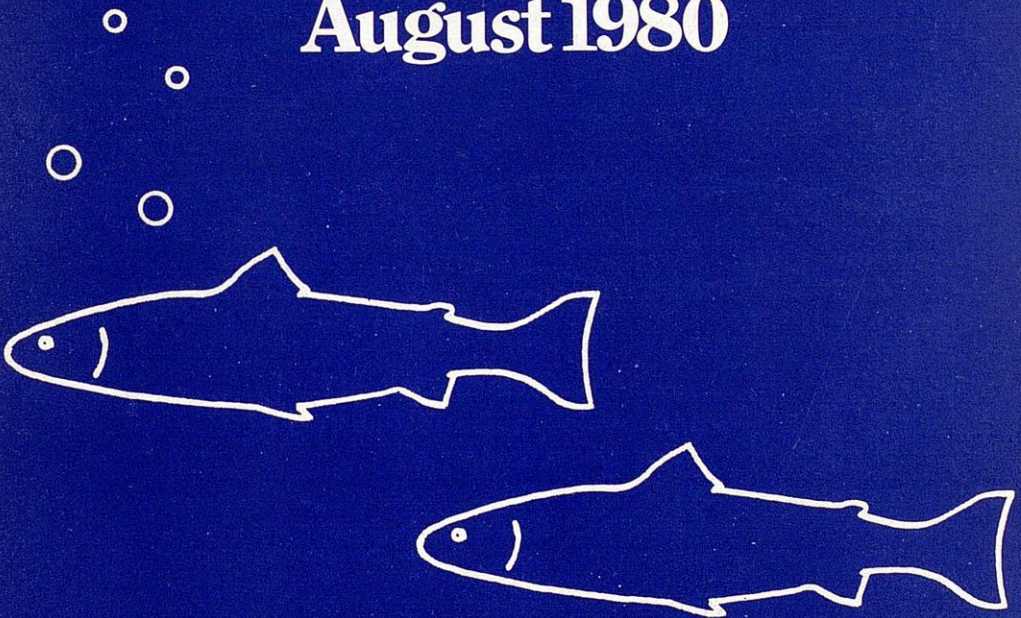


Atlantic Salmon Trust

Progress Report August 1980



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(University of Wales Institute of Science & Technology)

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Biological Association)

Dr. Graeme Harris, Ph.D. (Welsh Water Authority).

Observers: Mr. I.R.H. Allan (Ministry of Agriculture, Fisheries
and Food)

Mr. A.V. Holden (Dept. of Agriculture and Fisheries
for Scotland)

Mr. H.J. Killick (Natural Environment Research Council)

INTERNATIONAL ADVISORY GROUP (EUROPEAN SECTION)

| | |
|---------------------------------|---------|
| Mr. J.R.W. Stansfeld (Chairman) | U.K. |
| Mr. Thor Gudjonsson | Iceland |
| Dr. R. Vibert | France |
| Mr. Knut Rom | Norway |
| Dr. A.E.J. Went | Ireland |
| Dr. Nils Johansson | Sweden |
| Sr. Jose Lara Alen | Spain |
| Sir Richard Levinge Bt. | U.K. |

PROGRESS REPORT 1979 - 80

This report is being sent to all the contributors and friends of the Trust with the object of keeping them informed of its work in the field of salmon conservation.

The Raffle

Enclosed with this report individual supporters of the Trust will find some tickets in respect of the joint Trust - Salmon and Trout Association Raffle which is launched every year to raise money for both organisations. This is an example of the close co-operation which exists between the two bodies and it is hoped that the support for the Raffle will exceed that for last year. It is possible, of course, that some people may be members of the Salmon and Trout Association as well as subscribing to the Trust and so will receive two sets of tickets. In such cases, it is hoped that any unwanted tickets can be passed on to some other salmon angler.

The Appeal

The Appeal has now been in existence for 15 months and in that time we have reached the figure of £195,000. In view of the present financial pressures, this result is remarkable and reflects the concern felt by so many people for the survival of Atlantic salmon. However there is still a long way to go before reaching our target and unfortunately, despite our efforts to keep administrative costs to an absolute minimum, ever increasing costs make it essential for us to ask our friends and supporters to continue to help us as much as they possibly can.

On 5 November, 1979, the Scottish Launching of the Appeal took place in Edinburgh and approximately 90 persons, representing a good cross section of those persons in Scotland who are concerned with salmon attended. Lord Home of Hirsel gave the opening address, once again indicating his support for the Trust.

The Trust is extremely grateful to those people who organised special fund raising events in aid of our Appeal. Many other people have helped in many other ways, including donating articles for sale, with part of the proceeds going to the Trust.

