

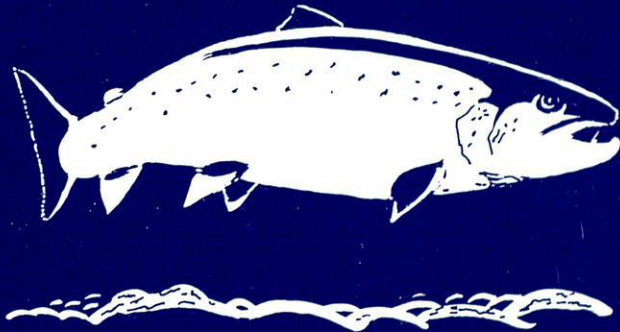


ATLANTIC SALMON TRUST

PROGRESS REPORT

(including Audited Accounts)

December 1993



The Atlantic Salmon Trust
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J&B
RARE

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K. Whelan, B.Sc., Ph.D. (Salmon Research Agency of Ireland, Inc.)
Professor Noel P. Wilkins, (Department of Zoology, National University of Ireland)

Observers: M. Aprahamian, B.Sc., Ph.D. (National Rivers Authority)
A representative from the Scottish Office Agriculture
and Fisheries Department
E. C. E. Potter, B.A., M.A.
(Ministry of Agriculture and Fisheries)

INTERNATIONAL CONSERVATION ORGANISATIONS WITH WHICH THE TRUST IS IN CONTACT

France: Association Internationale de Defense du Saumon Atlantique
Belgium: Belgian Anglers Club
Spain: Asturian Fishing Association of Oviedo
Germany: Lachs- und Meerforellen-Sozietat
U.S.A.: Restoration of Atlantic Salmon in America Inc.
Canada and
U.S.A.: Atlantic Salmon Federation
Ireland: Federation of Irish Salmon & Sea Trout Anglers

Registered Charity No. 252742

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CHAIRMAN'S FOREWORD

I am delighted to welcome the following new members to the Council of Management - Colonel Bill Bewsher, Mr. Gordon Bielby, Mrs. Margit Brooks, Major General John Hopkinson, Mr. Christopher Robinson, Mr. Andrew Wallace and Dr. Ken Whelan.

All of them were elected at the A.G.M. held at Fishmongers' Hall on November 30th at which our President, The Duke of Wellington, took the chair. They are all very committed and influential to the salmon world and will make an important contribution to the work of the Trust. I would particularly like to welcome those two new members from other countries - Margit Brooks from Norway and Ken Whelan from Ireland. At the same time we said farewell and paid generous tribute to Mrs. Jean Cormack, Mr. Edward Davies and Lord Marnoch, who were retiring.

The affairs of the Trust are in good shape and I am sure all our supporters can take comfort from the accounts and the high regard in which our Director, Deputy Director and staff are held.

The two main issues which I must mention in this New Year letter to you are of course the buyout of the Greenland and Faroese commercial fisheries and our meeting with Gillian Shephard.

Orri Vigfusson, who is a member of our Council of Management, attended our A.G.M., and you will find elsewhere in this report full details of the up to date position.

During the year I was appointed Chairman of N.A.S.F.(UK), the organisation which is raising the funds in the United Kingdom to support the initiative. I should emphasise that this fundraising role is quite separate and distinct from the charitable work of the A.S.T. Nevertheless the Trust has a great interest in the potential increase in returning multi-sea winter fish.

This was the point I made to the Minister of Agriculture and Fisheries when, accompanied by Lord Moran, Sir Cranley Onslow, Robert Clerk, Tom Barnes and our Director, I met with her and officials from M.A.F.F. on November 8th. We reviewed the whole history of the North East drift nets and rehearsed all the well known arguments for an early end to this interceptory and damaging fishery. The new factor however is that the multi-sea winter/spring fish escaping from the Greenland and Faroese fisheries as a result of the closure agreements should not be caught off the Northumbrian and Yorkshire coasts by drift netmen who have contributed nothing towards these agreements and done nothing for salmon conservation. We made this point most forcibly to the Minister, who listened to us with keen attention and has promised to give careful consideration to all we said.

With best wishes to all supporters of the Trust for a happy New Year.

Sir David Nickson

DIRECTOR'S REPORT

How quickly the year has passed.

In fishing terms it has been a funny year. Certainly in Scotland the weather pattern has been unusual with the east being wet and the west being dry. This is an oversimplification as the rainfall has been very localised. The angling press has many stories of masses of fish in the rivers but they would not take! Overall, with the exception of the northwest and west of Scotland, there does appear to be a good spawning stock in most rivers.

There is a great deal in the Progress Report about the North Atlantic Salmon Fund and the buyout of the Greenland and Faroese Quotas. Please read it and support the public appeal if you can.

There is considerable concern at the collapse of sea trout stocks on the northwest and west coast of Scotland. Salmon too seem to have been wiped out in some rivers. The Trust, in conjunction with the Scottish Office Freshwater Fisheries Laboratory and the Association of Scottish District Salmon Fishery Boards, held a conference near Inverness in November which was very well attended. If it did nothing else, this conference focused attention on the problems facing the NW and W of Scotland. Fingers are pointed at the fish farming industry but it looks more likely that a combination of factors are to blame. The aquaculture industry has done a very great deal for Scotland's rural economy. It is with a spirit of cooperation that the future lies. The Trust has many times said that the industry has been allowed to grow with few controls and the wild salmon is without doubt suffering. However, all is not bad, as I pointed out in our last Progress Report, the price of salmon is so low that the economic case for commercial netting is almost unsustainable.

I feel sure that the way ahead is for collaborative projects in order to raise the necessary funds for research. The grouping of rivers and/or District Fishery Boards in Scotland and similar grouping of rivers in England and Wales may be a solution. It is understood that the NRA will be making it easier for collaborative ventures to be set up in future. There are articles in the Progress Report from the West Galloway Fisheries Trust and the Taw Owners Association.

The Fishing Auction is taking place as usual with some new lots this year. If any of you want a catalogue please ring the office. Our subscribers do not automatically receive a catalogue.

Brenda Ward has relinquished the post of my secretary and has been replaced by Jenny Sample. We wish Brenda all good fortune and thank her very much for all her efforts for the Trust over nearly four years. Jenny joined just before the auction catalogue was finalised and it is greatly to her credit that over 4,000 catalogues were sent out on time before Christmas.

I must apologise for the lateness of this Progress Report, but I hope you will find it of interest.

All good fortune to you all in 1994.

D. J. Mackenzie

STOP PRESS

I am sure you will all be delighted to have seen that our Chairman, Sir David Nickson, was made a life peer in the New Years' Honours List.

* * * *

NORTH ATLANTIC SALMON FUND (UK)

(by Jeremy Read, Deputy Director)

The most significant news in 1993 was that of the signing in July of an agreement with the Greenland fishermen, as a result of which all commercial salmon netting in Greenland waters has ceased. The agreement runs for two years, with the option of renewal for a further three, and it had very strong North American backing, including a direct contribution of \$50,000 from the State Department, and a grant from the semi-public National Fish and Wildlife Foundation to match funds raised by the Atlantic Salmon Federation. The original Faroes agreement, signed in 1991, expires this year, and at the time of writing Orri Vigfusson is engaged in negotiations for its renewal. With these two agreements in place, there is no longer any legal commercial fishing for salmon on the high seas in the North Atlantic.

This opened the way for the start of fund-raising in the United Kingdom. This was overdue, since we have had the benefit of the closure of the Faroes fishery for three years without contributing to the cost, but it was the addition of the Greenland deal that allowed the full case to be made for financial support. This case was developed from a study made by Dr. David Solomon, who estimated the numbers of fish of UK origin which would be spared as a result of the two buyouts, and compared the cost of each extra returning salmon - about £5 per fish - with the far greater cost of stocking hatchery-reared fish to produce the same numbers. Moreover, hatcheries tend to produce grilse, and fish returning from Greenland and the Faroes are multi sea winter fish. He described the closing of the high sea fisheries as "a most effective fishery management action".

The North Atlantic Salmon Fund (UK) was formally incorporated in August, with Sir David Nickson, acting in his private capacity, as Chairman. I serve as its Secretary, and David Houldsworth, of Brodies WS, is Treasurer and legal adviser. The Association of District Salmon Fishery Boards is represented by Robert Clerk, who is Vice-Chairman of the Fund, and the Chairmen of the major Boards are members of the Committee, which also has representatives of interests in England and Wales.

Because it has not yet been possible to reach a permanent buyout agreement, and there is therefore a need at this stage to make annual compensation payments to the Greenland and Faroese fishermen, the basic strategy of the Fund is to collect the bulk of its contributions on an annual basis. Government support is not available, and so the appeal is going primarily to

the owners of fishings, who will stand to benefit from the increased runs that are expected, particularly because runs of spring fish should improve. National contributions to Orri Vigfusson's international fund, which handles the overall collection and transmission of money, have been based on estimates of the proportions of stocks originating from the respective countries. For example, Norway has paid over half of the Faroese cost. The current base on which the UK contribution is being set is a figure of 16%, but there is provision in the articles of the international fund for these proportions to be revised as knowledge of stock origins is refined. Our initial target is about £180,000 a year, which should reduce once the backlog of our contribution in respect of the Faroes has been paid off.

Working again on the estimated origin of the returning fish, about £150,000 of this has been allocated to Scotland, with the remainder to come from England, Wales and Northern Ireland. Since the Scottish contribution is so significant, this is where the appeal has begun, and Sir David Nickson has written to the Chairmen of all District Fishery Boards, and to representative owners in areas where there are no Boards. Based on the Scottish Office catch figures for the last five years, targets have been set for each of the districts, and Boards have been invited to meet these, which can be done through the annual levy on proprietors. Counsel's opinion has confirmed that this is permissible, if a Board is convinced of the value of the buyouts for the enhancement of stocks. Alternatively, Boards which approve the principle may elect to meet their target by other means. Incidentally, the appeal has been given the endorsement of the Association of Scottish District Salmon Fishery Boards, the Salmon and Trout Association, the Scottish Anglers' National Association and the Salmon Net Fishing Association of Scotland and the Atlantic Salmon Conservation Trust (Scotland), as well as that of the Atlantic Salmon Trust itself. Sir David stressed both the value of the buyouts in increasing the number of returning salmon by over 20,000 a year, and the moral commitment for the United Kingdom to pay its share of the cost of this initiative, launched by Orri Vigfusson with such conviction and personal commitment, and supported up to now only by other countries and by personal donations.

Scottish District Boards meet at different times in the year, but an encouraging number of contributions have already been made, and many indications of enthusiasm for the principle of the appeal give confidence for its success. The next stage is to approach owners in England and Wales, and here the procedure has to be different. Because there is no equivalent to the system of District Salmon Fishery Boards, the appeal will have to go out to individual owners, and this is taking longer to prepare. Proprietors will not, therefore, receive a request for support until early next year. It is hoped that they, too, will agree the need to grasp this chance to recover the runs lost since the development of the high seas fisheries and to build up the spawning stocks of large salmon as well as increasing catches.

