

North-East Atlantic Commission

NEA(00)6

Exploitation of salmon in the United Kingdom and Ireland

(Tabled by the European Union)

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Introduction

1. Levels of exploitation in salmon fisheries can be controlled either by limiting catches directly through quotas or by restricting fishing effort. In the UK and Ireland the second of these options has traditionally been used. This is principally because of the large number of salmon fisheries - there are over six hundred significant salmon rivers in the UK and Ireland, some with several distinct stocks - and the lack of the data needed to set quotas for individual river fisheries. Quotas may also be more difficult to enforce than effort controls in a large number of widely distributed fisheries.
2. Given the difficulty of setting quotas for so many fisheries, effort controls are likely to remain the principal means of controlling exploitation of salmon for the foreseeable future in both the UK and in Ireland, although Ireland is introducing global quotas for rod and net fisheries as a supplementary measure.
3. Effort controls work by limiting the time that fishermen can operate and the efficiency of their gear. They can take a number of forms: close seasons, close times and closed areas are used in both rod and net fisheries; in net fisheries there are limits on numbers of nets; there are also restrictions on the design and use of nets and on method and lures used by anglers. In addition, catch and release is an increasingly common practice among anglers and in England and Wales it is compulsory to release all salmon caught before 15 June.
4. There is no doubt that effort controls can be an effective way of controlling exploitation. Unlike quotas, they tend to operate on the level of exploitation, not on the level of the catch. As a result, catches tend to vary in line with stock abundance. This is an advantage where fisheries are largely exploiting individual or local stocks, because salmon abundance in different rivers may vary independently from year to year. With fixed quota systems, levels of exploitation tend to rise when stocks are low and fall when they are high; there is therefore a need to adjust quotas annually and this is impractical for over 600 stocks. Effort controls avoid these problems; although they still tend to result in increased exploitation when stocks are low, the effect is not as great as with quotas.
5. Because with effort controls catches tend to fluctuate in line with stock abundance, additional restrictions on effort do not have an entirely predictable effect on catches, although they will, all things being equal, reduce levels of exploitation. In this they differ from quotas, since a reduction in a quota should mean a commensurate reduction in the catch. Over time, however, extra restrictions on effort are likely to reduce average catch levels, assuming that average stock abundance remains unchanged.

6. Reductions in effort, of course, are not always the result of increased legal restrictions. Economic factors, such as declining profitability in net fisheries, are a major factor. In Scotland, for example, economic and social factors have reduced netting effort by over 80% between 1975 and 1999, a reduction encouraged by the fact that under Scottish law net fisheries are privately owned and can be bought out by angling interests. Effort reductions on this scale may well make extra legal restrictions on effort in net fisheries unnecessary.
7. The combined effect of effort controls and voluntary restrictions on effort have led to very substantial reductions in the fishing effort in the UK and Ireland over the past 30 years. Table 1 and Figure 1 show the fall in number of legal instruments in these countries over this period, and Table 2 and Figure 2 show the changes in catch levels. These data are discussed below in relation to the management of salmon in the different parts of the UK and Ireland.

England and Wales

8. There is a public right to net or trap salmon in coastal waters and estuaries in England and Wales, but all salmon fishermen are required to hold licences and the number of licences in each net fishery is limited by law. There are currently some sixty separate salmon and sea trout net and trap fisheries, employing a wide range of methods, from coastal drift nets to hand held haaf nets. In all fisheries there are rules regulating the design and use of the gear. Average catches per licence in individual net fisheries vary from less than 5 fish a year to over 150.
9. In the past 25 years the total number of licences issued for salmon netting has been reduced from 923 to 437, a 53% decrease (Table 1 and Figure 1). Most fisheries exploit salmon from a single river or a small number of rivers flowing into a common estuary, and reductions in the number of licences have mainly been targeted at those where there has been a need to protect individual river stocks. A small number of fisheries, including the major North East coast salmon drift net fishery, operate in coastal waters and exploit stocks from more than one river; it is Government policy to phase these fisheries out. In the North East coast fishery, the number of net licences has fallen from 142 in 1992 to 72 in 1999, a reduction of 49%.
10. All net and trap fisheries are subject to an annual close season, and most have a minimum weekly close time of at least 42 hours (a few licensed trap fisheries are subject to close seasons but no close times). Increases in both annual and weekly closure periods have been used in many fisheries to reduce the level of exploitation on particular stock components. In 1999, for example, the close season for all salmon net fisheries was extended until 1 June; for the great majority of fisheries it starts on 1 September. This has further reduced the potential fishing effort; thus, for example, although the number of licensed nets has declined by 38% since 1991, additional measures to limit the length of the season in different fisheries have reduced the number of net days available for fishing by 48%.
11. The right to fish for salmon in freshwater in England and Wales is a private one, and the great majority of salmon rod fisheries are privately owned. All salmon anglers