At the end of January a very successful reception was held at Fishmongers' Hall, attended by over 300 people. Over £5,500 was raised during the evening, primarily from the auction of a Kenyan Safari, a fishing holiday on the Ristigouche in Canada, an auction of pictures and wine and a raffle of three superb fishing rods. The Trust is deeply indebted to those who so generously donated the articles for the Auction and Raffle, and particularly to those who made it possible for the winners to travel free of charge to Canada

and Kenya and enjoy their superb prizes.

During the year the Trust has been represented at the Game Fair, the Highland Sports Fair and Holkham Game Fair, and every opportunity is taken at these events to contact others with similar interests.

The Trust has been offered, and gratefully accepted, a film about Salmon and Salmon Fishing in Iceland produced by Arctic Films of Iceland, and is to receive 20% of all proceeds made from the showing of the film.

On various occasions the Committee of Management has recorded its appreciation of the outstanding work in connection with the Appeal carried out by David Clarke, the Chairman of the Appeal Committee, Jean Cormack, the Appeal Secretary, and her assistant Gail Newmark.

Changes in the Membership of the General Council & Committee of Management

During the year the Committee of Management decided to extend the membership of the General Council with the object of getting more people actually involved in the day to day affairs of the Trust. Towards this aim, the Chairman wrote to a number of well-known salmon conservationists asking them to become members of the General Council. The response was excellent and the new Council membership has been enhanced as a result. In addition to two fishing associations being directly represented on the General Council, the Trust was delighted to learn that the National Water Council had also accepted an invitation to be associated with the Trust and had nominated Mr. Gordon Bielby of the South West Water Authority to be its representative. It is considered that this close association with the National Water Council will have lasting benefits for the Trust.

The Trust has decided to hold a special General Council meeting in Edinburgh on 13 October, 1980, in the hope that many Scottish members would be encouraged to attend and offer their views on how the Trust can better achieve its aims.

The Committee of Management, under its Chairman, Vice-Admiral Sir Hugh Mackenzie, met at regular intervals throughout the year. Consideration was given to enlarging the Committee by inviting other conservation bodies to send representatives to the meetings and towards this end approaches have been made to a number of organisations. New members joining the Committee were Professor R.W. Edwards of University of Wales Institute of Science and Technology, Mr. J. Akroyd-Hunt, Mr. Peter Mills, M.P., representing the British Field Sports Society, and Mr. Michael O'Brien of the Fishmongers' Company, who was appointed Hon. Treasurer to the Trust. The Hon. Mrs. Jean Cormack, who attended meetings as Appeal Secretary, was also appointed a full member of the Committee in recognition of her work for the Trust.

Appointments

It was announced in June, 1980, that two members of the Committee of Management had been appointed Directors of the International Atlantic Salmon Foundation which works so closely with the Trust - namely, Sir Hugh Mackenzie and Mr. David Clarke, the Chairman of the Trust's Appeal Committee. At the same time it was learnt that Dr. Wilfred Carter, the Executive Director of the Foundation and a member of the Trust's Committee of Management, had been made Vice-Chairman of Canada's new Atlantic Salmon Advisory Board. These appointments indicate in a significant way the inter-relationship between the two important salmon conservation bodies which cover the North Atlantic, and enhance the prestige of the two bodies individually.

The International Advisory Group

This Group of well-known international salmon conservationists - the European members of which are listed in this report - is, of course, a product of the close relationship which exists between the Foundation and the Trust. Members of the Group met in Brussels in October, 1979, for the purpose of discussing with the E.E.C. Directorate General for Fisheries the proposed U.S.-drafted International Salmon Convention. Two memoranda containing the considered views of both the Trust and the Foundation were presented to the E.E.C. delegation and all members of the Group spoke in support of the principles of salmon fisheries management which were detailed in the memoranda.

The Group appointed Mr. Jonathan Stansfeld, a Director of Johnson Brothers, Montrosch, and Vice-Chairman of the Association of Scottish District Salmon Fishery Boards, as its Chairman. In view of the present high cost of travel, it has been accepted that the European members of the Group will tend to meet on their own whenever the need arises with the Trust's Director being responsible for the necessary liaison with the Foundation.

The Group has commented on a report by the Working Group on North Atlantic Salmon of the International Council for the Exploration of the Sea in connection with proposed research connected with the Greenland Salmon Fishery. In particular, the Group endorses fully the proposal to investigate and measure the mortality of salmon which die as a result of being damaged, but not captured, by the Greenland drift nets.

