be reviewed at the 20th Annual Meeting of NASCO in June 2003.

11. Development of Salmon Fisheries Management

The Government's National Development Plan includes a Tourism and Recreational Angling Measure (TRAM). The Measure aims to support the development of the tourist and recreational inland and sea angling sector through, inter alia, the improvement, conservation and expansion of fishery habitats and stocks and the supply of technical advice for fisheries development.

With assistance from TRAM, a new river inventory has been established of 256 salmonid rivers comprising 169 salmon rivers with a further 87 designated as sea trout rivers. The extent of quantity and quality (based on Amiro and Rosgen classifications) of utilisable habitat has been determined for these rivers. This habitat information has been derived from remotely sensed data analysed in a GIS platform and is supported by a database containing over 2,500 electro-fishing sites throughout the country.

A programme of work was undertaken on habitat rehabilitation/restoration for salmon under the EU supported Tourism Angling Measure, 1995-1999. This involved surveying 2,000 km of channel and the expenditure of some €24 million to enhance 400 km of channel. Ongoing assessment of enhanced habitat indicates that substantial increases in juvenile salmonid stocks have resulted from this programme.

An adult salmon census programme (fish counter programme) was established with the installation of 22 fish counters between 1995 and 2000. These counters provide an estimation of the total spawning stocks in these rivers and whether Conservation Limits are being met. The data collected from these index rivers also provide important information in determining the attainment of Conservation Limits in each district. Counter data for 2002 is available from the Irish Marine Institute's web site.

The habitat information described above provides a measure of freshwater salmon habitat and potential salmon production. Such an estimation will support a second

approach to the calculation of salmon stock Conservation Limits, based on the carrying capacity of a given wetted area in a fisheries District. It is anticipated that the calculations that derive from this research will enable a crosscheck of existing conservation limits and therefore provide a sounder basis for the management of the salmon stock.

This approach is consistent with methodologies emanating from the EU funded SALMODEL project for the determination of conservation limits. The application of Bayesian hierarchical analyses for the determination of appropriate egg deposition rates based on high resolution geographical information and useable accessible salmon habitat (wetted area) will provide a more robust estimation of river specific and summed district Conservation Limits than those derived from the current catch model adapted from ICES.

A national programme to estimate salmon production and habitat productivity is being prepared. The elements of an integrated programme include:

- Wild salmon and sea trout tagging scheme
- National Micro-tagging and Recovery Programme
- Index Catchment (Burrishoole)
- Fish Counter programme
- Juvenile salmon stock assessment programme

12. Economic/ socio economic evaluation of wild salmon in Ireland.

The consultants who undertook the evaluation were required to consider and quantify the economic/ socio-economic value and importance of the commercial wild salmon fishery and the salmon rod angling fishery in Ireland. They were also requested to set out options on how both components of the industry should be sustainably managed in the future, given the importance of the wild salmon to coastal and rural communities in Ireland.

The evaluation addresses the shortcomings of earlier work through the employment of extensive new survey research and provides an up-to-date estimation of the economic and socio-economic value of the commercial and recreational salmon fishing sectors.

The Central Fisheries Board will assemble the views of stakeholders to the findings of the consultants and report to the Minister for Communications, Marine and Natural Resources on the level of support and consensus that exists.

13. Further information

Statistical and Fishing Activity Report on the Wild Salmon and Sea Trout Tagging Scheme

The Central Fisheries Board publish a report of the Wild Salmon and Sea Trout Tagging Scheme providing information on commercial and recreational salmon and sea trout catches and fishing activity. This scheme was first introduced in 2001 and the report contains data relating to the commercial and angling season of 2001 and the commercial season of 2002. A report on the 2002 angling season will be published when the angling catch and activity returns have been received and collated by the Central Fisheries Board.

National Report for Ireland (unpublished reports produced by the Marine Institute for the ICES Working Group on North Atlantic Salmon, 1996-2002).