There have already been a number of enquiries about private contributions to the Fund, and the Committee is sure that individual fishermen will also wish to play their part, particularly in getting this venture under way. A third source of funding is therefore being sought. A one-off appeal is being made, mainly through the medium of the press, for individual donations. These will be invested in order to establish funds to top up the succeeding annual payments. Those who wish to join in this effort are invited to send a contribution, which will be acknowledged, either to:

Miles Larby
Finlayson Hughes
45 Church Street
Inverness IV1 1DR

or to:

Michael Martin
C. Hoare & Co (Bankers)
Remittances Section
37 Fleet Street
London EC4P 4DQ

Cheques should be made out to "NASF (UK)". Further information on supporting the Fund can be obtained from me; my telephone number is (0730) 823777.

* * *

COUNTRY LANDOWNERS' ASSOCIATION
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ANGLING REVIEW LAUNCHED

The National Rivers Authority has commissioned a major review to assess the current status of angling in England and Wales.

The review has been commissioned in order to obtain a more accurate picture of the number and type of existing licence holders as well as trends in angling and angling expenditure. Results of the review will be available in the summer of 1994.

Estimates of the number of anglers vary widely according to previously published reports. This new survey undertaken by the independent market research company NOP (the company that carried out the angler surveys of 1970 and 1980) will ask more comprehensive questions than previously. These questions will be designed to provide the most accurate picture ever obtained of the number of anglers and angling frequency.

The review, which will predict future trends in the number and type of people involved in the sport of angling, will allow the NRA to forecast the likely rod licence sales over the next decade. The future level of charge can then be planned in line with these predictions.

Commenting on the review, David Jordan, NRA Head of Fisheries, said :

"Previously surveys have been invaluable in providing information to assist forward planning and policy development, but these are now out of date and better information is required. An understanding of changing trends in angling, angler numbers and their distribution, will be of immense value not only to the NRA but also to many other organisations.

"For our own purposes, one of the most important questions we hope to answer is, how many rod licences can we expect to sell in the future and what impact will this then have on the expenditure on fisheries work?"

"We also want to ensure that those taking part in the sport of angling and enjoying the benefits of fisheries work carried out by the NRA are contributing towards the cost of maintaining it."

The purpose of the review is to assess:

- * the number of migratory salmon, non-migratory trout and coarse anglers in England and Wales, and the number of those required to hold the different types of NRA rod licence within the sample year;
- * the distribution of anglers throughout England and Wales and between NRA regions;
- * the numbers of anglers by age, gender and social class and the number of disabled anglers participating in the sport;
- * the amount of money which anglers spend directly each year on angling, to include tackle, bait, permits, licences and travel costs;

- * angling habits by determining the number of anglers who are members of clubs, the frequency of fishing and the type of waters fished.

A report will be produced from the findings of the review.

* * * *

SALMON ANGLING - RUSSIAN STYLE

(Reproduced by kind permission of The Institute of Fisheries Management,
Scottish Branch)

Andy Walker recently was fortunate enough to enjoy an angling holiday in the Kola Peninsula of the former USSR. Despite the very basic conditions and losing his reels, and lifetime collection of flies, not to mention the all-important mosquito headnet, Andy seemed to have enjoyed the experience - certainly if his developing a taste for neat Russian Vodka is anything to go by! The following is Andy's account of the trip.

We crouched low and watched as the helicopter thrashed its' way off the ground and swept across the rolling tundra hills, leaving us about a hundred metres from three tubular metal portacabins, three small wooden sheds and a tent. The relief from the violent downdraught changed to astonishment and then to sheer panic. Thousands of mosquitos homed in like timeshare touts on Tenerife. We ran for our lives. It was mid-July and my friend Reinhard Brehmer from Vienna had invited me to join a small group of Austrians fishing for salmon in the River Olenka in the northern Kola Peninsula, about an hours flight by "Lada" helicopter from Murmansk. We had little information about the river but had read of the great catches made by other angling parties who had fished other Kola rivers. The camp which would be our base for the week had just been established and we had been preceded by only two other groups who were reported to have had mixed results.

The remote Kola Peninsula rivers are rapidly being opened up to angling tourists. The region used to be off-limits for security reasons, but now the financial value of the salmon within its' many salmon rivers has been recognised and foreign anglers are welcomed for their spending power. Increasingly, anglers from Europe and North America are scouring the world for high quality sport and tour companies compete to provide unusual package holidays to "pristine" fishing opportunities. My trip was organised by Husky Tours of Vienna. I joined the others there after two fabulous days fishing upstream nymph and dry fly for trout and grayling in the idyllic scenery of the beautiful Austrian limestone rivers Salza and Schwarza. In anticipation of this and with thoughts of varied fishing in the Kola, I had packed all my best reels, lines etc., and a litemes collection of flies. Sadly for me, these disappeared somewhere between Vienna and the luggage carousel at Moscow Airport. My rods came through successfully, which was something of a triumph I suppose. Also "missing in action" were my sleeping bag and, horror beyond horrors, my mosquito headnet. I was able to borrow some fishing gear but nobody would part with their headnet - understandable I suppose.

Having stowed our baggage, we dashed across to the communal cabin where we would eat, meeting there the half-dozen Russian staff who would look after us. After a welcoming speech from the camp manager, via an interpreter, we met the Inspector - a surly character whose job it was to see that we followed the fishery rules. He wore a handgun for extra authority. I had visions of forming an escape committee. The rules allowed only single barbless hooks whatever the method. However we had already decided to fish fly-only. Although catch and release was in force, each angler was entitled to take one salmon during the week. This was good news since we had been warned that the food might be basic to say the least.

I, of course, was two languages away from the game, since the interpreter translated only into German. We were given our fishing permits eventually and with some reluctance, it seemed to me. Within an hour of starting to fish mine was inspected and signed by the Inspector, who, by the way, had an assistant. I gathered from the others that we were not supposed to wander off without our fishing guide yet it was never clear why. I decided this rule would be ignored. With daylight for twenty four hours each day and over seventeen kilometres of river to cover I intended to fish where and when I wanted to.

Our camp beside the Olenka was about one kilometre below a major impassable waterfall. For stock conservation reasons, it was stated, fishing was not allowed for five hundred metres below these falls but both banks could be fished from this point down to the sea. The river was about a hundred metres wide in places with an interesting mix of turbulent rapids and streamy pools. With care and the added security of a buoyancy jacket, I was able to wade across with chestwaders. The water temperature (12-17°C) was comfortable for wading and suitable for light fly tackle to be used.

We soon found however, that there was little sign of fish, although we were told they were everywhere. Perhaps the main run had not long begun. Our concerns about catching so many that we would be bored proved laughable and we had to fish long and hard to hook any. Most were lost during the fight, perhaps due to the single barbless hooks. Not that this mattered particularly, since we were putting them back anyway. The locals thought our "state of the art" carbon fishing rods were much too light and whippy and we found out why later. After playing a fish of about 4 kilos for five minutes or so, Reinhard was astonished when the Inspector wrenched his expensive rod from him, put it over his shoulder and dragged the fish ashore. Later he attempted to cast by holding the rod with both hands below the reel, so that the point struck the ground on the backcast. Apparently Reinhard went very pale.

After trying various outfits, usually unbalanced because of the need to borrow tackle, I settled for a four piece trout rod with no. 7 intermediate line, which was ideal since most fish caught were grilse of 2-4 kilos. We were told that there were some very much larger fish in excess of 20 kilos around but we saw none. However this was quite possible since some very big salmon have been taken in other Kola rivers. The biggest fish which I encountered jumped several times in the course of a long battle and probably weighed about 8 or 9 kilos. All of the fish were very powerful fighters giving great sport.

Down near the sea and just above a gorge area I met a jovial, heavily bearded, local angler sitting on a large rock. He was fishing with a very long powerful rod. Using what appeared

to be very thick monofilament line and a simple reel, he flailed into the river a heavily weighted metal and feather double hooked lure, trotted it down one rod length, pulled it out and then whacked it back into the water again. I was astonished to see him drag out a salmon, taken fairly in the mouth, kill it and lay it alongside another two. Was he a poacher or were the rules simply invented for our benefit?

The river was certainly being netted, for one day I found a gillnet tangled around a rock. Also I found large stones beside several pools with either heavy cord attached or enclosed in pouches of netting. I assume these stones were used as anchors for a net. So much for pristine fishing!

Overall though, the facilities were adequate, although basic and the camp staff did their best with the limited resources. There was a "frontier" atmosphere to the place. I made new friends and we had a lot of laughs, drank a few beers and even developed a taste for neat Russian vodka. We soon accepted that escape was impractical and got on with enjoying ourselves.

I will always remember the sight and the sounds of the great herds of wild reindeer which came down to the river most days; also the abundance of alpine flowers among the blueberry, cloudberry and scrub birch. I saw golden plover, sandpiper, wheatear, ravens and the occasional buzzard. Terns worked the river up to the camp while forked tailed Arctic skuas could be seen nearer the sea. I walked the hills in the area and found many small lochs with charr and trout. The scenery was very reminiscent of fishing the Gruinard rivers in Wester Ross.

On the down side, we had to have our permits "inspected" and signed every day and were made to wait like naughty schoolboys to get them back. The mosquitos were unbelievable at first but became less troublesome with windier weather, although they were never far away. Later in the week Andreas Luks, one of our party, broke a rib in a fall but soldiered on. Thick fog greeted the day of our departure and grounded the helicopter. Fortunately it did arrive several hours late and we were able to get another flight out of Murmansk military airport. Goodness knows what would have happened had we missed that. Murmansk was indescribable and must be about the end of the world. Moscow was like a wet Sunday in Cowdenbeath, only ten times worse.

Would I go back? I suppose I might but then I have a very short and selective memory. Would I recommend it to anyone else? Yes, but not to my friends.

ACID RAIN AND ITS IMPACT: THE CRITICAL LOADS DEBATE

(by Dr. Alistair Stephen, West Galloway Fisheries Trust)

The following article reports on a one day conference organised by University College London's Environmental Change Research Centre in September 1993, and was entitled "Acid Rain and its Impact: The Critical Loads Debate". As a field biologist who did rather badly at school chemistry I am unsure whether I am fully qualified to produce an executive summary of the day's proceedings for the AST. However, what follows is a distillation of the many papers presented on this complicated, highly contentious issue.

The buzz words in the field of acid rain investigations at present are critical loads. The definition of a critical load for a particular environment - pollutant combination is defined as the highest deposition load that the environment can withstand without long term damage occurring. The Critical Load Approach to assessing pollution can be applied to look at the effects of different pollutants on a range of environment parameters. In this way policy can be linked to environmental effects.

It is worth, at this stage, putting the critical load concept into context by looking briefly at the political background to the subject;

Thirty or forty years ago initiatives taken in North America to reduce ground level concentrations of air pollutants, perceived largely in terms of smoke/dust/particles and SO_2 , were targeted primarily at human health and secondarily at discolouration of buildings. Air pollution control was also perceived as a national problem and of little concern to other countries. However, in the early 1970's, claims of acid lakes and dying fish in Scandinavia and Canada raised the possibility of the long range transport of air pollutants from one country affecting the environment of another.

In Europe, these claims led to the setting up of a multi-national NW Europe Programme on the monitoring of SO_2 and SO_4 under the aegis of the OECD to see whether long range transport of air pollutants could be substantiated. The UK was a somewhat reluctant and sceptical member of the programme. However, three years' results from the programme proved beyond doubt the existence of long range transport and produced some quantification of the amounts of SO_2 emissions from one country falling on another. This work led to the production of the first so called international "blame matrix" in which the UK, for example, was estimated to contribute 14-18% (depending on the year) of the total SO_4 deposition to Norway (the figure for SO_2 being considerably higher).