International Management and Conservation of Atlantic Salmon

The Trust has devoted a major part of its work towards advising individuals, politicians, fishery authorities and organisations of the special needs of Atlantic salmon within any future salmon

management convention. As most salmon enthusiasts know already, discussions on a new draft International Atlantic Salmon Convention have already taken place between the U.S.A., Canada and the European Commission. These discussions arose as a result firstly of the highlighting of the need for a new International Convention given at the 1979 Edinburgh Atlantic Salmon Symposium, which was sponsored by the Trust and the Foundation, and secondly of the initiative of the United States which published a draft convention in January, 1980. The United States and the Canadians, however, do not view a new Convention in the same light. Whereas the United States would like to see a strong convention covering the entire North Atlantic area and regulating exploitation in that area, the Canadians do not favour any outside interference with their own existing management and conservation policies. As a result a compromise has emerged which allows for the establishment of three regional councils under the main Commission. The areas to be covered under this possible arrangement would be:

- (a) The North West Atlantic: Members of Council: U.S.A. and Canada.
- (b) The North East Atlantic: Members of Council: The E.E.C. Norway, Iceland, Sweden.
- (c) The Greenland area: Members of Council: U.S.A., Canada and the E.E.C.

Each Regional Council would provide a forum for consultation and co-operation between member states in the conservation and management of the salmon resource of each area, while the main Commission would be required to supervise and co-ordinate the administrative, financial, and organisational affairs of the Convention.

A significant feature of the current debate on a new Convention concerns the role of the Greenland Salmon Fishery in the international sphere of management. It is now a well-known fact that the catches of this fishery consist of one-sea winter salmon which, if they had survived and returned to their home waters, would have done so as two - or more - sea winter salmon. This age group of salmon comprise some one-third of the total salmon catch in Scotland and until recently 70% of that for Canada. In addition it is known that three times more females are caught by the Greenland nets than males. A final point in connection with this fishery which has a direct influence on British salmon is that the scientists believe that the mortality of salmon which have managed to break free of the Greenland drift nets, but have been badly damaged in the process, is very high. As mentioned earlier, the scientists hope to quantify this mortality in the near future.

In the discussions which have so far taken place it is believed that there are still wide differences in the way in which the U.S.A. and Canada want the proposed Convention to operate. The E.E.C. position is not yet clear but it seems as if the Greenland fishery is,

unfortunately, the dominant issue.

The Greenland Expedition

The Foundation and the Trust decided in 1979 to sponsor an expedition of scientists to monitor the Greenland Fishery during August 1980. At the time that this report is being written the arrangements for the expedition have been finalised and the Trust is delighted that its representatives should be Dr. Derek Mills of Edinburgh University and Mr. Gordon Bielby of the South West Water Authority. Both are most experienced salmon scientists, while Dr. Mills is, of course, a well known author of books on salmon. The aims of the expedition will be to ascertain how the Fishery endeavours to maintain the internationally agreed catch quota of 1190 tons each year - in 1979 the quota was exceeded by about 17% but was not reached in the previous year. The team of scientists also hope to liaise with the Greenland fishermen and the Fishery authority. In view of the significance of this fishery in respect of future runs of salmon to home waters, the Trust feels that the expedition will provide valuable information which should be of benefit to all salmon-producing countries.

The E.E.C. Fisheries Policy

The Trust has paid particular attention to the E.E.C. and the deliberations on a common fisheries policy because, of course, decisions made in respect of the white fish industries of member states may affect the salmon industry and salmon conservation. In general very little attention has been given to the management or conservation of salmon stocks in any public debate on the E.E.C. fisheries policy. The Trust has tried throughout the year to rectify this omission by submitting memoranda detailing the principles of salmon conservation to members of both Home and European Parliaments and to the Directorate-General for Fisheries of the E.E.C. In general the Trust believes that the most important basic principle for the management of salmon stocks is contained in Article 66 of the draft United Nations Law of the Sea Convention treaty. This article stipulates that salmon producing countries shall have the primary interest in and responsibility for their salmon stocks and shall co-operate with other states which fish those stocks, such as Greenland, so that economic and social considerations are not ignored. The Trust believes also that all sea netting for salmon should be phased out in accordance with the recommendations of the Hunter Report on Scottish Fisheries. Drift netting in particular is considered to be an indiscriminate form of netting which can severely damage the fish and thus reduce its value.