Provides an overview of the salmon fishing season in the most recent year with reference to historic catches, exploitation rates, marine survival rates, attainment of conservation limits and catch advice.

Annual Report of the Burrishoole Salmon Assessment Programme (Published annually by the Marine Institute).

A comprehensive scientific appraisal of the Burrishoole River salmon and sea trout stocks based on the monitoring facility in Newport, Co. Mayo. Information available on wild salmon smolt output since the 1950's and subsequent returns to the facility.

Annual Returns of Coded Wire tagged salmon (Marine Institute - Unpublished)

Results of the programme which examines on average over 100,000 salmon (up to 50% of the reported catch) annually with details of release locations and recovery locations, dates, size of returning salmon etc.

Department of Communications, Marine and Natural Resources Policy on Restocking and Ranching (unpublished internal document).

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Sweden

Management of the Swedish salmon fishery

There are 23 wild salmon rivers at the Swedish west coast and furthermore annual releases of reared salmon smolts take place in three of these rivers in order to compensate for decreased production capacity due to building of dams. Responsibility for national management of the salmon fishery lies with the Swedish National Board of Fisheries. Fishery regulations are decided upon after discussion between local, regional and national authorities and interest groups. Fishery officers at the regional county administrations are involved in the administration of fisheries as to providing permits for coastal trap nets, keeping track of local angler organizations and collating of catch statistics.

Brief description of fishing gear and recent legislation

A coastal salmon fishery takes place almost exclusively by bagnets. The number of bagnets have been decreasing almost continually for a number of years and only about 15 were operating in 2002. In addition there is a small scale net fishery in coastal areas close to the shore, but studies have shown that the salmon catch in these is very low. Salmon fishery with drift nets is not allowed.

Salmon fishery in rivers consists of three different parts; the large part is angling by rod and line. In two rivers there are brood stock fisheries of spawners to provide eggs for rearing of smolts. A traditional fishery with nets or traps does still exist in three rivers.

Salmon fishery outside the coastal area is banned and salmon fishery in the coastal area is closed in the period from 1 October – 31 March.

Some new regulations were implemented in 2002. Fifteen new protected areas were established outside small sea trout rivers. In addition a number of existing protected areas were enlarged and at the same time greater responsibility was given to county administrations to regulate the fishery in the outer parts of these areas. The boundaries of a protected area in Kungsbackafjorden were changed to agree with boundaries of Natura 2000-area.

A decision was taken that the salmon fishery in rivers will be closed in the period from 1 October to 31 March (earlier 1 October – last of February). This regulation will be implemented from 1 January 2003.

Recent mean catch and current catch levels

The mean catch level in the Swedish salmon fishery in the preceeding five-year-period (1997-2001) was 23 tonnes (6599 salmon) and the catch in 2002 was 28 tonnes

or 7559 salmon. The proportion of the catch taken in rivers has increased from 35% in 1995 to a level of 75% (21 tonnes) in 2002 , which was the highest level recorded.

Age composition of the catches

In the preceeding five-year-period 1 SW salmon made up 62% of the salmon catch in numbers and 42% of the catch in weight. In year 2002 1SW salmon made up 63% of the catch in numbers and 43% of the catch in weight.

Unreported catch

The current level of unrecorded catch is guesstimated to be in the order of 10%. Important factors causing unreported catch is for instance that the national legislation in some cases allow fishery without any reporting. The lack of a well organized salmon fishery and collection of catch statistics in some of the minor rivers is also believed to lead to under reporting.

Stock assessment and conservation limits

Salmon stocks in most of the rivers are monitored by annual electrofishing surveys of salmon juveniles. In addition an index river will be established at the Swedish west coast.

UK(ENGLAND AND WALES)

A review of salmon stocks and fisheries in England and Wales is published annually by CEFAS and the Environment Agency in the '*Annual Assessment of Salmon Stocks and Fisheries in England and Wales*'. Copies of the 2002 (and future) reports may be obtained from these organisations or can be downloaded from the EA website (www.environment-agency.gov.uk).