must hold a salmon rod licence, but these are issued on demand. Salmon exploitation by anglers is limited by close seasons and by restrictions on methods and gear. The opening and closing dates of the close season vary widely between rivers. The close season must by law be at least 92 days. Restrictions on methods and gear can take various forms: on some rivers only fly fishing is permitted during certain parts of the season and on others the use of baits is banned for all or part of the season. Since 1999 anglers in England and Wales have been required to release unharmed all salmon caught before 16 June. Many angling clubs have also introduced their own measures to reduce the numbers of salmon that are killed, including voluntary catch and release. In 1999, 44% of all rod caught fish were released.

12. Catches of salmon in England and Wales have shown a similar pattern of decline to the fishing effort (Table 2 and Figure 2). Overall the declared catch has fallen by 45% between the late 1970s (1975-79) and the late 1990s (1995-99). It is believed that the actual decline in catches has been even greater than this because catch reporting has improved considerably in this period.

Scotland

13. Salmon fishery management in Scotland has been devolved to District Salmon Fishery Boards which operate within a legislative framework set up by Parliament. There are 83 salmon fishery districts, of which 51, including all the major rivers, have Boards in place; in the remainder management is undertaken by owners. This management structure therefore operates on a river-by-river basis, and is funded by the owners of the salmon fishing rights. These rights, whether for fishing in fresh water or in the sea, are private, heritable titles, which may be held separate from any land. No fishing licences are required in Scotland, but it is an offence to fish for salmon without the legal right or without written permission from a person having such a right. The methods that may be used are also defined by law, and the main methods employed in different areas are: rod and line in freshwater, in estuaries and on the coast; net and coble (seine nets) in freshwater, in estuaries and on the coast, and fixed engines (various types of trap nets) on the coast outside estuary limits. Drift netting was banned in 1962.
14. There have been progressive moves to reduce the exploitation of salmon by nets in Scotland over the past 50 years. This has been achieved, in part, by buying-out private netting rights, and many fisheries have been completely closed. This has contributed to the 83% reduction in the netting effort (expressed as the number of crew (net and coble) or trap (fixed engine) months fished) between 1975 and 1999 (Table 1 and Figure 1). These figures give a more complete picture of the reduction in netting effort over this period than the number of nets used because they take account of changes in the fishing pressure at different times of year, in particular the marked reduction in fishing effort on spring-running multi-sea-winter salmon.
15. The method of operation and the construction of nets and traps are also prescribed by law. No net or part of a net may be designed or constructed for the purpose of catching fish by enmeshing them, and the use of monofilament netting for salmon fishing is prohibited. In addition no part of any trap net, except mooring ropes and anchors, may extend more than 1300 metres from the shore.
16. Net fisheries are further regulated by weekly and annual close times. The weekly close time was increased by 43% in 1988 and now extends for a continuous period of 60 hours over the week-end. The annual close time varies between salmon fishery districts but must be a continuous period of not less than 168 days (153 days on the River Tweed). Angling is also controlled by close periods; the weekly close time for angling is Sunday, and the annual close season varies between salmon fishery districts, ranging from 60 to more than 130 days, with most districts having close times between 100 and 110 days. Angling is further restricted in 18 salmon fishery districts by regulations which ban variously the use of natural baits and lures with more than one set of hooks.
17. The management structure for salmon fisheries in Scotland also favours the widespread use of non-statutory rules to restrict fishing activities. Thus, for example, the owners of fisheries may restrict fishing to fly only for all or part of the season, a number have chosen not to start fishing until a month or more after the official starting date of the season and catch and release is being practised very widely. On the River Dee, for example, in recent years, most proprietors have

volunteered to delay the start of their fishing seasons until the beginning of March, instead of 1 February, and rod fishermen released almost all spring fish in 1999 and an estimated 75% of fish over the season. Many other Boards are putting in place tough spring salmon conservation policies for the 2000 season. These measures even extend to net fisheries; for example, the River Tweed nets will not be operated in the spring until 2003. Members of the Salmon Net Fishing Association of Scotland deferred voluntarily the start of their fishing operations by six weeks at the start of the 2000 fishing season.