The production of the blame matrix also led to the realisation that SO_2 was a pan-European problem and in turn to the setting up of a European SO_2/SO_4 monitoring network within the European Monitoring and Evaluation Programme (EMEP), closely followed by the 1979 agreement within the United Nations Economic Commission for Europe (UNECE) of a Convention on Long Range Transboundary Air Pollution (LRTAP).

The UK did not sign the first protocol prepared by UNECE LRTAP, the so called 30% Club which was the 1985 agreement on reductions of SO_2 . It soon became clear that Nitrogen

Oxides (NO_x) made a contribution to acidification, and in 1988 the Protocol on the Reduction of Nitrogen Oxides was signed by the UK. This was seen as an interim agreement providing for a stand still on NO_x emissions by 1994 at their 1987 levels and it was envisaged that there would be a second step in 1994. It was agreed that this second step would take into account the effects of emissions on the environment, and as a result the NO_x protocol contained first references to the Critical Loads Approach. In 1990, the executive body of the convention decided to commence work on a second stage of the Sulphur Protocol and this also would be primarily an effects-based measure. Since then, there has been considerable activity inside the UNECE to develop the Critical Loads Approach for Sulphur for use in regulations on the second Sulphur protocol.

It has been recognised that the aim of achieving deposition levels at or below critical loads throughout Europe is a long term one. Many parts of Europe are highly sensitive to acidic deposition and to protect these areas, emission reductions beyond what is currently feasible will be required. As an interim measure, it was therefore decided that the reference emission abatement scenario for negotiations would be closing the gap between current deposition and the deposition required to respect critical loads by 60%. The Task Force on Integrated Assessment Models was then asked to consider how this objective could be translated into emission reductions for the different parties to the Convention. In the case of the UK, it concluded that depending upon which of the available Integrated Assessment Models was employed, a national emission reduction of between 76% and 88% from 1980 levels would be required.

For the UK government, the Critical Loads Approach has seemed an attractive route as it is consistent with its aims of ensuring that measures on emissions of air pollutants are evaluated in the light of the effects they have on the environment. However, in the case of acid rain, the acceptance by policy makers and industry that destruction of ecosystems is a consequence of acid deposition has taken a long time to take root. For example, it was not until the 1990 final report of the Royal Society's Surface Water Acidification Programme (SWAP) that the extent of acid damage was fully appreciated by industry.

This 'head in the sand' approach by the UK government, led to conflict and difficulties with other European countries. Negotiations in the European Community on measures to limit transboundary air pollution, and EC large combustion plant directives, were delayed by the "difficulty of policy development" in the UK.

The CEEB eventually accepted that damage was being caused by emissions from power stations and agreed to install flue gas desulphurisation equipment at selected power stations. This did not satisfy many EC partners and after much argument and discussion the UK government eventually signed a new sulphur Directive, with provision for a 60% cut in sulphur emissions from existing large plants from their 1980 levels by 2003.

The UK government still stood out alone and insisted that there should be an attempt to link emission reductions with environmental impacts. The Critical Loads approach is the one to which the UK government has committed itself. In the 1990 white paper "This Common Inheritance", the government states its intention to "base further air pollution, including Acid

Rain Policy on critical loads", and declares as a long term objective "the reduction of deposition to levels that are environmentally sustainable".

Work on critical loads in the UK is brought together by the Critical Loads Advisory Group (CLAG). The group has a number of sub groups working on different receptors, (fresh waters, soils, forests, vegetation, crops and building materials) and on levels of deposition. There is also a Mapping and Modelling group working on the assessment on the relationship between deposition and critical loads. Reports from these groups are expected to emerge over the next few years, with the first, an overview and executive summary to be published in late 1993.

Some in Europe and in many pressure groups in Britain have voiced their concern that the critical loads approach is tainted with a political desire for delay in agreeing to emission reductions. John Muriis from the Department of the Environment suggested that in the UK's interest, the government had to show that cost efficiency was a predominant concern in attaining environmental goals. This worried some independent observers at the conference, especially some of those visiting from EC and Scandinavian countries.

Jane Hall (Institute of Terrestrial Ecology) showed how useful mapping is, in the interpretation of critical load investigations. Maps, although of secondary importance to data, can be easily understood by both scientists and politicians. Different statistics can be mapped and sensitive areas "highlighted". Herein lies one of the fundamental problems of the critical load concept. Different organisations and different scientists, representing different interest groups can produce different maps to "conclusively" support their argument.

In the UK, critical loads work has focused mainly on soils and fresh waters. The resolution and statistic mapped are dependent on the availability of data required for the calculations.

The current national critical loads map for acidity for soils is based on the weathering rate, as indicated by mineralogy, of the dominant soil type in each 1km square from available databases of soil information. These data have been aggregated using the dominant critical loads class to produce 10km and 20km grid maps. More recently models have been developed to generate critical load values for soils assuming the presence of different vegetation types (such as forestry).

For fresh water, a survey of the most sensitive water body in each 10km square of the UK has provided a chemical database for critical loads.

To assess the impact of acidifying pollutants, maps are generated using current (or modelled) deposition data for Sulphur and Nitrogen, that show areas where the deposition load exceeds the critical load. Future scenarios which take account of possible reductions of sulphur emissions have been explored, allowing the identification of areas which may benefit from reduced emissions or those areas where damage may still occur.

From studying the relevant papers presented and the large number of poster displays a clear picture built up of areas which exceed their critical loads and where, because of the extreme

sensitivity of the catchments even with agreed 60% reduction in emissions acidified watercourses and soils would still remain.

The high rainfall regions of North Wales, the North West of England and South West Scotland are among the areas in Europe with the largest inputs of acidity. In these regions the inputs are dominated by wet deposition which is enhanced considerably by orographic effects. Dr. Fowler from ITE told the conference that recent field studies of a range of sites have been used to test the geographical variability of these orographic effects. They show that the enhancement is largest at West coast sites and has been under estimated in the current maps of wet deposition in the UK by quite a considerable amount.

Vast areas of the rest of Scotland appear to be threatened by acidification if emissions are not substantially reduced. These areas to the North and West of the Great Glen to a great extent consist of poorly buffered rocks with low critical loads so that even quite small amounts of pollutant can exceed the critical load and thus acidify the watercourse and surrounding soil.

In the UK fresh waters two different, but complementary, approaches have been used to set critical loads for individual water bodies. These are the 'diatom model' and the steady-state chemistry (Henriksen) model. The diatom model (based on the known acid tolerances of a number of unicellular diatom species) is used to set what is regarded as the minimum critical load for the site whilst the steady-state chemistry model is used to set critical loads to protect individual species or groups of species.

Alan Jenkins (Institute of Hydrology) stated that, "Crucial to the determination of target load strategies is the ability of dynamic models to predict future water chemistry under given levels of deposition". This has been carried out for lakes in the Galloway region using the MAGIC (Model of Acidification of Groundwaters In Catchments) model. The model predicts that acidified waters in the region will recover only marginally in response to the Large Combustion Plant Directive (LCPD) scenario by the year 2005 and the total percentage of acidified lakes will remain the same.

Two papers which created some controversy and concern were given by scientists employed by National Power, and the Forestry Authority.

After an introduction Richard Skeffington (National Power) produced some thought provoking statements; "One interesting outcome of the process has been the realisation that it is not possible to reduce deposition so that it meets critical loads (at least as currently calculated) everywhere in Europe" and "It is also clear that techniques such as fuel switching, energy conservation and promotion of renewable energy are both more effective and more cost effective in meeting critical loads goals than forcing the fitting of end-of-pipe emission control to existing combustion plant. The Critical Loads Approach has been very valuable in allowing such assessments to be made, and in making it clear to some countries the scale of emission reductions which is necessary".

Skeffington asked; "Has the Critical Loads Approach been of use in formulating national and company emission control policies within the UK? Not so far. One problem is that maps of

critical loads appear to be in a constant state of change. Partly this reflects advances in knowledge and concepts, but partly it reflects correction of mistakes". Skeffington went on to say that .."no policy could reasonably have been based on anything as volatile as the published critical load maps".

Skeffington continued "The major problem with the Critical Loads Approach is that it does not quantify the ecological effects that people are really worried about. The things that really concern us are not the chemical parameters and thresholds that the Critical Loads Approach is based on, but the living organisms which are affected by changes in our soils and waters.

We need methods which translate changes in emissions into changes in the health of fish and forests and natural ecosystems - only then can politicians judge whether spending very large amounts of money on emission control is worthwhile".

This to an informed bystander did seem however to represent an excuse for inaction and a method of stalling for time, typical of UK government and some power generators up until now.

Peter Freer Smith representing the Forestry Authority agreed that "the Critical Load Approach has been useful, and with appropriate refinement, it should continue to be used to guide policy such that forestry is sustained without damage to the freshwater environment". There was insufficient time to discuss future forestry developments but many were worried by the statement at the end of Mr. Smith's presentation when he seemed to suggest that there is nowhere in Britain unsuitable for commercial afforestation, and by using the appropriate liming treatments soils and surface water could be brought below the critical load exceedable threshold. It is hoped this is not an ominous sign for the future as the Critical Loads Approach has now shown that there are large areas of upland Wales, Cumbria and Scotland that would experience an exacerbation of the acidification process if commercial forestry expanded in these areas.

Dr. Batterbee summed up the conference as far as many were concerned when he stated in his paper summary; "Despite the many uncertainties and assumptions in the methods used (in the critical load assessments) clear geographical patterns of exceedance emerge. Maps for 2005 following the planned reduction of British Sulphur deposition of 60% show that many areas of exceedance remain". The problem of acidification is not going to disappear and the Critical Loads Approach to the problem is still at an embryonic stage. The conference highlighted the large amount of data being produced in Britain and Europe, but also highlighted the very delicate political nature of the problems involved.

WEST GALLOWAY FISHERIES TRUST

(by Atlantic Salmon Trust Director)

The AST has supported the West Galloway Fisheries Trust from its start. The Trust is an example of what single District Fishery Boards can do if they group together. The following extracts from their 1992/93 Annual Report gives some idea of their achievements since 1985 and is reproduced with the permission of the Trustees.

A brief synopsis of the West Galloway Fisheries Trust and it's activities.

1. To gather relevant data on this environmental resource to facilitate sensible discussion concerning future management.
2. To establish catchment management plans for each river in the area co-ordinating with the District Salmon Fishery Boards.
3. To educate all sectors of the community about caring for freshwaters and to encourage a high level of personal commitment and responsibility towards them.
4. To disseminate information to all relevant parties.

Since 1989 the WGFT has initiated a number of vital projects throughout South West Scotland and these include:

1. Juvenile salmonid surveys are carried out on an annual basis on the Rivers Luce, Bladnoch, Cree and Water of Fleet. Over the last four years these have highlighted the shortage of salmon in the headwater streams, which has largely been attributed to the combination of large scale afforestation (65% of the Cree catchment is under trees) and acidification caused by acid deposition and the underlying resistant bedrock.
2. Extensive juvenile electrofishing surveys have also been carried out on the River Stinchar (1990-1991) and the River Doon (1992), for the respective DSFB or River Improvement Association. These have highlighted the areas within each catchment short of young salmon and subsequent written reports have identified the likely cause(s). Most of the factors affecting the distribution of juvenile salmon are common to all rivers. The most common restrictive factors are: Impassable obstacles (man made and natural), overgrazing of stock, pollution from agricultural sources (usually silage and/or slurry), water treatment works, siltation and erosion caused by forestry drainage, and acidification caused by acid deposition exacerbated by upland afforestation.
3. On the Rivers Bladnock, Luce and Water of Fleet, WGFT has set up continuous chemical monitoring sites to assess the episodic nature of the acid flushes experienced during and after heavy rainfall. The Macaulay Land Use Research Institute (MLURI) have also been encouraged to establish three sets of equipment on the headwater streams in the River Cree catchment. On all the rivers the problems are the same, when the water is at base flow the chemistry is reasonable but as soon as the rivers rise the chemistry changes dramatically and acid flushes occur with regularity.