SALMON FISHERIES

The Environment Agency (EA) and the Department for Environment, Food and Rural Affairs (Defra), or the Welsh Assembly Government (WAG) in Wales, each have roles in the management of salmon fisheries. Defra and WAG have overall responsibility for salmon within their areas of jurisdiction. They are jointly responsible for setting the statutory framework under which salmonid stocks and fisheries are managed, and the Secretaries of State have statutory responsibilities to consider the acceptability of all new fishery regulations and fishing licence duties proposed by the EA.

There are a large number of different specialised salmon fishing methods employed in UK(England and Wales). These can be grouped into five generic categories: gill nets (drift, trammel, sling and coracle nets), sweep nets (draft, draw and wade nets), hand-held nets (haaf/heave and lave/dip nets), fixed engines (T-nets, J-nets, stop/compass nets, putcher ranks, traps, weirs and cribs/coops) and rods.

REGULATION OF FISHERIES

Salmon fisheries in England and Wales are regulated by measures specifying the nature of the gear, along with where, when and how it may be used. Anyone fishing for salmon with net or rod must have a licence, and numbers of net licences issued are limited. Catch limits have also been applied to some rod fisheries. Conservation Limits and Management Targets are set for 68 principal salmon rivers; refined values have been developed for about 60% of these rivers and preliminary figures have been set for the remainder. Development of management measures is based on the objective of exceeding CLs in at least four years out of five.

Different measures are applied to different fisheries, taking account of the nature and state of the individual stocks. Fishing regulations in England & Wales are not revised annually but are usually reviewed on a 5-10 year basis.

RECENT REDUCTIONS IN FISHING EFFORT

A range of approaches have been used to reduced salmon fishing effort in UK(England and Wales) in recent years.

Reduction in licences issued: The Table below shows the number of licences issued in 2002 and reductions in these groups since 1983 for each of the netting groups and 1994 for rods.

Method group:	Number of licences in 2002	Reduction since 1983
Gill nets	113	51%
Sweep nets	85	59%
Hand-held nets	140	58%
Fixed engines	34	54%
Rods	182k	38% since 1994
Total nets	372	56%

One new Net Limitation Order was introduced in 2002, which would reduce the number of licences in the Rivers Taw/Torridge seine net fishery from 14 to 0 as fishermen retired from the fishery; compensation arrangements were agreed to accelerate this phase-out.

Reductions in fishing seasons: There have been substantial reductions in fishing seasons in many fisheries. Most notable of these are the measures introduced in 1999 to protect spring running salmon, which resulted in the closure of nearly all salmon net fisheries before 1st June and imposition of compulsory release of all salmon caught in other net fisheries and in rod fisheries before 16th June.

Compensation: Arrangements have been made to reduce netting in 10 fisheries in 2002 by compensating netsmen not to fish for all or part of the fishing season. Payments have been made by the Environment Agency and by various interest groups.

Closure of mixed stock fisheries: A number of net fisheries in England and Wales are being (or have been) phased out because they exploit migratory salmonids returning to several rivers (i.e. mixed stock fisheries). Licence numbers are being reduced as fishermen retire from the fisheries, and in some cases, the phase-out has been accelerated by compensation schemes.

Significant advances have been made in the phase-out of the North East Coast Salmon fishery. A £3.4 million buy-out, funded by the Department of Environment, Food and Rural Affairs (£1.25M) and the NASF (£2.15M), has been agreed which will result in 52 of the remaining 68 netsmen leaving the fishery. This will represent an 89% reduction in the number of licences since 1992.

DECLARED AND UNREPORTED CATCHES IN 2002

Catch returns are compulsory for all salmon fisheries. Return rates for net fisheries are close to 100%. Return rates for rod fisheries have been substantially increased in recent years by sending a second reminder to all salmon anglers.