18. The widespread reductions in fishing effort have been matched by a 70% decrease in the total catch (including rod fisheries) between 1975-9 and 1995-9. Data for the River North Esk for the latter part of this period show that the exploitation of 1SW salmon has been reduced from 30% in the late 1980s to 17% in last five years; the exploitation rate of 2SW salmon from this river have declined from 33% to 13% in the same periods.

Northern Ireland

19. In Northern Ireland the exploitation of salmon fisheries is strictly controlled through regulations made under the provisions of the Fisheries Act (NI) 1966 and the Foyle Fisheries Act 1952. The main exploitation occurs in the Foyle estuary and seaward and the regulations applying in the Foyle area are arguably the most restrictive in the EU.
20. The two main commercial methods of salmon exploitation in Northern Ireland are drift net fishing and fixed bag and draft net fishing. All commercial salmon netsmen are required to hold licences. The number of gear units licensed in Northern Ireland has fallen by over 50% since 1975 (table 1 and figure 1). This reduction reflects a policy of not increasing the number of licences issued in any year above the previous year's level combined with natural wastage, ie lapsed licences not being reapplied for. Commencing in 2001 the number of drift net licences available for issue in the Foyle area will be capped at 55. Furthermore it is clear that a considerable number of licensees, perhaps 50% are not actively fishing. Overall the nominal catch in Northern Ireland Irish net fisheries has declined by 35% since 1975.
21. The commercial season in the Foyle and Carlingford areas is restricted to 6 weeks (15 June to 31 July). Fishing is restricted to 4 days per week and additionally drift net fishermen are only permitted to fish 12 hours per day. There are also restrictions on the length and depth of nets, on boat size and the use of monofilament net is prohibited. The commercial season in the rest of Northern Ireland, which is regulated by the Fisheries Conservancy Board (FCB), is from 18 March to 15 September although the timing of the main salmon runs effectively curtails the season to around late May to the end of August. Restrictions also apply to the length of the fishing week, and to the length and depth of nets and boat lengths. The use of monofilament nets is also prohibited.
22. Salmon fishing rights in freshwater are mainly in private ownership or leased by angling clubs. All salmon anglers must hold a game rod licence and these are issued

on demand. Salmon angling exploitation is regulated through close seasons, restrictions on the type of fishing methods and in some areas bag limits are imposed.

23. A management system based on estimated spawning requirements has been operating in the River Foyle fishery area for many years. Stock reference levels have been set based on a scientific study of stock/recruitment relationships for the system. If, at certain dates during the season, target numbers of fish have not been counted upstream at three sites in the system, then specified closures of the angling and/or net fisheries take place. New regulations, The Foyle Area (Control of Fishing) Regulations 1999, introduced in 1999 have refined and formalised this mechanism.
24. A Salmon Management Plan is also being drawn up for the FCB area. The objective of the plan is to establish salmon conservation limits at a river, regional and national level. The central aim of management will be to ensure that, in most rivers in most years, sufficient adult salmon are spawning to ensure compliance with conservation limits. A Salmon Carcase Tagging Scheme is currently under consideration and should be in operation through the island of Ireland by 2001.

Ireland

25. There are seven designated salmon fishing regions in the Republic of Ireland. Statistics are collected by staff of the Regional Fisheries Boards and collated into a national data set by the Marine Institute. The Foyle Fisheries Area which is managed by a Commission representing both the Department of the Marine and Natural Resources in the south of Ireland and the Department of Agriculture for Northern Ireland.
26. The principal commercial salmon fisheries in the Republic of Ireland are: surface gill nets fished at sea; draft nets and traps operated in estuaries; and a range of local traditional methods (snap, loop bag and pole nets) operated mainly in inshore areas. Effort in these fisheries is controlled by a combination of restrictions on the gear and where and how it may be used, plus closed periods and closed times.
27. Major changes to the management of these fisheries were introduced in response to the 1996 report of the Salmon Management Task Force. The main recommendations of the Task Force are summarised at **Appendix 1**. The principal conservation measures it recommended were implemented in 1997. These involved a cap on the number of commercial licences, deferring the start of the draft net season till mid-May and of the drift net season to 1 June, reducing the fishing week from 5 days to 4, restrictions on night-time fishing and limiting fishing at sea to within 6 (rather than 12) nautical miles of the coast. These measures have reduced effort in commercial fisheries by at least 20%. As a result of the later opening of the season, fishing effort on spring salmon stocks (mainly due to the inshore draft and snap nets) has also been reduced in recent years.
28. The maximum number of public drift net and draft net licences allowed under the Control of Fishing for Salmon Orders (1980 and 1982) was 847 and 604 respectively. Following the Task Force recommendations, a 'cap' was placed on the number of commercial fishing licences to be issued at the 1995 level of 775 drift