4. On the Rivers Cree, Bladnoch and Luce, egg box experiments have been conducted to test whether fertilized salmon eggs will hatch successfully buried in the gravels of the respective headwaters. These experiments, carried out in 1989, 1990 and 1991, showed that in certain areas survival was very low indeed and in others it was much better. The streams where problems occurred were those on base poor geology, where it was suspected that acidification could be a limiting factor.
5. The WGFT is setting up experiments involved with instream habitat manipulation on the River Stinchar, to establish whether it is feasible and cost effective to increase the number of salmon parr, and thus smolts, that can be produced from a section of river.
6. A salmon hatchery, using eggs taken from fish caught in the four WGFT rivers, has been established to produce first feeding fry and two month fed fry to restock or enhance stock areas of the catchments identified as suitable. Genetic integrity has been maintained and only progeny from a certain river are returned to that river. The hatchery has a capacity of 400-500,000 eggs, although in 1992-1993 only 230,000 eggs were collected. WGFT is developing different methods of catching broodstock, ranging from encouraging anglers at the end of each season to retain black or red fish in special enclosures, to building specially designed traps on particular spawning burns. Both methods mentioned above are working extremely well.
7. The WGFT in conjunction with the River Luce DSFB and staff from SOAFD are planning to install a fish counter on the River Luce which will add to the quantitative information on fish runs in Scotland, as up until now there is no accurate way of estimating fish abundance in any river in South West Scotland. It is hoped to install the device during 1994.
8. The WGFT conducts a great deal of survey work in conjunction with Colin Carnie, a civil engineer from Crouch, Hogg and Waterman, on the South West's rivers. These surveys are designed to improve the rivers not only for the adult fish and for the anglers attempting to catch them, but by improving and diversifying the instream habitat for the juvenile fish. Beats have been, or will be, improved on the Rivers Stinchar, Luce, Bladnoch, Cree and Water of Fleet following such works.
9. The River Bladnoch is unusual in having a perceived pike problem, which are thought to predate heavily on smolts and parr. The WGFT in conjunction with staff at SOAFD are attempting to quantify the problem.
10. WGFT has established an Annual S.W. Scotland Bailiff's meeting to attempt to co-ordinate anti poaching activities on a Regional basis.
11. WGFT has been involved with monitoring various pollution incidents in the area including severe siltation effects, caused by forestry extraction, and silage spillage into watercourses. WGFT has worked closely on the problems with Solway River Purification Board (SRPB).

12. In fact WGFT enjoys a close working relationship with a number of organisations and agencies and maintains regular exchange of information with; SRPB, Scottish Natural Heritage (SNH), Dumfries and Galloway Regional Council, Forestry Enterprise and Forestry Authority along with some of the private forestry companies.
13. A very important aspect of the WGFT's work is that of education. To this end WGFT has established a primary school education project "Salmon in the Classroom" which encourages a hands on approach to conservation and especially a personal commitment to looking after the local fish stocks within the burns. In fact WGFT won the Biwater Award for the best Operation Brightwater Project in 1992-1993 for our work in schools.

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RIVER TAW FISHERIES ASSOCIATION

(News from the River Taw Fisheries Association, reprinted from their Summer 1993 Newsletter with kind permission of the Association.)

EDITORIAL

May the Editor begin by apologising for stating in last year's Newsletter that Charitable status had been obtained for the River Taw Trust. We had been informed by the Charity Commissioners that our application was in order and that there was no problem but, in the event, the Trust was not registered as a charity. This is obviously a great disappointment but the Commissioners felt that the Trust was too specifically aimed at the fishery which was not of itself sufficient benefit to the public at large. This was something which was hotly disputed but we were unable to agree. However, the River Trust is still in being, albeit without the tax advantages of charitable status and the Trustees have carried out a number of projects of trash dam clearance and gravel rehabilitation in support of the NRA. The Trust needs financial support to carry on those essential works which may not find a place in the restricted budgets of the National Rivers Authority, South West - contributions please to Tim Pearkes, our Treasurer.

There are plans afoot for a much larger South West Rivers Trust, encompassing most of the rivers in the South West peninsula with very wide objects of public benefit and there is confidence that this will achieve charitable status.

We mentioned last year larger runs of Salmon and Sea Trout in the estuary and indeed the latter part of the season on the Taw yielded a good crop of fish. This year so far the numbers of fish caught in good water conditions may seem a little disappointing. Many fishermen detect and report a much greater liveliness in the river environment. Plenty of Fry, plenty of fly, many more Trout on the fin, and a more wholesome look to the river and good runs of Sea Trout and some Salmon. Is an 8lb Sea Trout on a fly a record for the River Mole we ask? - a

wonderful fish and amazingly good on the table. Our sister river, the Torridge, has had exceptional Spring Salmon Fishing after a decade of decline and despair.

Although the apparent improvement in the river environment may be a false dawn it does give great encouragement and even if this improvement is due to factors outside our control, nevertheless, temporary absence of netting, the farm scheme carried out by the NRA, the improvements to sewage treatment works by South West Water and the programme for the estuary and treatment works inland must play a part in this tentative real revitalisation of our river system. Hopefully a time may come when our estuary is fit for children to bathe in and for Salmon and Sea Trout to find clean, highly oxygenated water to run when conditions are right. The clean up of the river is enormously expensive following years of neglect and we must make sure that the ignorance, selfishness, or just sheer carelessness of those whose businesses are located by the river and all its feeder streams do not negate the tremendous efforts and investment that are being made. If one sees evidence of pollution it must be reported immediately to NRA South West by telephoning 0800 378500. The price of clean water is constant vigilance.

The NRA South West has new Management and the new Regional General Manager is Mrs. Katharine Bryan. We look forward to meeting Mrs. Bryan and wish her every success in her new post. She has a big job. One of her tasks will be the management of the net limitation orders in the estuary when the current temporary buy out of the nets comes to an end in 1995. With Salmon retailing at £2 per lb in Sainsbury's on the estuary at Roundswell, Barnstaple, one wonders if netting can be really worth the wet sea labour. Certainly plenty of Salmon and Sea Trout and Brown Trout in the river brings major economic benefit to North Devon which needs all the help it can get in this area. Good fishing means more visitors and more employment.

We welcome the withdrawal of the NRA from the implementation of fishery contributions in Section 142 of the Water Resources Act 1991. Your Association has campaigned against this highly complicated and expensive method of raising revenue from fisheries. We still hope that a method may be found whereby fishery rates, where applicable, can be diverted in whole or in part to the National Rivers Authority and in addition, while no one welcomes additional imposts through the licence system, we feel that game fishermen should be prepared to contribute to the water quality required for their sport in enhanced licence fees.

CATCHES

The first three months of the year were exceptionally dry and it is therefore hardly surprising that there was a very slow start to the season. Fewer than 50 Salmon were landed up to the end of May and yet encouraging reports from the Torridge, together with the positive news of many fish in the estuary, led some to believe our turn was yet to come - if only we could have some rain in June. We did! A thunderstorm broke over the county in late May, followed by torrential rain and storms during the first fortnight in June, which resulted in sustained river levels into early July. Though all our members are fully aware of the rain and flooding in the South West, it should be remembered that our readership extends as far as Iceland and New Zealand.

Reports from the bailiffs suggest a total of some 120 Salmon caught on the system up to mid July, which is about 50% up on last year, but we might have expected more as a result of the high water levels in June. However, with some more heavy rain now and reports of a good head of summer salmon in the estuary, hopes are running high. Alex Anderson landed a 16lb 8oz salmon in high water on the Taw and a 9lb 13oz sea-trout was caught by Andy King at night as far upstream at Bridge Reeve.

A considerable number of large sea-trout were well distributed throughout the system in early July and catches of fish between 8 and 10 lbs plus have become quite frequent. The growing number of large sea-trout in the river had been a feature over the past few years, often accompanied by vicious takes and screaming reels! A word of warning here. All sea-trout over 2lbs are our future breeding stock, so if you hit a "bumper" night and want to ensure similar sport in the future - please return as many as possible to conserve stocks. Though some school peal are running the river now, it has been well over ten years since we had a big run.

As this News Letter "goes to press" reports are just coming in of several large fish being hooked and lost in the past few days. Better still, there have been encouraging reports recently of large numbers of fresh fish including school peal, sea-trout and salmon ascending the weirs at Colleton on the Taw and head Weir on the Mole.

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ATLANTIC SALMON POPULATION MANAGEMENT: MAXIMISING PROGENY NUMBERS FROM NATURAL SPAWNING.

(John Webb, Marine Laboratory, Aberdeen)

In the last Progress Report (June 1993) I outlined plans for a major new research project to look at the factors affecting the survival rates of juvenile salmon in the wild. In particular the project aims to assess the extent of variation among families and examine ways of reducing mortality among juvenile salmon through maximising habitat use. The project involves both field experimentation and laboratory based analyses and is being conducted in conjunction with SOAFD at sites within the Aberdeenshire Dee.

Last autumn, a pilot study was conducted to assess options for planting out and incubating eggs within a small spawning tributary of the Aberdeenshire Dee. Adult salmon entering the stream were captured and stripped. Fertilised green eggs were placed in artificial redds and mesh baskets within the stream. During the course of the following six months of the incubation period the tributary, and indeed the Dee as a whole, suffered two exceptionally large flood events. Within the study area this had two main effects: (1) it caused scouring of spawning gravels and induced larger scale changes in channel form and (2) it resulted in the movement of large quantities of sand and silt. Both factors led to the loss of many eyed eggs - due primarily to washout, silting and subsequent asphyxiation.

By the late spring of this year it was clear that egg mortality among all of the experimental families was very variable, and higher than normal. Since it is considered important that the pre-hatch survival of the experimental families should be comparable to those estimated for natural spawning it is not intended to invest further effort in following the growth and performance of the progeny of 1993 plantings.

All of our findings (positive or negative) will have practical implications for management of salmon populations in the Dee and other river systems. Renewed effort will be directed to devising and testing new egg planting schemes this autumn.

Spawning studies on the River Dee

During the autumn of 1992 an investigation into the timing of spawning of salmon in different areas of the Aberdeenshire Dee was carried out. Although it is widely believed that fish in different areas of the river spawn at different times, the extent of the variation was unknown and had not been systematically recorded. To this end spawning was monitored at three sites within the main river (Polholloch, Sluie and Murtle) and at two sites within each of two tributaries (Clunie and Sheeoch) between late October 1992 and mid-January of this year. The results were as follows:

	Spawning period	Duration (days)	Number of redds
Clunie	20.10.92 - 20.11.92	32	75
Polholloch	3.11.92 - 20.11.92	18	80
Sluie	7.11.92 - 14.12.92	42	57
Sheeoch	12.11.92 - 29.12.92	48	39
Murtle	22.11.92 - 16.12.92	25	331

In general, fish in higher reaches of the system were found to spawn earlier and their eggs hatched later than those lower down. Variation in peak spawning time was such that there was no overlap between the spawning period at sites at either end of the river system.