However, the terms of Article 66 of the U.N. Law of the Seas Convention treaty would appear to conflict with the E.E.C. Council of Ministers January 1976 Regulation No. 101, which ruled that each member state should ensure that equal conditions of access to and use of its fishing grounds are provided for other member states. At present this particular Regulation is not enforced as member states

have been permitted to regulate and restrict fishing within their jurisdiction until December 1982. The facts are, however, that all maritime fishing areas within the United Kingdom's political boundaries come under the jurisdiction of the E.E.C. and that the E.E.C. Fishery resource is a community-shared one. Thus as the Commission proposes to allocate white fish catch quotas among member states, it must also consider how the salmon stocks should be managed and allocated. One important reason why the Trust is so concerned about a future E.E.C. salmon policy is the fact that only three of the nine member states of the E.E.C. are salmon-producing countries, namely, the U.K., Ireland and France. Many of the other member countries have in the past allowed their salmon runs to be destroyed by pollution while Denmark controls the infamous Greenland salmon fishery. It is for these reasons that the Trust feels that its most urgent task is to continue to advise anyone who is connected with the future control of U.K. salmon resources of the special needs of the species.

The Honorary Scientific Advisory Panel

The Trust is particularly fortunate in being advised by a panel of most experienced scientists, all of whom are very well-known in the salmon world. During the year the Chairman, Dr. J.W. Jones, decided to relinquish his post but agreed to remain on the panel. Dr. Jones has not been in good health since his retirement from Liverpool University so that his decision was not unexpected. His position as Chairman has been taken over by Professor R.W. Edwards of the Department of Applied Biology in the University of Wales Institute of Science and Technology, who is also a member of the Trust's Committee of Management. Sir Frederick Russell also indicated during the year that he would like to resign from the Panel; he had given the Trust many years of valued help and advice.

Under its new Chairman the Panel met in July 1980 and agreed that its role should be to complement research funded by other authorities, to act as an independent commentator on official research policy and to be a scientific catalyst in connection with the provision of funds, if available, for research projects connected with salmon. In line with its stated objectives the Panel proceeded to consider the recently published Report of the Joint Freshwater Fisheries Research Advisory Committee, sponsored by the Ministry of Agriculture, Fisheries and Food and the National Water Council. The Panel was generally in agreement with the list of research priorities given in the Report, but it suggested that greater priority should be given to the following studies:

- (a) the effect on salmon of the increasing use of fertilisers, ploughing, etc. in the uplands.
- (b) the evaluation of the nation's salmon fisheries.

The Panel also considered projects with which the Trust was involved to various degrees, such as the Scaliscro sea trout project in the Isle of Lewis, and the proposed Applecross salmon improvement project

in Wester Ross. Both these projects are sponsored by Charitable Trusts - the J.H.M. Mackenzie Charitable Trust and the Applecross Trust respectively, with our own Trust providing the scientific advice through our own friends and advisers, Dr. Graeme Harris of the Welsh Water Authority and Dr. Derek Mills.

Economic Survey by the Portsmouth Polytechnic's Marine Resources Research Unit

This survey which was initiated and partly financed by the Trust was designed to evaluate the economics of angling for salmon in England and Wales. A pilot scheme was carried out in 1976/77 on the River Tamar in Devon, followed by a full-scale study on the same river in 1978. The survey was then extended to the Rivers Wye and Mawddach in Wales and the River Lune in England. The Welsh Water Authority agreed to support the survey on the River Wye by way of a contribution towards the cost of a comprehensive questionnaire survey of anglers. It is hoped that the full report on the survey, which has now been completed, will be made available to the Trust by the end of 1980.

A United Kingdom Economic Survey of Salmon Fisheries

Economic surveys of salmon fishing may be unpopular with many anglers because of the necessity for detailed and sometimes personal information to be submitted on questionnaires. But the need for an evaluation of salmon fisheries in the United Kingdom is considerable. Unlike the Republic of Ireland and Canada which have produced detailed studies of the benefits accruing to each nation from salmon fishing, the United Kingdom can only offer individual river area surveys with confusing results. For instance, in the House of Lords recently a Government Minister indicated that the current economic value of Scottish salmon fisheries was between £20 - £25 m. and yet a study made by the University of Wales Institute of Science and Technology estimated that three Welsh rivers, the Wye, Dee and Clwyd generated as much as £13.9 m. a year from sport fishing alone! Unless we can have a clear statement as to the economic value of our salmon resource it will be extremely difficult for our Government to put up a strong case for its control and conservation in E.E.C. discussions. Failure to produce an evaluation will only favour the Greenland fishermen who will contend that any reduction in their annual salmon catch quota will affect them adversely "socially and economically". During the coming months, and provided funds are made available to it, the Trust hopes to initiate or encourage such economic studies.

Aerial Surveys

Due to the generosity of a member of the Committee of Management, Mr. John Akroyd-Hunt, an aerial survey of the Solway Firth netting stations was carried out by Mr. Akroyd-Hunt's firm on behalf of the

Trust. The photographic record of the sites of the netting should prove to be of great value from an historical or management point of view. The survey also included photographs of the heavily polluted Girvan Burn which has been subjected to much discussion and litigation. The Trust has been permitted to send the photographic evidence of pollution to the National Anglers Council for its information since it is handling the pollution case on behalf of local anglers.