The Table below shows the retained catch in England and Wales in 2002 and the percentage reduction compared with the average for the period 1993-2001:

Fishery type	Catch in 2002	Reduction compared with 1993 to 2001 average
Coastal	107.9 t	16%
Estuarine	24.4 t	29%
Riverine (retained)	28.5 t	36%
Total reported	160.8 t	23%
Unreported (est.)	31.0 t	N/A

Pressure to further reduce illegal fisheries has been provided by sending leaflets to over 20,000 hotels, restaurants and other retail outlets reminding of the conditions in the Salmon Act 1986 relating to the handling of salmon in suspicious circumstances.

It should be noted that the buy-out of much of the NE coastal fishery is expected to significantly reduce the coastal catch from 2003.

HABITAT PROTECTION AND CONSERVATION

Salmon Action Plans: Final SAPs have been completed for nearly 60% of the 68 principal salmon rivers in England and Wales. The consultation process reviews stock and fishery status (including the use of conservation limits), identifies factors limiting performance and lists a series of costed options to address these. The Final Plans contain agreed actions which must be addressed within 5 years and provide refined salmon conservation limits. Provisional conservation limits have been set for the remaining rivers. Salmon Action Plans should be completed for all principal salmon rivers by December 2003.

EU Habitats Directive: Twelve rivers have been designated as Special Areas of Conservation for salmon under the EU Habitats Directive. All consents affecting these rivers, including abstractions and discharges, will therefore be reviewed by 2006, and amended if necessary by 2010.

Expenditure: Nationally, £2 billion is being spent to improve water quality in all rivers and estuaries over the period 2000-2005, directly or indirectly benefiting fisheries, including salmon. This continues the high level of investment in improving water quality in England and Wales.

UK (Northern Ireland)

The Department of Culture Arts and Leisure and its agents, the Fisheries Conservancy Board (FCB) have responsibility for conservation and protection of wild salmon fisheries in Northern Ireland, except for the Foyle and Carlingford areas they are the responsibility of the Loughs Agency of the Foyle, Carlingford and Irish Lights Commission (FCILC), a cross border body established under the Good Friday Agreement. For the purposes of reporting to ICES/NASCO, 50% of the FCILC catch is allocated to the Irish catch record and 50% to the UK (NI) catch record.

Foyle and Carlingford Areas.

The exploitation of salmon is strictly controlled through regulations made under the provisions of the Fisheries Act (NI) 1966 and the Foyle Fisheries Act 1952. All commercial salmon netmen are required to hold licences. The commercial season in the Foyle and Carlingford areas is restricted to 6 weeks (15 June-31 July), fishing is restricted to 4 days/week and drift net fishermen only allowed to fish 12h/day. There are also restrictions on length and depth of nets, boat size and use of monofilament net is prohibited.

From 2001 the number of draft nets licensed in the Foyle area was capped at 57 nets, while drift nets remained capped at 112. It is clear from licence checks that considerable numbers of licence holders in the Foyle area are not actively fishing.

The commercial catch was 40,000 fish in 2002. The annual average catch for the period since 1993, season when the fishery was reduced from 8 to 6 weeks is 35,000 salmon.

A daily bag limit of 4 fish (salmon/sea trout) applies for angling in the Foyle and Carlingford areas.

The Foyle Area (Control of Fishing) Regulations 1999 provide for "Real Time" management of the salmon stock which effectively means that the exploitation of the returning adult fish can be reduced if the numbers of fish reaching the spawning tributaries is insufficient. Therefore a number of management targets are set. On the River Mourne, for example, more than 2,600 salmon must pass through the counting stations in the period 1 May to 30 June each year. Otherwise closures of both the commercial (netting) and recreational (angling) fisheries can be introduced if conditions are suitable to increase migration of the adult to the nursery areas.

Similar provisions can be introduced if a target of 4,200 is not achieved in the period 1 May to 10 July each year, and angling can be closed 10 days early if 7,000 fish have not passed Sion Mills by 15 September. As part of the management regime, the Foyle Area (Close Season), Regulation 1999 allows the period of closure of the commercial fishery to be reduced by 1 week (i.e. the netting season is extended by 1 week, 4 twelve hour days) if the escapement target of 8,000 salmon has been exceeded in the period 1 May to 24 July. In 2002, the spawning targets were met and the fishery was extended by 4 (12 hour) days with a further 1,600 fish netted.