River temperature was also recorded at some study sites. Relationships between temperature and variation in the timing of spawning are currently being assessed. Although the start of spawning coincides with declining temperatures in the autumn and early winter, our results do not support the theory that it is this which triggers spawning activity. Rather the results suggest that differences in the timing of spawning are innate characteristics of fish homing to different parts of the river system. Such differences may be genetically based and are perhaps specific adaptations to differences in environmental conditions experienced by populations of fish derived from different parts of the Dee.

It is anticipated that the results of this study will be submitted for publication later this year.

Escaped farmed salmon in catches made by coastal netting stations

In June of this year I received reports that very large numbers of escaped farmed salmon were being caught at the Redpoint bag-net fishery operated near Gairloch in Ross-shire. On some days, catches were thought to consist of 60-70% escaped farmed salmon. These levels were subsequently confirmed using morphological and scale reading methods; the incidence of escapes ranging from 60-74% of daily catches over much of June and the early part of July.

Monitoring planned for Redpoint was extended to other parts of the Scottish coast to examine variation among fisheries. The other sites monitored included commercial net fishings at Garlieston (Solway), Kilmore (Mull), Strathy (North coast), Bonar Bridge and Montrose bay. Catches at these locations were examined and sampled over the peak of the season in July to end of the net-fishing season in August. Samples of scales taken from fish over this period will be read over the coming months.

A full report of the findings of this work will be described in the next Progress Report (June 1994). In addition, it is hoped to publish a final report on the prevalence and behaviour of escaped farmed salmon in Scottish waters in a future edition of Scottish Fisheries Research.

Publications and Presentations

A short paper describing the spawning of escaped farmed salmon in the River Polla in the second year after the loss of sea-cages in Loch Eriboil in 1989 has recently been published in *Aquaculture and Fisheries Management* (Vol.24 - pages 557-561). A paper describing the results of the fry survey undertaken in the spring of 1991 will also be published shortly in the same journal (Vol.25). As part of the same study - a paper describing the incidence of hybridisation between escaped farmed female salmon and wild male trout will shortly be published in the *Canadian Journal of Fisheries and Aquatic Sciences*.

A recent article on how to identify escaped farmed salmon which appeared in the *Trout and Salmon Magazine* (April 1992, pages 36-37) has been produced in a colourful poster format. Copies can be obtained from the AST Moulin office.

In late July, I gave a short presentation to four representatives of the Crown Estate commissioners (CECs) at the SOAFD Marine Research site at Loch Ewe. The party included The Chairman of the CECs, Lord Mansfield. The principle theme of my presentation was the AST's work on the impact of escaped farmed salmon and included a summary of the Polla project, the 1991 Fry survey and the results of the last three years research at Redpoint.

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81st STATUTORY MEETING OF ICES, DUBLIN

(Dr. Derek Mills)

The 81st Statutory Meeting of the International Council for the Exploration of the Sea was held in Dublin from 23rd September to 1st October.

The setting up of a number of important discussion groups was proposed by the Anadromous and Catadromous Fish Committee (ANACAT). These included:

1. A study group on the interaction of wild, ranched, enhanced and reared salmon to be held in Reykjavik in April 1994, under the chairmanship of Alan Youngson. The purpose of this is to
 - (a) respond to the question from NASCO on the impact of salmon aquaculture on wild stocks with specific reference to genetics, disease and parasites and the ecological and environmental impacts and
 - (b) develop preliminary plans for an Anacat and Mariculture committee joint session for the 1985 statutory meeting on the topic "Interactions of wild, reared, enhanced and ranched salmon" for consideration by the parent committee at the 1994 statutory meeting.
2. A study group on stock identification protocols for finfish and shellfish under the chairmanship of Kevin Friedland.
3. A study group on sea trout, under the chairmanship of Bror Jonsson, to:
 - (a) gather information on population status of anadromous brown trout.
 - (b) summarise information on variation in population structure (residents and migrants) and life history strategies in anadromous brown trout in various areas and
 - (c) evaluate major causes for fluctuations in population abundance.
4. A study group on the occurrence of M-74 in fish stocks. This disease has a 90% occurrence in hatchery fish.

Anacat this year had a special session on sea trout at which the committee learnt of sea trout studies in Iceland, Denmark, Finland, Poland and Ireland. The largest contribution, perhaps not surprisingly, was from Ireland and, as might be expected, dealt chiefly with sea lice infestation.

There was a very valuable joint session of the pelagic, anacat and hydrography committees on the effects of oceanographic factors on survival and distribution of fish. Five of the 11 papers presented dealt with salmon, other fish species covered included herring, capelin and anchovies. There was an opportunity to point out to the committees the value of such joint session and how gratifying it was to have salmon biologists, hydrographers and other marine fishery scientists sitting together to discuss mutual problems in the marine environment. Mention was made of our recent international salmon symposium on Salmon in the Sea and our even more recent workshop on this subject. It was proposed that this need for all those involved in oceanographic work to communicate their findings to one another should continue

at future statutory meetings. This proposal received unanimous support from those present and it was agreed that there be more joint sessions in the future.

Details of some of the papers presented to Anacat appear in the Current Review on Scientific Literature on Salmon which appears elsewhere in this Progress Report.

The 82nd Statutory Meeting of ICES will be held in Newfoundland in September, 1994.

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REVIEW OF RECENT SCIENTIFIC LITERATURE ON SALMON

(by Dr. Derek Mills, Institute of Ecology and Resource Management,
University of Edinburgh)

1. Juvenile Salmon

Survival of salmon, Salmo salar L., eggs planted in an upland stream. M. Kelly-Quinn, D. Tierney and J.J. Bracken. Aquaculture and Fisheries Management, 24, 6, 791-795, 1993.

The survival of eggs, planted in streams with varied geology and pH values, was highest where pH values were above 6.0 throughout the incubation period. At one site, where the pH values fell below 4.5 on several occasions, no eggs survived to hatching and the eggs became extremely "brittle".

Initial observations on the effects of varying levels of deciduous bankside vegetation on salmonid stocks in Irish waters. M.F. O'Grady. Aquaculture and Fisheries Mangement, 24, 4, 563-573, 1993.

The effects of varying levels of deciduous bankside vegetation on salmonid stocks in Irish rivers were investigated. In summertime, when marginal vegetation limited the extent of incident light reaching the river bed, a marked decline in both juvenile and adult trout numbers were observed relative to stocks in adjacent areas with a less dense canopy.

Factors affecting salmon production in Irish catchments. M.F. O'Grady and P.G. Gargan. ICES, C.M. 1993/M:35.

This paper outlines the range of salmon habitats in Ireland and illustrates the extent of baseline data available in relation to this resource. The range of problems which are affecting/eliminating wild salmon production include organic pollution, unbalanced riparian

zones, impassable barriers, afforestation, hydro schemes, overgrazing, compaction/siltation of gravels, arterial drainage schemes, competition/predation, ponding, water abstraction, calcification, reservoir creation, gravel removal and lack of gravels. Programmes underway to offset the difficulties are outlined.

The possible effects of environmental and oceanographic factors on abnormally high salmon fry mortality in the Baltic Sea. E. Ikonen. ICES, C.M. 1993/M:32.

Salmon fry mortality during the yolk-sac phase has increased dramatically in the early 1990's in most salmon hatcheries operating with eggs obtained from spawners following a two to three year feeding run in the Baltic Sea. The offspring of hatchery-run salmon have not met with any abnormal mortality during the fry stage. These salmon spawners have been reared in hatcheries since the egg stage and fed with food excluding items originating in the Baltic Sea. Preliminary parr density studies in rivers with natural salmon stocks suggest increased fry mortality. The concentration of organochlorines and fry mortality increases with the size of the female. Recent changes in the oceanographic and environmental factors as possible reasons for fry mortality are discussed and include organochlorines and the M-74 phenomenon.

Possible causes of fluctuation in stock size of Atlantic salmon in northern Iceland. Th. Antonsson, G. Gudbergsson and S. Gudjonsson. ICES, C.M. 1993/M:10.

The annual salmon catch in rivers of north Iceland is highly variable and so is the number of salmon returning from each smolt cohort. The catch of salmon in rivers of that part of the country fluctuate together and also the year-class strength of juveniles in the rivers. Marine conditions as measured in sea temperature are also variable and can explain a large part of the variation in the salmon catch, more so than the number of smolts entering the sea. In years of low sea temperature and poor ocean conditions colder climatic conditions are also experienced on land. Therefore, in such years smolt production in rivers is reduced and the abundance of salmon juveniles is lower. The stock size of numbers of animals, both in fresh water and in the sea north of Iceland is governed by these climatic and marine conditions.

2. Marine Phase

Marine environmental factors influencing the movement and survival of Atlantic salmon. D.G. Reddin and K.D. Friedland. ICES, C.M. 1993/M:42.

This paper reviews the distribution and movement of Atlantic salmon in the northwest Atlantic. Research vessel catches indicated that salmon of all sea ages occurred seasonally over most of the northwest Atlantic. Salmon were concentrated throughout the year in the Labrador Sea gyre, in summer and autumn of west Greenland, and in the spring near the eastern slope of the Grand Bank of Newfoundland. Postsmolt salmon were also found in abundance in the Labrador Sea in the autumn. These areas had in common seasonal sea-surface temperatures between 4 and 10°C within which range about 80% of the salmon population was found. An

index of habitat available for overwintering salmon in the Labrador Sea was shown to be related to catches in several countries. The index shows that overwintering habitat has declined since the early 1980's and is more variable in recent years.

The production of North American and European Atlantic salmon: effects of post-smolt growth and ocean environment. K.D. Friedland, D.G. Reddin and J.F. Kocik. ICES, C.M. 1993/M:13.

An exploratory analysis of sea surface temperature trends for northeastern and northwestern portions of the Atlantic Ocean was used to characterize habitat area as defined by temperature minima and maxima. Thermally defined habitat was then compared with Atlantic salmon production indices. Findings for North American stocks suggest that the distribution of winter habitat in the Labrador Sea and Denmark Strait was critical. For European stocks, the findings suggest reduced overall post-smolt habitat in recent years which may have resulted from cooling in the North Sea and warming along the southern extent of nursery habitat.

3. Adult Salmon in Rivers

Recent trends in the rod catches of Atlantic salmon, Salmo salar L., from four sites on the River Spey. R. Laughton and G.W. Smith. Aquaculture and Fisheries Management, 24, 5, 671-679.

Rod catches at four sites on the River Spey were analysed over the period 1970-91. The year-by-year trends and seasonal patterns of rod catches varied according to site location. During the 1970's and 1980's the spring salmon catch from the Spey as a whole declined, mirroring a decline in catch at the lower sites in the river early in the year. Catches at the study sites did not always follow trends in the fishery as a whole, however, illustrating that the catch at any given site is not a simple function of the total number of available fish in the river. In the first two years of the 1990's the decline in early season catches continued, accompanied by a more general drop in catches throughout the angling season at three out of four sites.

Relationship between rod catches and distribution of adult Atlantic salmon, Salmo salar L., during the initial phase of riverine migration. G.W. Smith and R. Laughton. Aquaculture and Fisheries Management, 24, 5, 681-83.