River Alta (Norway) Hydro-Electric Project

During April 1980 the Trust was invited to express its concern at current proposals to construct a hydro-electric power station on the banks of the famous River Alta salmon river. The Trust contacted the Norwegian representative on the International Advisory Group, Advokat Knut Rom, on the matter and obtained the necessary details of the project from him. As a result the Trust formally endorsed the stand taken by the Norwegian Wildlife Fund, of which Advokat Rom is Secretary-General, and by the Norwegian Federation for Nature Conservation, to demand that no decision is taken on the scheme until further comprehensive research is carried out.

Introduction of Pacific Salmon into Atlantic Salmon Areas

In January 1980, the Department of Agriculture and Fisheries for Scotland gave notice of its intention to make an order prohibiting the importation, keeping or release of Coho salmon in Scotland except under licence granted by the Secretary of State and subject to certain conditions. The Department also indicated that it proposed to grant such a licence to Unilever Research. It will be recalled that in December 1976 the Department allowed Unilever Research to import a small quantity (20,000) of Coho salmon eggs for experimental purposes. Salmon conservationists have for many years expressed their concern at the introduction of Coho salmon to any Atlantic salmon waters in case the former reproduce themselves in those waters to the detriment of the Atlantic salmon. It is understood that the new licence to be granted by the Department is to cover the second generation of Coho salmon hatched out at Unilever's Research Station at Findon near Aberdeen. The Trust expressed its dismay to the Department at the decision to issue a new licence to Unilever Research even under the strict conditions which it imposed upon the Company. The Trust believes that the fact that Unilever Research wishes to finance further research into the rearing of Coho salmon may suggest that the Company considers there can be a commercial future for such a species in the United Kingdom. If this was correct, and the research showed that the scheme could be successful from an economic point of view, then pressure might well be put on the Secretary of State to allow the sea farming of Coho salmon in the future. In reply to the Trust, the Department said that the nature and purpose of the Company's research was a matter for Unilever Research but that the Department's licence required strict measures to prevent escapes and forbids transfers from the research premises.

In a paper to the Institute of Fisheries Management's Study Course in November 1979, Yves Harache - Centre Oceanologique de Bretagne - examined the consequences of introducing Coho salmon into rivers in Brittany. He noted that in some instances fish which escaped from a fish farm in Normandy returned to their home river with a fair degree of accuracy, and the adults successfully spawned and produced viable juveniles. He considered, however, that unless large scale releases are made, the Coho is unlikely to establish durable populations. He concluded his paper by stating that much more scientific study was necessary to discover the possible consequences of Coho introduction into French waters.

At a recent conference in London on the World's Fisheries, two Government Directors of Research suggested that consideration might be given to the possibility of introducing the Pacific 'pink' salmon (*Oncorhynchus gorbuscha*) to some rivers in Southern England. This species of salmon has already been introduced into a river in Southern Norway, and it is suggested its interaction with native species is not highly significant.

Capelin and Atlantic Salmon

Dr. Wilfrid Carter has written about the possible relationship between the recent increase in the exploitation of capelin - a member of the smelt family - and the decline in runs of Atlantic salmon in Canada. Capelin comprises an important part of the diet of fish including Atlantic salmon. Dr. Carter has pointed out that after 1971 commercial catches of capelin in the North Atlantic off the coast of Canada increased significantly from 70,800 metric tons in 1972 to 230,319 metric tons in 1977. This was followed, however, by a catch of less than 85,000 metric tons in 1978. The evidence might suggest a collapse of the capelin fishery and consequently a large reduction in the food available to the feeding salmon. It has, however, been reported recently that the Department of Fisheries and Oceans, Canada, has prohibited capelin fishing within the Canadian 200 mile zone. It is believed that this action was taken not so much on behalf of the salmon stocks but out of concern for the falling stocks of cod.

Acid Rain

In his May 1980 pamphlet on the work of the International Atlantic Salmon Foundation, Dr. W.M. Carter reports on a new kind of pollution which is affecting the quality of rivers in North America and Europe. This is 'acid rain' which is produced from the burning of sulphur based fossil fuels and is highly acid. Sterile, lifeless lakes and rivers have already been identified in Nova Scotia and Ontario, while Finland reports that as many as 14,000 lakes may already be biologically dead due to the increased acidity. In Sweden it is understood that the acid sensitive arctic char has been wiped out in many lakes and experiments with the liming of lakes so affected by 'acid rain' have been undertaken to improve the quality of the waters.