Similar provisions are provided for in the Rivers Roe and Faughan, though these are restricted to closures if escapement targets are not achieved.

This management regime has proved effective in maintaining stock status.

The River Foyle and its tributaries has recently been recommended as a Special Area of Conservation (SAC) under the EU Habitats Directive and it has been designated as an Area of Special Scientific Interest (ASSI).

Fisheries Conservancy Board Area.

The commercial season in the rest of NI (regulated by the Fisheries Conservancy Board) runs from 18 March – 15 September, although fishing effectively takes place over a much shorter period as it is targeted on grilse runs. Restrictions also apply to the length of the fishing week and to the length and depth of nets and boat lengths. Monofilament netting is prohibited.

Commercial Nets Buy-Out Scheme

A commercial netmen buy-out scheme was introduced in 2001/02, with funding of £2m (£1.5m from Government and £0.5m from NASF) for the 3 years 2001/02 to 2003/04. There were 31 net owners, 15 owned fixed bag or fixed draft nets, 10 were drift net fishermen and 6 were tidal draft net fishermen.

To date 19 owners have been bought out of which 9 are fixed net owners, 6 are drift net owners and 4 are tidal draft net owners. Those nets took an average 7,500 salmon per annum in recent years out of an average commercial catch of 10,000 to 11,000 fish per annum.

A further 5 owners have accepted offers or are currently negotiating with the Department. Of the remaining net owners some do not fish their nets leaving only 6 active fishermen operating in the Fisheries Conservancy Board area. In support of this scheme byelaws were introduced in 2002 to limit the number of salmon fishing licences that can be issued.

The commercial catch in the FCB area fell to 3,500 in 2002 compared with the 10 year average of 10,000 – 11,000 fish per annum.

A salmon carcass tagging scheme was introduced throughout N. Ireland, in 2001 providing angling catch data which was previously unreported.

New bye-laws – the Fisheries (Amendment) Bye-Laws (Northern Ireland) 2002 came into operation in the Fisheries Conservancy Board area on 1 March 2002. These restrict angling for salmon to “catch and release” from the start of the angling season to 31 May and introduce a two-fish bag limit from 1 June for the rest of the season. These bye-laws give legal status to the voluntary arrangement which was introduced in the 2001 fishing season.

Work has continued on the implementation of the Salmon Management Plan in the FCB area, which is a catchment based approach to salmon management, involving the setting of spawning/conservation targets at catchment level consistent with the NASCO precautionary approach.

UK (SCOTLAND)

In UK (Scotland), salmon fishing rights, both in freshwater and in the sea, are private heritable titles which may be held separately from any land. In order to fish for salmon, it is necessary to have the legal right to fish or written permission from the person having such right. All salmon fishing rights were originally vested in, and many are still owned by, the Crown. Rights may also be owned by private individuals, companies, institutions, Local Authorities and, in a few cases, by the Scottish Executive. The rights may be bought, sold or leased.

In the early 1960s, a drift net fishery for salmon was started off the Scottish coast. This method was prohibited in 1962, and the ban remains in force. Subsequent legislation was introduced to prohibit the use of any form of gill net to catch salmon, and to prohibit the landing of any salmon caught by unlawful methods. Carriage of monofilament netting with a mesh size of less than 250 mm (stretched mesh) in a British fishing boat within the six-mile limit is an offence as is their use within territorial waters. Monofilament nets with a mesh size equal to or greater than 250 mm may be used outside the six mile limit. These nets are used as bottom-set tangle nets for fish such as turbot, monkfish and skate.

The effect of these measures has been to confine the permitted methods of salmon fishing to those defined in the Salmon and Freshwater Fisheries (Protection) (Scotland) Act 1951 as amended by the Salmon Act 1986.