The study involved a study of the monthly angling catch and the distribution of radio-tagged fish. The monthly angling catch at three sites studied on the Spey was expressed as a proportion of the total monthly catch for all three sites. The general pattern is remarkably similar to the distribution of radio-tagged fish. It was clear that the salmon's vulnerability to rod capture is not entirely restricted to the first few weeks of its riverine migration.

Salmon rivers in the Kola Peninsula. Status of Atlantic salmon stocks. A.V. Zubchenko and A.F. Sharov. ICES, C.M. 1993/M:54.

There are 65 rivers over the Kola Peninsula with the length of more than 10km which possess conditions suitable for salmon. Five of these rivers are more than 200km in length: the Ponoy (435km), Varzuga (262km), Tuloma (236km), Strelna (231km) and Jokanga (202km). This will be a useful paper for those anglers planning a fishing trip to the Kola Peninsula next year!

Salmon Rivers of the Kola Peninsula. Reproductive potential and stock status of Atlantic salmon from the Umba River. A.V. Zubchenko and O.G. Kuzmin. ICES, C.M. 1993/M:58.

The Umba River is one of the main salmon rivers on the Kola Peninsula but is only 25km long but has a number of lakes in its course. Improvement of salmon stocks depends on the need to curtail commercial and illegal fishing, prohibit timber rafting and reduce the influence of predatory fish.

4. Salmon Farming

High numbers of farmed Atlantic salmon, Salmo salar L., observed in oceanic waters north of the Faroe Islands. L.P. Hansen, J.A. Jacobsen and R.A. Lund. Aquaculture and Fisheries Management, 24, 6, 777-781.

To estimate the proportion of escaped farmed salmon at the feeding grounds in the north-east Atlantic Ocean, samples of salmon caught with long-lines north of the Faroes Islands were examined. Identification of reared fish was carried out using scale analysis. The proportion of farmed fish was estimated to range from 25 to 48% in the different samples, suggesting that high numbers of escaped farmed salmon occur in the Norwegian Sea. The farmed fish were significantly smaller in size than wild salmon. Although it is suggested that most of the farmed fish are of Norwegian origin, farmed fish of Scottish, Faroese and Irish origin are also believed to be present. If not accounted for, high numbers of reared salmon in fisheries and stocks will seriously affect the assessments of fisheries and stocks of wild salmon.

Spawning of farmed Atlantic salmon, Salmo salar L., in the second year after their escape. J.H. Webb, I.I. McLaren, M.J. Donaghy and A.F. Youngson. Aquaculture and Fisheries Management, 24, 4, 557-561.

The frequency of escaped farmed salmon in the River Polla was estimated at spawning in 1990, the second year after the escape of 184,000 fish from a sea-cage site nearby. Fourteen of seventy-three spawners examined were of farmed origin. In only six of these fish were scale growth patterns consistent with their being part of the documented escape. All of these fish carried the pigment canthaxanthin. Fifty-nine redds were constructed at spawning. Five of fifty-four redds sampled contained embryos or alevins bearing canthaxanthin. These findings and those of a previous study suggest that more than 95% of those fish which returned

to the rivers near the site of the documented loss did so in the first year after escape and that fewer than 0.5% of those fish which escaped returned within the 2 years of study.

Spawning of escaped farmed Atlantic salmon, *Salmo salar* L., in western and northern Scottish rivers: egg deposition by females. J.H. Webb, A.F. Youngson, C.E. Thompson, M.J. Donaghy and I.S. McLaren. Aquaculture and Fisheries Management, 24, 5, 663-670.

In 1991, the progeny of female Atlantic salmon were sampled at emergence from sites in 16 rivers in western and northern Scotland. The progeny of farmed females that had escaped from sea-cages were identified by detecting the presence of maternal canthaxanthin in the juveniles' pigment load. Canthaxanthin was detected among fish sampled from 14 of the 16 rivers examined. Overall, 109 of the 2373 fry sampled carried canthaxanthin with an average frequency over all the rivers examined of 5.1%.

5. Stock Assessment

Forecasting the abundance of North American two-sea winter salmon stocks and the provision of catch advice for the West Greenland salmon fishery. D.G. Reddin, K.D. Friedland, P.J. Rago, D.A. Dunkley, L. Karlsson and D.M. Meerburg. ICES, C.M. 1993/M:43.

This is an important mathematical paper describing the data required to forecast the abundance of North American two-sea winter salmon stocks. In North America, relationships between the amount of spawning and subsequent recruits have been identified in some Atlantic salmon populations with recruitment reaching a maximum at an intermediate level of spawning. Consequently, for salmon, fisheries management practices can maximize recruitment by ensuring that an optimum number of salmon are allowed to spawn. The current target minimum egg deposition rate within North America is 2.4 egg per m² river salmon rearing habitat; and in addition, for insular Newfoundland 360 eggs per hectare of pond habitat. The further the spawning escapement is below the target egg deposition, and the longer this situation occurs, the greater the possibility exists of incurring the following risks: accentuation of annual fluctuations in run size; increased susceptibility to extinction from genetic or environmental catastrophes; permanent change in demographic characteristics of the spawning population and possible replacement in the ecosystem by other competing fish species.

* * * *

CHAIRMAN'S REPORT

The Chairman presents his report and the audited accounts for the year ended 30 June 1993.

1. OBJECTIVES AND FUNDING

The principal objective of the Atlantic Salmon Trust is to protect and enhance the stocks of salmon in the United Kingdom for the benefit of the community. To achieve this objective, it draws the attention of the appropriate authorities to the particular dangers facing the salmon; it offers advice to Government Ministers and to their Departments and to the European Community; it finances scientific research, arranges workshops and international conferences and publishes booklets on matters of general and scientific interest about the salmon for the benefit of salmon managers, scientists and anglers.

In order to raise the necessary finance for its principal objective, the Trust is entirely dependent on donations and, wherever possible, sponsorship support towards the cost of scientific projects. In that connection, the Trust is particularly fortunate to have been sponsored over the past four years by Justerini & Brooks (J & B Rare Whisky), who have financed important projects administered by the Trust in Scotland and on the Continent of Europe.

The direct and indirect costs of running the Trust are mainly funded by investment income. It is an important objective of the Council of Management to ensure that investment income will continue to be maintained at a level which will sustain these direct and indirect expenditures in the future as well as in the present. With that aim, periodic discussions are held with the Trust's investment managers to ensure that any necessary changes are made to the investment portfolio whenever market conditions so dictate. This was of particular importance to the year under review, as referred to later on in my report.

2. REVIEW OF THE YEAR

Despite the continuing economic recession, the work of the Trust has continued much as last year but with an ever increasing involvement in projects of special significance. Those matters which deserve particular mention are set out below.

Annual Postal Fishing Auction

This continues to be a great success and raised £30,900 for the Trust during the year. Although the net proceeds were less than the previous year (£34,500), each annual Auction has nevertheless generated considerable interest and we are hopeful that a comparable amount will be raised for the current financial year ending 30 June 1994. The Auction is conducted in conjunction with the Tweed and Wye Owners, for whom the Trust continues to act as agents.

Special Projects

The gross expenditures on projects sponsored by other organisations and those financed directly by the Trust totalled £47,500 (1992: £59,200). Two Continental projects sponsored by Justerini & Brooks for £12,000 were not, however, carried out during the year and it is intended that these monies should be spent on alternative Continental projects during the current financial year ending 30 June 1994.

Sponsorship finance actually utilised during the year ended 30 June 1993 amounted to £32,000 and thereby reduced the total net project costs to £15,500 for the year ended 30 June 1993 (1992: £18,000). In particular, John Webb's important investigation into the interaction of farmed and wild salmon was completed during the year and the results are being written up.

Other long term projects include a study into sea trout improvement prospects in Loch Morar, in conjunction with the Scottish Hydro Electric plc, the Morar District Fishery Board and the Scottish Office. A further continuing project relates to a sea trout cage experiment and a concomitant electro fishing survey, in conjunction with three Highlands and Islands Local Enterprise Companies and the Scottish Office. All of the five sponsored projects carried out during the year has involved the engagement of scientific personnel as temporary employees of the Trust during the duration of the projects.

As a follow up to the Fourth International Atlantic Salmon Symposium held in St. Andrews, New Brunswick, Canada in June 1992, the Trust and the Atlantic Salmon Federation organised a Workshop in Edinburgh in December 1992 to discuss "Surveying and Tracking of Salmon in the Sea". A Blue Book will shortly be published.

Operational results

The operating activities of the year resulted in a small deficit of £435, after providing £5,924 for a depreciation of the tangible fixed assets. This compares with a surplus of £3,261 for the previous year, i.e. an effective reduction of £3,696. The decrease arises as a result of a shortfall of £3,200 in total operational income, coupled with an overall increase of £496 in operating and project expenditures.

The Trust changed its investment managers to Greig Middleton & Co. Limited, Glasgow, during the year. As a result of falling interest rates on bank deposits and the basic aim of maximising investment income for the reasons stated earlier in this report, changes were made to the investment portfolio to establish a more productive income potential between equities, government stocks and cash deposits. The resultant disposals and reinvestments created realised capital gains of £46,200. The general upward movement of the stock market during the financial year ended 30 June 1993 also increased the market value of the entire portfolio by £58,800. In accordance with conventional accounting policy, these realised and unrealised capital gains totalling £105,000 were transferred to Reserves and thus form part of the permanent capital of the Trust.

My Report for the accounting period ended 30 June 1992 referred to an important change in accounting policy under which the investment portfolio would feature in the accounts at market value, rather than at historical cost. For the year ended 30 June 1993, a similar policy has been applied to the Trust's freehold property (the "Scottish Headquarters") situated in Pitlochry. Valuation of the property resulted in an unrealised capital gain of £7,700 which has likewise been transferred to Reserves. This market value basis will be consistently applied to future accounting periods.

Future projects policy

The Trust will continue to support work trying to establish the cause of the sea trout decline in the West of Scotland. John Webb is investigating, along with Scottish Office scientists, new ways of maximising progeny numbers from natural spawning. The Trust will continue, along with other organisations, to press Her Majesty's Government to speed up the North East Drift Net phase out. The Trust is supporting, indirectly, the move to buy out the Faroese and Greenland Quotas.

3. STAFF

There have been no changes in staff during the year and I wish to pay tribute to their hard work and dedication. Finally, I wish to thank all our subscribers and donors for their support, with once again special mention of Justerini & Brooks for their generous sponsorship contributions over a period of several years. The Trust has since received a further contribution of £15,000 from J & B for the current financial year ending 30 June 1994, which will be applied specifically to John Webb's investigation of new ways of maximising progeny numbers from natural spawning mentioned above.