The International Atlantic Salmon Foundation are sponsoring an International Acid Rain Conference in Maine, U.S.A. in November 1980 in the hope that delegates may be able to indicate specific actions that should be taken now to minimise this new and dangerous threat to salmon stocks.

In Europe a convention on Long-Range Transboundary Air Pollution was adopted by the E.E.C. Member Countries at the end of 1979 and consideration is now being given to its implementation.

National Reports

The following notes are based on reports received by the Trust during the year.

Canada

The catch of large salmon and grilse for the Maritime Provinces increased by 16% in 1979 to 33,356 fish. However the significant feature of the statistics was the large decrease - amounting to 45% - of the large bright salmon, due, in the opinion of biologists, to a high rate of mortality at sea after the smolts of 1977 had left their native rivers. A further feature of the season was the very large increase in the bright grilse catch over the previous year. The 1979 catch of bright large salmon and grilse in New Brunswick was 17,275 compared with 35,104 caught as recently as 1977.

Commenting on the 1979 results, Dr. W.M. Carter has written:

"Such a sudden sharp decrease cannot be attributed solely to poaching, pollution, Indian fisheries or the incidental catch of salmon in cod, mackerel and herring nets.

I remain convinced that a massive shift in food populations occurred in the sea, due to climatic changes and overfishing of small food fishes, such as capelin.

On the positive side of the ledger, the catch of grilse was up sharply, as much as 85% over 1978. There is an apparent relationship between abundance of grilse in one year and large salmon the following. To support this hypothesis, early reports of spring runs in the U.K. and North America indicate a very good improvement - the best in many years.

One thing is very clear; we still don't understand many aspects of the salmon's lifecycle, and we don't have sufficiently reliable data to accurately predict population fluctuations."

France

Dr. Richard Vibert, President of the Association Internationale de

Defense du Sammon Atlantic, has provided the following catch figures of Atlantic salmon in France for the period 1975 - 1979.

| | <u>Rod Catch</u> (No. of fish) | <u>Total French Catch</u> (No. of fish) |
|------|-----------------------------------|--|
| 1975 | 3,917 | 7,382 |
| 1976 | 3,314 | 5,266 |
| 1977 | 1,645 | 1,988 |
| 1978 | 1,860 | 2,395 |
| 1979 | 1,321 | 1,990 |

Dr. Vibert estimates that the 1980 run will show a considerable increase on the totals for the previous three years, so that it would seem that in France as well as in the United Kingdom, runs of salmon have improved.

Iceland

Iceland catches totalled 66,000 fish in 1979 down from a record-breaking catch of 80,500 in 1978. About 50% of Iceland salmon are taken by anglers and 50% by nets, which may come as somewhat of a surprise to those who thought there was no netting allowed in Iceland.

Norway

In April 1980, the Trust was advised that in spite of the introduction of new regulations on drift netting in Norway prior to the 1979 season, there was a significant increase in the catch. The Trust accordingly wrote to the Norwegian Department of Environmental Protection and pointed out that it considers drift netting to be a most unsatisfactory method of fishing. In reply the Department stated that since 1979 drift netting had been regulated and a licensing procedure introduced; the number of boats allowed to fish for salmon was reduced from 1800 to 700 and the season shortened by one month. It seems as if the 1979 increase in the catch was due more to better control on the reporting of the catches made by each boat rather than an increase in real terms. Surprisingly the Norwegian authorities have prohibited net fishing in the rivers but allowed the continuation of an extensive drift net fishery (1979 catch: 1,050 tons) even though it accepts that this form of netting is unsatisfactory from a biological point of view. But the Department pointed out that biological considerations cannot always prevail in such issues and that social and economic factors must also be taken into account. There is clearly some similarity here between the Norwegian and Irish drift net fisheries and their position in the management of the salmon stocks.

As in Scotland the production of cage-reared salmon is becoming an important aspect of the salmon scene. In 1979 4,870 boxes of farmed salmon were delivered to Billingsgate Market, London, compared with 66 the previous year.

Republic of Ireland

Dr. A.E.J. Went, a member of the International Advisory Group, and former Chief Scientific Adviser to the Department of Fisheries and Forestry, Ireland, has submitted the following brief report on the salmon fisheries in his country:

"New legislation has recently been enacted in the Irish Parliament by which re-organisation of the salmon conservation organisations will take place. The 17 Boards of Fishery Conservators will be replaced in the near future by a Central Fisheries Authority and seven Regional Authorities, with powers to undertake conservation and development of salmon stocks, together with those of other freshwater fishes.