Since the mid 19th Century, estuary limits separating estuaries from the sea have been established for all major salmon rivers in Scotland. The 1951 Act provides that :

- inside estuary limits, the permissible methods of fishing for salmon are rod and line, net and coble and cruives (a type of trap – although some cruive rights still exist, none has been exercised for several decades).
- outside estuary limits, salmon may be fished for by rod and line, net and coble or by fixed engine (bag nets, fly nets or other stake nets). In the Solway Firth, haaf nets and poke nets may be used.

Salmon netting methods

The Salmon Act 1986 provided that regulations could be made to define the various permissible netting methods. These definitions were made in the Salmon (Definition of Methods of Net Fishing and Construction of Nets) (Scotland) Regulations 1992, as amended in 1993 and 1994. A number of provisions apply to all nets for salmon. The minimum mesh size permitted is 90 mm (stretched mesh), the minimum twine thickness is 0.9 mm, and no part of any net may be constructed using monofilament twine.

Net and coble: the use of a sweep net, paid out from a boat, and worked from the bank or shore or from waters adjacent to the bank or shore, whereby salmon are surrounded by the net and drawn to the bank or shore, provided that –

1. the nets and any warps are not made or held stationary, nor allowed to remain stationary, nor allowed to drift with the current or tide but are both paid out and hauled in as quickly as practicable and kept in unchecked motion by and under the effectual command and control of the fisherman for the purpose of enclosing the salmon within the sweep of the net and drawing them to the bank or shore;
2. no stakes, dykes, other obstructive devices or other nets are used in association with the net;
3. the water is not disturbed by throwing of stones or other objects, or splashing or other activity in order to drive the salmon into the area to be swept by the net;
4. the net shall not come within 50 m of any other such net already being paid out or hauled in until the last mentioned net has been fully hauled into the bank or shore; and
5. the net is not designed or constructed for the purpose of catching fish by enmeshing them.

Fixed engine (bag net, fly net or other stake net): the use of a fish trap (including the use of a landing net to remove salmon from such a trap) consisting of one or more fish courts and associated inscales and wings, together with a leader net designed to lead the salmon into the trap; the whole of which is fixed or moored to the shore or seabed; provided that –

1. no part of the bag net, fly net or other stake net except mooring warps and anchors shall extend seawards beyond 1300 m from the mean low water mark; and
2. no part of the net or trap is designed or constructed for the purpose of catching fish by enmeshing them.

Salmon angling

Salmon are also caught by rod and line. Methods used include fly fishing, the use of spinners, spoons and plugs, and in some cases baits such as shrimps, prawns and worms may be used. In 18 of the salmon fishery districts, the local managers, the District Salmon Fishery Boards, have applied for and been granted Statutory Instruments made by the Scottish Ministers to prohibit the use of certain lures or baits, so that in several rivers, the only permitted method is fly fishing.

It has long been an offence to kill kelts in Scotland, and it has been usual practice to release coloured and gravid fish. A more recent development has been the adoption of catch and release in the rod fishery. This was started principally to reduce exploitation on early-running MSW salmon, but has been taken up throughout the

season, and in many fisheries, the practice also extends to fishing for sea trout. Records were first collected in 1994, when 8% of the total catch of salmon and grilse taken by rod were subsequently released. In 2002, the estimated catch and release figure amounted to 41% of all fish taken by anglers.

Current salmon fishing activity in UK (Scotland)

Figure 1 shows the approximate locations of fixed-engine fisheries (F), and net and coble (N) fisheries in 2002. In addition, rod fisheries operate in many of Scotland's nearly 400 salmon rivers, and in all of the major ones.

Figure 2 shows the trends in netting effort since 1952. Fixed engine effort measured across the whole fishing season in 2002 represented 6% of the level recorded in 1952. The 2002 level of fishing effort in the early months of the year, when early-running MSW salmon return, represented 3.5% of that recorded in 1952. A similar pattern is shown for the net and coble fishery. Effort across the whole season in 2002 was 7.8% of that recorded in 1952, while the spring fishing effort in 2002 was only 0.75% of the 1952 level.