DAVID NICKSON
Chairman

THE ATLANTIC SALMON TRUST LIMITED

A COMPANY LIMITED BY GUARANTEE

AND

A REGISTERED CHARITY

FINANCIAL STATEMENTS: YEAR ENDED 30TH JUNE 1993

Registered Charity No. 252742

Company Registration No. 904293

THE ATLANTIC SALMON TRUST LIMITED

BALANCE SHEET AT 30TH JUNE 1993

1992			Note
	FIXED ASSETS		
	Tangible fixed assets		
41,831	Scottish Headquarters: freehold property at valuation(1992 at cost)	49,500	
<u>12,887</u>	Other tangible fixed assets at net book values	<u>16,801</u>	
54,718			66,301 2
	Investments		
748,218	Quoted shares and securities at valuation	881,317	
<u>49,878</u>	Investment deposit account	<u>28,578</u>	
798,096			909,895 3
<u>852,814</u>	Total fixed assets		<u>976,196</u>
	NET CURRENT ASSETS		
	Current assets		
425	Stocks of promotional items at cost	312	
9,881	Debtors and prepaid expenditures	15,302	
<u>1,153</u>	Bank and cash balances: operational funds	<u>4,826</u>	
<u>11,459</u>		<u>20,440</u>	4
	Current liabilities		
	Creditors and accrued expenditures:		
	Amounts falling due within one year	15,279	
29,406	Net current assets (liabilities)		5 5
(17,947)		<u>5,161</u>	
<u>£834,867</u>	TOTAL NET ASSETS		<u>£981,357</u>
	CAPITAL AND RESERVES		
	ACCUMULATED FUND		
662,240		661,805	6
	RESERVES		
<u>171,527</u>		<u>284,184</u>	7
<u>833,767</u>	DEFERRED CONTRIBUTIONS		<u>945,989</u> 8
1,100	Sponsored projects	28,868	
-	Other	<u>6,500</u>	
<u>1,100</u>			<u>35,368</u> 9
<u>£834,867</u>	TOTAL CAPITAL EMPLOYED		<u>£981,357</u>

Approved by the Council of Management on 30th November 1993

SIR DAVID NICKSON K.B.E., D.L.

(CHAIRMAN).....

REAR ADMIRAL D.J. MACKENZIE C.B.

(DIRECTOR).....

P.J. TOMLIN F.C.A.

(TREASURER).....

THE ATLANTIC SALMON TRUST LIMITED
SUMMARY INCOME AND EXPENDITURE ACCOUNT

YEAR ENDED 30TH JUNE 1993

Note

NET OPERATING DEFICIT FOR THE YEAR

	120,164	Operating income	116,964
		Operating expenditures and charges	101,870
		Net project expenditures	<u>15,529</u>
	<u>116,903</u>		<u>117,399</u>
£	<u>3,261</u>	<u>DEFICIT PER OPERATIONAL INCOME AND EXPENDITURE ACCOUNT (SURPLUS 1992)</u>	<u>£ (435)</u>

CAPITAL GAINS

	<u>£10,418</u>	Realised net gains on disposals of quoted shares and securities	<u>£46,193</u>
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STATEMENT OF TOTAL RECOGNISED GAINS AND LOSSES

	13,679	Surplus for the year after realised capital gains	45,758
		Unrealised gains on quoted shares and securities:	
		increase in market values during the year	58,795
		Unrealised gain on freehold property; excess of market value over historical cost	<u>7,669</u>
	<u>19,482</u>		<u>66,464</u>
£	<u>33,161</u>	<u>TOTAL RECOGNISED GAINS RELATING TO THE YEAR</u>	<u>£112,222</u>

EXCEPTIONAL ITEM

	<u>£(10,942)</u>	Net cost of Fourth International Atlantic Salmon Symposium	<u>£ -</u>
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	22,219	<u>NET SURPLUS FOR THE YEAR BEFORE TRANSFERS TO RESERVES</u>	112,222
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Deduct:

	<u>33,161</u>	Transfers to Reserves	<u>112,657</u>	7
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	<u>£(10,942)</u>	<u>DEFICIT FOR THE YEAR TRANSFERRED TO ACCUMULATED FUND</u>	<u>£ (435)</u>	6
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CONTINUING OPERATIONS

None of the Trust's activities were acquired or discontinued during the above two financial years

REPORT OF THE AUDITORS TO THE MEMBERS OF THE ATLANTIC SALMON TRUST LIMITED
(A COMPANY LIMITED BY GUARANTEE)

We have audited the financial statements on pages 1 to 8 in accordance with Auditing Standards. In our opinion the financial statements give a true and fair view of the state of the Trust's affairs as at 30th June 1993, and of its surplus for the year then ended and have been properly prepared in accordance with the Companies Act 1985.

15a Lesbourne Road
 Reigate
 Surrey RH2 7JP

Davies Watson & Co.

DAVIES WATSON
 CHARTERED ACCOUNTANTS
 REGISTERED AUDITORS

Date... 30th November 1993

THE ATLANTIC SALMON TRUST LIMITED

OPERATIONAL INCOME AND EXPENDITURE ACCOUNT: YEAR ENDED 30TH JUNE 1993

Notes

1992

OPERATING INCOME

Investment income:

45,826	On quoted shares and securities, including tax recoverable	50,037	
<u>6,841</u>	On investment and bank deposit accounts	<u>2,923</u>	52,960
52,667			

Donations:

18,739	Under covenant, including tax recoverable	16,225	
<u>14,079</u>	General and pledged donations	<u>16,348</u>	32,573
32,818			30,892
34,553	Postal fishing auction: share of proceeds, less direct costs		<u>539</u>
126	Miscellaneous income		

£120,164

TOTAL OPERATING INCOME

£116,964

OPERATING EXPENDITURES

44,685	Costs of promoting salmon conservation and enhancement	50,095	
<u>32,105</u>	General and administration costs	<u>36,336</u>	86,431
76,790			6,558
6,441	Progress Reports		801
1,319	Trust publications: cost less sales		600
964	Donations and support grants to other associations		
6,000	Treasurer's remuneration	6,000	
<u>5,000</u>	Less: Contribution by Worshipful Company of Fishmongers	<u>5,000</u>	1,000
1,000			-
3,315	Legal fees: value added tax appeal		-
<u>3,282</u>	Investment management fee		-
93,111	<u>Total operating expenditures</u>		<u>95,390</u>
5,805	Depreciation of tangible fixed assets	5,924	
-	Loss on disposal of tangible fixed asset	<u>556</u>	6,480
5,805			

£ 98,916

TOTAL OPERATING EXPENDITURES AND CHARGES

£101,870

21,248

OPERATING SURPLUS FOR THE YEAR BEFORE PROJECT EXPENDITURES

15,094

PROJECT EXPENDITURES

2,904	On projects sponsored by other organisations	5,717	
<u>15,083</u>	On projects financed by the Atlantic Salmon Trust	<u>9,812</u>	11
17,987			12

£ 3,261

NET OPERATING DEFICIT FOR THE YEAR (SURPLUS 1992)

£ (435)

THE ATLANTIC SALMON TRUST LIMITED

ACCOUNTING POLICIES

1. Convention

The Financial Statements for the year ended 30th June 1993 have been prepared under the historical cost convention, as modified by the inclusion of the freehold property and quoted investments at market value and in accordance with the Accounting Standards Committee Statement of Recommended Practice No 2 (SORP 2) for registered charities.

2. Depreciation of tangible fixed assets

- (i) Depreciation is provided on a straight line basis to write off the historical cost of tangible fixed assets (excluding the freehold property) over their estimated future lives, ranging from four to ten years.
- (ii) Contrary to the requirements of the Statement of Standard Accounting Practice No. 12 (SSAP 12), depreciation is not provided on the freehold premises. The Trust is of the opinion that the cumulative depreciation and the annual charge are not material.

3. Freehold property: change in accounting policy

- (i) Up to and including the accounting period ended 30th June 1992, the freehold property was stated at historical cost. For the year ended 30th June 1993, the property is shown at current market value, based on a qualified valuer's report. It is intended that this valuation basis will be consistently applied to future accounting periods.
- (ii) The excess value of the freehold property over historical cost gives rise to the creation of a property valuation reserve to which future annual increases (decreases) of market value versus historical cost will be added (subtracted). The comparative figure as at 30th June 1992 has not been restated as the excess value at that date is not considered to be material.

4. Cash flow statement

The Trust has taken advantage of the exemption from the preparation of a cash flow statement, on the grounds that it qualifies as a small company.

THE ATLANTIC SALMON TRUST LIMITED

NOTES FORMING PART OF THE FINANCIAL STATEMENTS

YEAR ENDED 30TH JUNE 1993

1. STATUS OF THE COMPANY

- (i) The company is limited by guarantee and does not have share capital. Every member of the company undertakes to contribute to the assets of the company in the event of its being wound up while he is a member, or within one year after he ceases to be a member, for the payment of the debts and liabilities contracted before he ceased to be a member, such amount as may be required, not exceeding £5.
- (ii) The company is a registered charity and, as such, is exempt from taxes under the provisions of the Income and Corporation Taxes Act 1988.

2. TANGIBLE FIXED ASSETS

	Freehold property	Office equipment	Motor car	Publicity caravan	Tracking equipment	Total
Cost or valuation:						
At 30th June 1992	41,831	13,193	13,790	3,000	8,865	80,679
Additions	-	282	15,199	393	-	15,874
Revaluation increase (below)	7,669	-	-	-	-	7,669
Disposals	-	-	(13,790)	-	(4,169)	(17,959)
At 30th June 1993	£49,500	£13,475	£15,199	£3,393	£4,696	£86,263
Provision for depreciation:						
At 30th June 1992	-	7,542	7,754	1,800	8,865	25,961
Charge for the year	-	2,149	3,436	339	-	5,924
Released on disposals	-	-	(7,754)	-	(4,169)	(11,923)
At 30th June 1993	£ -	£ 9,691	£ 3,436	£2,139	£4,696	£19,962
Net book values:						
At 30th June 1993	£49,500	£ 3,784	£11,763	£1,254	£ -	£66,301
At 30th June 1992	£41,831	£ 5,651	£ 6,036	£1,200	£ -	£54,718

Valuation of freehold property

The increase in value over historical cost is based on a report dated 18th May 1993 by a firm of qualified valuers in Pitlochry, Perthshire.

3. QUOTED SHARES AND SECURITIES

The quoted shares and securities are valued at mid market prices, based on a report dated 1st July 1993 by the investment managers to the Trust.