Considerable progress has already been made to implement the new legislation and the appointment of Chief Executives for the Central Authority and the Regional Authorities is imminent.

In 1979 the Minister for Fisheries and Forestry put into force new restrictions on salmon fishing, including shortening of the fishing season by both commercial methods and angling, extension of the weekly close time for commercial fishing by one day (to 3 days instead of 2) and placing a limitation of 30 meshes on the depth of drift nets. These restrictions have been continued for 1980, the only difference being that instead of Monday being the extra day in the weekly close time it is now Friday. This change was made to facilitate the marketing of the catches and for no other reason.

Spring salmon runs were better in the beginning of 1980 than for many years but at the time of writing this note the grilse runs are only of moderate size, but it should be pointed out that the peak in the runs of grilse has varied greatly in recent years so it is too early to judge the strength of grilse runs at this stage.

The official returns of the salmon catch in 1979 are not yet available but estimates put the total figure (net and rod) at 1,038 tonnes, compared with 1,179 tonnes for 1978.

A prominent feature of the June 1980 season was the low price received by fishermen for their catches attributable, it is thought, to the large quantities of cage reared salmon and Canadian salmon imported into the E.E.C. area. An indication of the low price was the retail price for whole grilse, i.e. £1.85 - £1.95 per pound, or about £4 a Kilo, compared with much higher figures for at least the previous three years. "

Scotland

Mr. J.R.W. Stansfeld, Chairman of the International Advisory Group

and a member of the Trust's Council, has reported that the 1980 season up to July showed a sharp improvement in the runs of salmon. He believes that the bad effects of the drought summers of 1974 - 76 are disappearing. Catches of salmon, grilse and sea trout in Scotland in 1978 and 1979 by all methods were as follows - although the 1979 figures are only provisional.

| | | <u>Numbers of fish caught</u> | | | |
|-----------|---------|-------------------------------|--------------|---------------------------|----------------|
| | | <u>1978</u> | | <u>1979 (Provisional)</u> | |
| Salmon | 160,886 | @ | 1,719,058 lb | 105,166 | @ 1,160,296 lb |
| Grilse | 192,973 | @ | 1,124,676 lb | 152,195 | @ 858,930 lb |
| Sea Trout | 121,646 | @ | 274,411 lb | 130,938 | @ 292,066 lb |

Mr. Stansfeld is optimistic about the future, and he anticipates improved runs for the next three years. He considers the only cloud on the horizon to come from external factors which are outside the control of Scottish fishery authorities - he defines these factors as "the parasitic fisheries operated in Greenland and Northumberland, where our carefully nurtured salmon harvest is intercepted and creamed off before it returns to our shores".

The production of farmed salmon, now assuming an increased importance in the salmon processing sphere, was 520 tons in Scotland in 1979. Following a planned increase in the hatchery building programme the production of farmed salmon should increase rapidly from 1982.

Wales

It is unfortunate that statistics of salmon catches in England and Wales take a considerable time to compile and as a result the figures for 1979 are not available. To some extent, particularly in Wales, the delay in publishing the data is due to the desire of the Water Authorities to produce as accurate information as possible. This involves, as far as rod catches are concerned, the issue of Licences to which the required return of catch is affixed, and a reminder system in respect of those anglers who do not voluntarily submit returns at the end of each season. There is, however, one exception and that is the River Wye where the owners and fishermen have built up a most commendable reputation for submitting prompt returns of catch to their well-respected Fisheries Officer, Mr. E.M. Staite. The result is that the River Wye figures are available in the middle of each year following a particular season.

Mr. Staite's report for 1979 is an interesting and comprehensive document containing all the information about the runs of salmon in to the River Wye that a Fishery Authority must have available if it is to manage the Fishery efficiently. The details for the 1979 season are as follows:

- (a) The 1979 catch by rods was 2,135 fish at an average of 11.73 lb. per fish compared with a catch of 5,050 fish averaging 13.17 lb. in the previous year. As is pointed out in the report, there

was a poor catch of the larger salmon, but the eventual total was made better than it might have been by the arrival of some late grilse.

- (b) The nets operated by the Wye Division of the Water Authority caught 248 salmon and grilse compared with 865 the previous year.
- (c) The total rod and net catch of fish weighing less than 7 lb. was 708 - nearly double the figure for 1978 (365) but on the other hand the combined catch of fish weighing more than 7 lb. was 1768 fish compared with 5,620 for the previous year.