Figure 3 shows the current catches by rod and line, net and coble, and fixed engine for the period 1952 to 2001. Summary data, at 10-year intervals, are shown in Table 1, below.

Table 1: Numbers of salmon+grilse reported as caught in Scottish salmon fisheries.

Year	Fixed Engine	Net & Coble	Rod & Line	Catch & Release	Total
1952	189760	154358	41097		385215
1962	191876	228929	72129		492934
1972	208926	200916	59646		469488
1982	154956	116593	64754		336303
1992	56673	44947	82897		184517
2001	25041	7233	44597	27699	104570

Since the start of the time series, net catches rose until the mid 1970s, despite decreasing effort, but have shown a steady decline since then. Rod catches have remained remarkably stable, especially when catch and release in recent years are taken into account. However, this pattern disguises the declines which have been experienced in catches of early-running MSW salmon.

Figure 1

Net Fisheries for Scottish Salmon

F - Fixed Engines

N - Net and coble

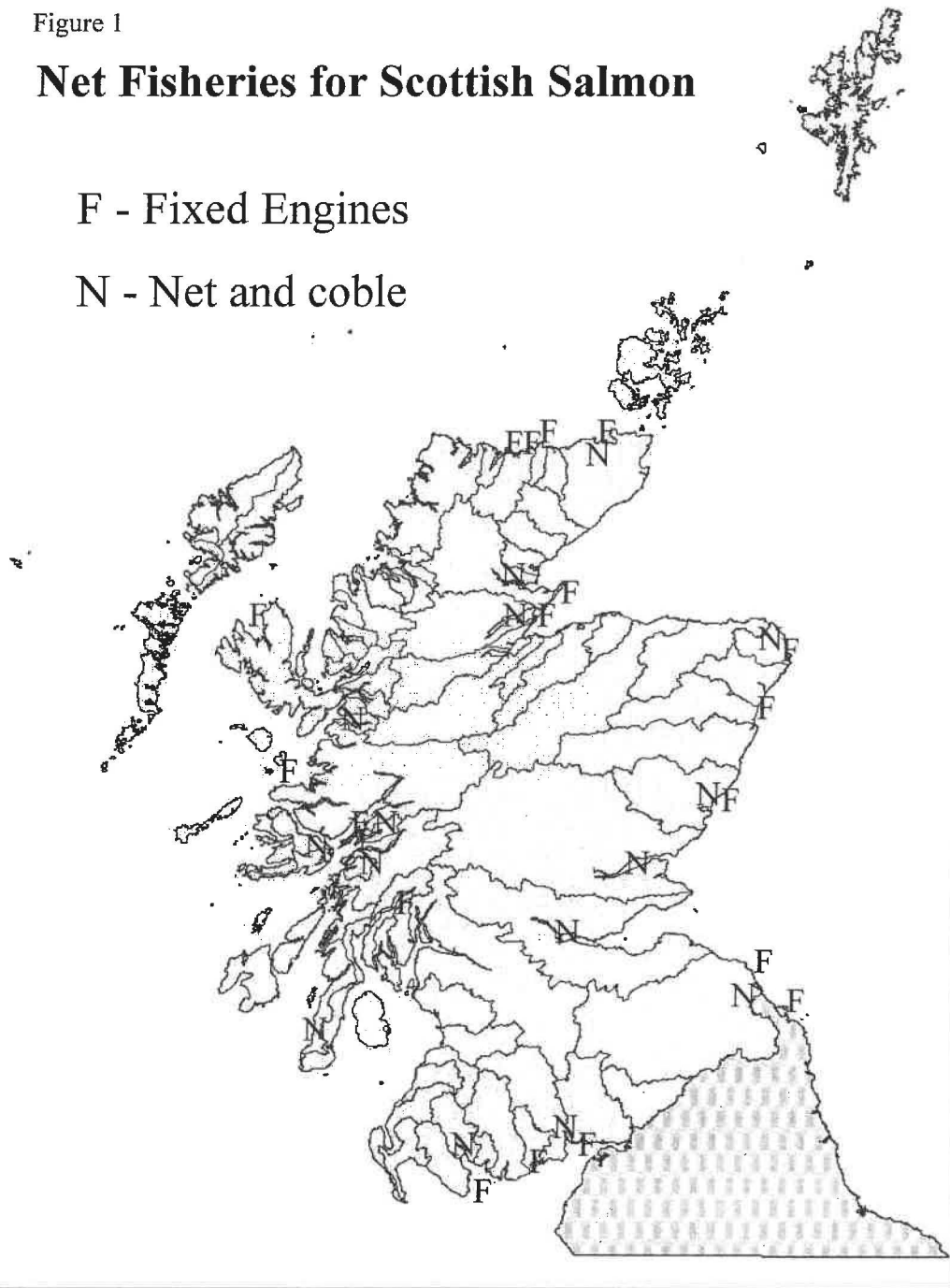


Figure 2

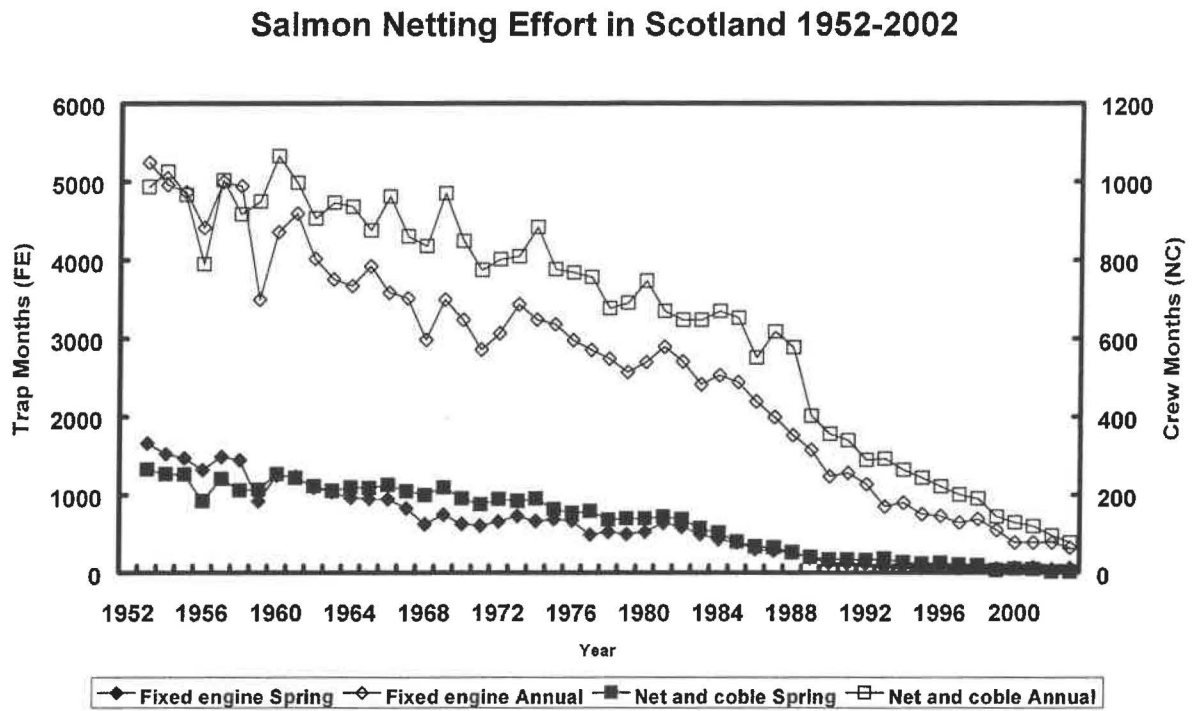


Figure 3