4. DEBTORS AND PREPAID EXPENDITURES

	1993	1992
Income tax recoverable: dividends and covenants	1,366	3,663
Sponsored projects: contributions receivable	6,740	-
Postal fishing auction: proceeds receivable	3,000	-
Dividends and interest receivable	2,240	-
Fourth International Atlantic Salmon Symposium	-	3,667
Other debtors and prepayments	1,956	2,551
	£15,302	£ 9,881

THE ATLANTIC SALMON TRUST LIMITED
NOTES FORMING PART OF THE FINANCIAL STATEMENTS

YEAR ENDED 30TH JUNE 1993

5. CREDITORS AND ACCRUED EXPENDITURES	1993	1992
Postal Fishing Auction: share of proceeds payable	2,850	1,710
Progress Report: June 1993 (1992): printing and distribution costs	3,116	2,961
Investment management fee	-	3,282
Inland Revenue: income tax and social security contributions	3,067	1,949
Projects: contributions payable for the financial year	1,500	10,400
Audit and accountancy fees	2,803	2,511
Fourth International Atlantic Salmon Symposium	-	5,391
Other creditors and accrued expenditures	1,943	1,202
	<u>£15,279</u>	<u>£ 29,406</u>

6. ACCUMULATED FUND	
At 30th June 1992	662,240
<u>Deduct:</u>	
Deficit for the year transferred from Summary Income and Expenditure Account	435
<u>At 30th June 1993</u>	<u>£661,805</u>

7. RESERVES				
At 30th June 1992				171,527
Transferred from Summary Income and Expenditure Account (below)	32,464	139,063	-	112,657
	46,193	58,795	7,669	
<u>At 30th June 1993</u>	<u>£78,657</u>	<u>£197,858</u>	<u>£7,669</u>	<u>£284,184</u>
 <u>Transfers to Reserves during the year:</u>				
Realised gains on disposals of quoted shares and securities	46,193	-	-	46,193
Unrealised gains: increase in market value:				
Quoted shares and securities	-	58,795	-	58,795
Freehold property: Scottish Headquarters	-	-	7,669	7,669
<u>As above</u>	<u>£46,193</u>	<u>£ 58,795</u>	<u>£7,669</u>	<u>£112,657</u>

8. RECONCILIATION OF MOVEMENTS ON CAPITAL AND RESERVES	1993	1992
Surplus for the year	45,758	2,737
Other recognised gains relating to the year	66,464	19,482
	112,222	22,219
Opening capital and reserves	833,767	811,548
<u>Closing capital and reserves</u>	<u>£945,989</u>	<u>£833,767</u>

9. DEFERRED CONTRIBUTIONS		
Sponsored projects:		
Justerini & Brooks Limited:		
Rehabilitation of Spanish rivers and French hatchery	12,000	
Other sponsored projects:		
Fish counter development	12,220	
Sea trout cage experiment	4,648	
Contribution by D.J. Hoare Green Bottle Trust to Atlantic Salmon Conservation Trust (Scotland)		28,868
		6,500
		<u>£ 35,368</u>

THE ATLANTIC SALMON TRUST LIMITED

NOTES FORMING PART OF THE FINANCIAL STATEMENTS

YEAR ENDED 30TH JUNE 1993

10. INVESTMENT MANAGEMENT FEE

The investment management fee of £3,282 for the previous accounting period ended 30th June 1992 was based on the value of the Trust's investment portfolio as at that date, calculated at 0.35% of the total value of quoted investments and cash deposits managed by Schroder Investment Management Limited, the Trust's former investment managers.

The Trust's present investment managers, Greig Middleton & Co Limited, do not charge an investment management fee as such but levy brokerage charges on all purchases and sales of quoted investments. In accordance with standard accounting practice, such charges are capitalised, ie, added to the basic cost of acquisitions or deducted from sales proceeds. The brokerage charges are therefore reflected in the capital costs of all newly acquired quoted investments, or in the realised gains or losses on disposals and do not therefore feature in the income and expenditure account. This accounting treatment will be consistently applied to future periods.

During the accounting period ended 30th June 1993, the total brokerage charges on quoted investments purchased or sold by Greig Middleton & Co Limited on behalf of the Trust amounted to £2,563, representing 0.28% of the value of quoted investments and cash deposits of £909,895 as at that date.

11. SPECIAL PROJECTS SPONSORED BY OTHER ORGANISATIONS

	<u>Project costs</u>	<u>Sponsorship contribution</u>	<u>Contribution deferred</u>	<u>Net costs</u>
(i) <u>Justerini & Brooks Limited</u>				
Interaction of farmed and wild salmon	18,149	(15,000)	-	3,149
Rehabilitation of Spanish rivers		(6,000)	6,000	-
Rehabilitation of French hatchery		(6,000)	6,000	-
	<u>£18,149</u>	<u>£(27,000)</u>	<u>£12,000</u>	<u>£3,149</u>
(ii) <u>Other sponsorships</u>				
Loch Morar sea trout improvement: Scottish Hydro Electric Plc	4,878	(4,878)	-	-
Sea trout studies: Hope & Shiel and others	5,468	(3,900)	-	1,568
Fish counter development: anonymous	4,030	(16,250)	12,220	-
Sea trout cage experiment: Highlands and Islands Local Enterprise Companies	5,244	(8,892)	4,648	1,000
	<u>£19,620</u>	<u>£(33,920)</u>	<u>£16,868</u>	<u>£2,568</u>
<u>Total sponsored project costs and contributions</u>	<u>£37,769</u>	<u>£(60,920)</u>	<u>£28,868</u>	<u>£5,717</u>

12. PROJECTS FINANCED BY THE ATLANTIC SALMON TRUST

Stochastic model development: sea trout studies: Institute of Freshwater Ecology	5,000
Impact study on Donegal Salmon populations: Belfast University	1,500
Sea temperature and smolt run studies	594
Bensinger-Liddell Memorial Fellowship: student research	<u>2,718</u>
<u>Total Atlantic Salmon Trust financed project costs</u>	<u>£ 9,812</u>

THE ATLANTIC SALMON TRUST LIMITED
NOTES FORMING PART OF THE FINANCIAL STATEMENTS
YEAR ENDED 30TH JUNE 1993

13. <u>OPERATING DEFICIT (SURPLUS 1992)</u>	<u>1993</u>	<u>1992</u>	
	£	£	
The operational deficit for the year is after charging:			
Depreciation of tangible fixed assets	5,924	6,242	
Loss on disposal of tangible fixed asset	556	-	
Directors' emoluments	43,727	42,352	
Auditor's remuneration	1,469	1,591	
	<u>51,676</u>	<u>49,885</u>	
14. <u>STAFF COSTS INCLUDING PROJECT PERSONNEL</u>	<u>1993</u>	<u>1992</u>	
Salaries	78,790	69,842	
Social Security costs	<u>7,889</u>	<u>7,071</u>	
	<u>86,679</u>	<u>76,913</u>	
15. <u>DIRECTORS' EMOLUMENTS</u>	<u>1993</u>	<u>1992</u>	
Services as directors	<u>£43,727</u>	<u>£42,352</u>	
16. <u>STAFF NUMBERS</u>			
The average number of persons employed by the Trust during the year (including project personnel) amounted to 6 (1992: 6).			
17. <u>COVENANTED DONATIONS</u>			
At the current basic rate of income tax (25%), the gross annual equivalent of the net covenants unexpired at 30th June 1993 (231 covenants) is estimated at £46,000 (1992 : £49,000), as under:			
Years ending 30th June: 1994	14,400		
1995	9,700		
1996	7,400		
1997 and later years	<u>14,500</u>		
	<u>£46,000</u>		
18. <u>FUTURE FINANCIAL COMMITMENTS</u>			
The Trust has agreed to future financial contributions in connection with the following projects:			
	<u>Years ending 30th June</u>		
	<u>1994</u>	<u>1995</u>	<u>1996</u>
	£	£	£
(i) The Atlantic Salmon Conservation Trust (Scotland): Salmon stock enhancement	25,000		
(ii) University of Leicester: Spawning of wild and hatchery precocious male salmon parr	3,000		
(iii) Queens University of Belfast: P. McGinnity student fellowship	1,500		
(iv) Salmon Research Agency of Ireland: "What Makes a Sea Trout"	3,000	3,000	
(v) Tweed Foundation: joint Atlantic Salmon Trust and Tweed Foundation population management studies	1,250	1,250	1,250
(vi) Nottingham University: gyrodactylus studies	500		
	<u>34,250</u>	<u>4,250</u>	<u>1,250</u>

DEED OF COVENANT

TO THE ATLANTIC SALMON TRUST LIMITED

(Registered Charity No. 252742)

I promise to pay you for years, or during my lifetime, if shorter, such a sum as after deduction of income tax at the basic rate amounts to £..... each month/quarter/half year/year from the date shown below.

Signed and delivered

Date

Full Name (BLOCK CAPITALS)

Address (BLOCK CAPITALS)

..... Post Code

Witnessed by:

Signed

Full Name

Address

..... Post Code

THE ATLANTIC SALMON TRUST LIMITED

BANKER'S ORDER

Subscriber's To Bank plc
Bank

Branch Address

.....

..... Post Code

Please pay to BANK of SCOTLAND, 76 Atholl Road, Pitlochry PH16 5BW (80-09-41) for the credit of THE ATLANTIC SALMON TRUST LIMITED, account No. 00890858 the sum of £ (..... pounds) on the (i) day of 19... and a like amount on the same day each (ii) month/quarter/half year/year for a total period of (iii) years. Total number of payments

Signed Date 19...

Name (BLOCK CAPITALS) A/C No.

Address (BLOCK CAPITALS)

..... Post Code

-
- (i) This date must be the same as or later than the date on which the covenant is signed.
 - (ii) Please delete as appropriate.
 - (iii) Insert number of years (minimum four years).

ATLANTIC SALMON TRUST PUBLICATIONS

Atlantic Salmon: Planning for the Future (Proceedings of the 3rd International Atlantic Salmon Symposium, Biarritz, 1986)	edited by D. Mills and D. Piggins	£ 45.00
The Biology of the Sea Trout (Summary of a Symposium held at Plas Menai, 24-26 October, 1984)	by E.D. Le Cren	1.50
Salmon Stocks: A Genetic Perspective	by N.P. Wilkins	1.50
Report of a Workshop on Salmon Stock Enhancement	by E.D. Le Cren	1.50
Salmonid Enhancement in North America	by D.J. Solomon	2.00
Salmon in Iceland	by Thor Gudjonsson and Derek Mills	1.00
A Report on a Visit to the Faroes	by Derek Mills and Noel Smart	1.00
Problems and Solutions in the Management of Open Seas Fisheries for Atlantic Salmon	by Derek Mills	1.00
Atlantic Salmon Facts	by Derek Mills and Gerald Hadoke	0.50
The Atlantic Salmon in Spain	by C.G. de Leaniz, Tony Hawkins, David Hay and J.J. Martinez	2.50
Salmon in Norway	by L. Hansen and G. Bielby	2.50
Water Quality for Salmon and Trout	by John Solbé	2.50
The Automatic Counter - A Tool for the Management of Salmon Fisheries (Report of a Workshop held at Montrose, 15-16 September, 1987)	by A. Holden	1.50
A Review of Irish Salmon and Salmon Fisheries	by K. Vickers	1.50
Water Schemes - Safeguarding of Fisheries (Report of Lancaster Workshop)	by J. Gregory	2.50

Genetics and the Management of the Atlantic Salmon	by T. Cross	2.50
Fish Movement in Relation to Freshwater Flow and Quality	by N.J. Milner	2.50
Acidification of Freshwaters: The Threat and its Mitigation	by R. North	3.00
Strategies for the Rehabilitation of Salmon Rivers (Proceedings of a Joint Conference held at the Linnean Society in November 1990)	by D. Mills	5.00
Salmon Fisheries in Scotland	by R. Williamson	3.00
The Measurement and Evaluation of the Exploitation of Atlantic Salmon	by D.J. Solomon and E.C.E. Potter	3.00
Salmon in the Sea and New Enhancement Strategies (Proceedings of the 4th International Atlantic Salmon Symposium, St. Andrews, New Brunswick, June 1992)	edited by D. H. Mills	30.00
Surveying and Tracking Salmon in the Sea	by E.C.E. Potter and A. Moore	3.00

FILMS AND VIDEO CASSETTES AVAILABLE FOR HIRE

"Will There Be a Salmon Tomorrow"	- 16 mm film
"Salar's Last Leap"	- 16 mm film
"The Salmon People"	- Video (VHS)
"Irish Salmon Harvest"	- Video (VHS)
"Managing Ireland's Salmon"	- Video (VHS)
"Salmon Tracking in the River Dee"	- Video (VHS)

Films and videos may be obtained from the Trust for private showing by Clubs, Fishery Managers, etc. A donation to AST funds is required in return.