Publications

The Coastal Movements of Returning Atlantic Salmon. Scottish Fisheries Research Report No. 1S.1979. A.D. Hawkins, G.G. Urquhart, W.M. Shearer

This most interesting paper describes the movements of salmon on their return to their home rivers on the East Coast of Scotland. Each fish used in the experiment was tagged with an acoustic transmitter and released into the sea. Their subsequent movements were monitored by means of a hydrophone receiver mounted on a boat which enabled many of the fish to be followed into a river. Messrs. Jos. Johnson & Sons, Ltd., Montrose, facilitated the experiment by catching the fish used in the experiment. Very little work of this nature has ever been done before in the United Kingdom so that it was of great importance. Some of the conclusions drawn from the experiment were:-

- (1) Salmon do not appear to migrate by passive drift with tidal currents - their speed often exceeded the speed of the current.
- (2) Movements of the fish along the Scottish east coast often seemed to be quite strongly directional indicating that the fish do not find their native rivers largely by random wandering.
- (3) Individual salmon often avoided capture by bag and stake nets placed along the coast. In some instances salmon negotiated gaps in the nets - such as those between the leaders and the cleeks.
- (4) While in the sea, the fish moved with the tide, but on reaching the river mouth the fish reversed the procedure and stemmed the freshwater current.

Annual Report of the Salmon Research Trust of Ireland Inc. 1979

Dr. D.J. Piggins' work for the Salmon Research Trust of Ireland is, of course, well known throughout the North Atlantic, so that

the Annual Reports of this Trust always make excellent and interesting reading. The report for 1979 showed that the restrictions on all forms of fishing imposed by the Government of the Republic of Ireland benefited the returns of grilse from reared smolts, and Dr. A.E.J. Went, the Chairman of the Trust, remarks in the Foreword that for the first time since 1975 the overall survival of spawning stock to adult return at 2.03 - 2.37 grilse spawner to grilse adult was adequate to maintain a self-replenishing stock. Included in the many and varied results obtained at the Trust's Centre in 1979 is a report on the exploitation rates by angling during the period 1970 - 1979. The figures shown vary from 24% to 0% and it is noted that the 1979 figures were affected by the shortened angling season.

The Management of Forest Streams
Forestry Commission Leaflet No. 78
H.M.S.O. 1980

During the year Mr. Neil Graesser, Chairman of the Association of Scottish District Salmon Fishery Boards and a member of the Trust's Committee of Management, highlighted the damage that could be caused to streams and the salmon populations in them by increased land usage. It was therefore most fortunate that the Trust's well respected adviser, Dr. D.H. Mills, was invited by the Forestry Commission to write this pamphlet, which contains a wealth of information which will be of great use to Forest owners in particular. Well illustrated, the leaflet deals in turn with the needs of fish, bank protection and stream improvement, in addition to many other subjects, so that it must have a very wide appeal to anyone who is responsible for the running of a fishery.

Angling Success for Atlantic Salmon in the
River Wye in relation to Effort and River
Flows. Alun S. Gee - UWIST
Journal of the Institute of Fisheries
Management 11 No. 3 (1980)

This report is the latest in a series which tries to measure rod effort on a salmon river. Too often the managers of a fishery area have to contend with only basic catches per season or month and are unable to relate these figures to either conditions or effort. This new study notes that the River Wye rod catch represents about 25% of the total angling catch for England and Wales and that angling pressure on the river is increasing. Some of the conclusions reached were that firstly there appeared to be no clear relationship between water temperature and angling success, although fish were generally caught during temperatures in the range 5.5 - 15.6^o C. Secondly in the season that the study took place angling success was not related to the distance from the estuary but, as can be imagined, benefited from frequent spates occurring in the river. Thirdly the average catch per hour on the ten fisheries studied was a mean of 0.039 which compared with a figure of 0.025 - 0.053 for six other Welsh Rivers in 1968 and 0.03 - 0.05 in the Little Main Ristigouche River,

Canada, in 1976. These figures are low, however, compared with results obtained from the famous Miramichi system in Canada.

Improvement of Spring Capture and Holding
Conditions of Adult Salmon for Artificial
Reproduction. Delegation Regionale du Conseil
Superieur de la Peche - Clermont - Ferrand

Three French biologists - R. Cuinat, P. Bomassi and A. Carrier have reported on experiments which they carried out in the upper reaches of the Allier River to improve the capture and holding of adult spring salmon for later artificial reproduction. At the commencement of the project mortalities among the salmon in the first six weeks following capture were high - 80 - 100%, but in more recent years these were reduced to 15% in 1978 and 7% in 1979. In brief the improvement in the holding of the salmon was due to:

- (a) the progress in equipment and in techniques of capture, handling and transport of salmon, to minimise fatigue, injury or stress;
- (b) holding in very large (8000 m^2) and deep (2 to 4 m) pond in which water inflow is about 100 l/sec and maximum water temperature is 18°C .