nets and 464 draft nets, a 15% overall reduction on the early 1980s. Half this reduction (7%) had been achieved by 1999. Restrictions have also been placed on the other commercial fishing methods - excluding private or special local area licences.

29. Rod fisheries in Ireland may be privately owned, state owned or public, but all anglers require a rod licence, which are issued on demand. Catch and release is encouraged nationally and is compulsory, for wild salmon, on the Burrishoole and Delphi systems. The release of coloured, fly-caught, salmon in the autumn is fast becoming standard practice in Ireland. Angling effort is limited by close seasons and by restrictions on methods and gear. A total of 30,954 rod licences were issued to anglers in 1999. Although the number of licences increased after 1992, this was due to the introduction of special *one day* and *21 day* licences.
30. Considerable efforts have been made to increase marine surveillance by the Navy and Regional Fisheries Boards in recent years, and this has contributed to a marked reduction in the use of illegal gear, illegal fishing and under-reporting of catches. Low prices of wild salmon, coupled with fewer people entering the fishery, have also contributed to the reduction in fishing effort in the past three seasons.
31. The mean catches in the period following the introduction of new regulatory measures (i.e. 1997 to 1999) have been significantly lower than the preceding seven years in all areas except the Western Region, where catches may have included significant numbers of hatchery reared fish. Similarly, the national draft net catch (excluding the North Western Region where the Moy River draft net was suspended in 1994) has also been significantly lower in the most recent three years.

Appendix 1

Principal Recommendations of Irish Salmon Management Task Force (1996)

The Salmon Management Task Force (1996) was commissioned at a time when statistics for the North Atlantic as a whole were showing an absolute decline in catch for all methods of capture. The report of the Task Force recommended a radical approach to the management of Irish salmon stocks which includes a shorter season, a shorter fishing week, the introduction of carcass tagging and the imposition of quotas on the commercial salmon catch. Implicit in the report's findings is an assumption that there is a future for the tradition of salmon drift netting, provided that the number of licences is controlled and stocks are enhanced through strict conservation measures. The report also accepts that inevitably:

“the balance of advantage on conservation, environmental and economic grounds should lie increasingly with redirecting salmon stocks from interceptory commercial exploitation towards recreational fishing”.

The Task Force recognised that additional technical research was required to underpin their detailed proposals, particularly in relation to the targeting of the recreational salmon fishery as a principal source of future game angling revenue. They identified the following areas:

- Stock recruitment relationships, in particular quantifying the effect of additional escapement on smolt production and spawning stock levels
- The value of catch and release as a salmon conservation and management tool
- Relative effectiveness of angling under varying levels of total allowable catch
- Development of catchment management technology
- Selective enhancement of multi-sea-winter stocks

Following consideration of the Task Force report by the Minister for the Marine, the Department of the Marine and the Dáil Committee on Economic Strategy and Enterprise, it was decided to implement its principal conservation measures for the 1997 season.

The new management system envisages:

- setting *spawning escapement targets* for rivers, which can be achieved in the short term;
- determining *optimum spawning escapement targets* which could be achieved, if all factors limiting production were removed;
- determining compliance with such *spawning escapement targets* by providing spawning estimates (*population estimates of the number of spawning salmon*);
- setting *quotas* to ensure compliance;
- providing a legislative and scientific framework to allow the management system to operate (*carcass tags and logbooks*)
- using *fishery management plans* (catchment management plans) to move from spawning targets to optimum spawning numbers and to assist in the allocation of the resource by the beneficial users.

Progress towards these aims has been made with the recent establishment (March'00) of the National Salmon Commission. It is envisaged that the full implementation of the carcass tagging and logbook scheme will occur in 2001.

Figure 1

Table 1

Figure 2

Table 2

For figures and tables see Excel files `nea(00)6fig&table1` and `NEA(00)6fig&table2`