



Atlantic Salmon Trust Report

WINTER 2003



**The Atlantic Salmon Trust** is a voluntary organisation whose objective is to promote the conservation, protection and improvement of wild Atlantic salmon and sea trout stocks in the countries bordering the North Atlantic Ocean for the public benefit.

It seeks to support the improvement and integration of scientific knowledge and management methods, and works for positive action in the interests of salmon and sea trout to be taken both at public and private levels, on the basis of the best available information.

To achieve this, the Trust:

- advises Government Departments, Members of the Parliaments and Assemblies, and fishery authorities
- promotes and sponsors practical research
- organises workshops to investigate specific problems
- issues regular and special reports and publishes the results of its work

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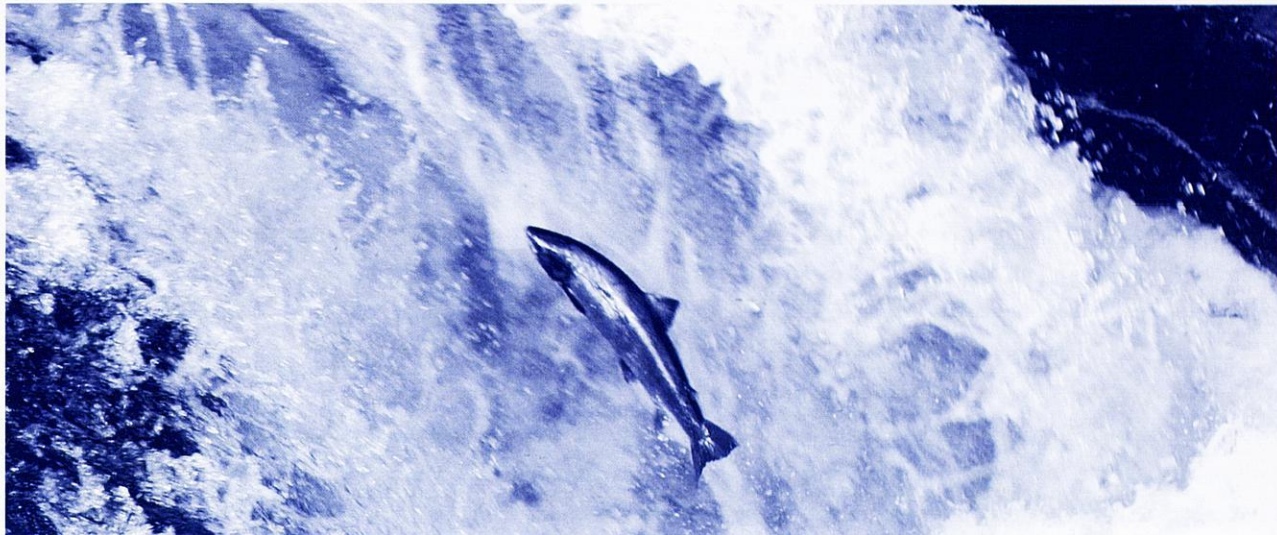
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# From the Chairman



In the last two years we have experienced two contrasting seasons. In 2002 there was too much water in many river systems, whereas this last season there has been a serious lack of water, especially during the summer and early autumn. In general terms, however, somewhat improved runs of late spring fish were followed by indifferent returns of grilse (contributed to by low water conditions) and then by a promising showing of late summer and autumn multi-sea-winter salmon, many of which had difficulty in making progress upstream. While this helped to account for some good catches in the lowest beats in a number of rivers towards the end of the season, overall catch figures for the year are likely to give another disappointing picture.

As for the vital aspect of spawning potential, the major concern has been the delay to fish movement. By the time some fish eventually reached falls and other obstacles higher up, the colder water temperatures by then meant that many were unable to surmount them. While there have been a few early encouraging reports of spawning achievement, the results of fry surveys in 2004 will be significant.

By far the best news of the year, however, has been the agreement to close the greater part of the North East Coast drift net fishery. With the increased Government contribution of a total of £1.25 million, and a substantial level of donations and pledges from Salmon Fishery Boards, other fishery associations and a great many private individuals, the North Atlantic Salmon Fund (UK) was sufficiently confident of support to make a firm offer to the

holders of drift net licences. The 52 out of 68 who accepted had taken on average 80% of the catch, and the £3 million pound deal was concluded in time for their licences to be surrendered before the beginning of the fishery season. It is not yet possible to measure the effect of this significant reduction in interceptory netting effort, particularly in view of the lack of water in so many rivers, but it was encouraging that the summer month counts at Riding Mill on the River Tyne were very much higher than in previous years. Increased numbers of fish should also have entered rivers further up the East Coast when conditions allowed. NASF(UK)'s confidence in its ability to fund the buyout was well justified; at the time of writing the shortfall in the amount needed to meet the second and final tranche of payments, due by the end of May 2004, was estimated to be under £150,000.

This achievement marked significant progress in the fulfilment of the fourth Resolution passed at the Sixth International Atlantic Salmon Symposium, held in Edinburgh by the Trust and the Atlantic Salmon Federation (Canada/USA) in July 2002. This Resolution reiterated the need to continue to work for the ending, with fair compensation, of coastal mixed stock interceptory fisheries. While such fisheries remain, especially the major drift net fisheries off the coast of Ireland, the Trust will continue to pursue this objective. A new move in this respect is the first sign of reaction by the European Commission to a complaint that has been laid by the Wessex Salmon Association against Ireland. This cites the effect of the Irish West Coast fishery on salmon stocks in the Special Areas of Conservation in southern English and Welsh rivers.

The Commission is seeking explanations from the Irish Government, which is already committed to reducing the commercial quotas, albeit to a level that would still be unacceptably high. Developments are awaited with interest, but a buyout similar to that on the North East Coast is likely to be more difficult to achieve.

In the field of salmon research, the Trust has long been convinced of the need to know more about the life of the salmon at sea, especially in the light of the increase in marine mortality that is being experienced all around the North Atlantic. It is thus encouraging that the North Atlantic Salmon Conservation Organisation (NASCO) has set up an International Salmon Research Board (ISRB) to co-ordinate research work at sea, where costs are such that it is essential to amalgamate national resources. The ISRB is working to harmonise national projects, and has launched a campaign to increase governmental funding and to seek additional backing for new projects. Dr Richard Shelton, our Research Director, has been appointed to this Board's Scientific Advisory Group. In this issue, he describes some of the work that is already going on, including investigation of the problem of the by-catch of post-smolts in near-surface pelagic fisheries for mackerel and other species, which was also the subject of one of the Sixth International Symposium Resolutions.

Previous issues have mentioned the Trust's initiative in providing the services of its Field and Research biologist, John Webb, to co-ordinate the provision of scientific support for the conservation and restoration of depleted salmon and sea trout stocks in the West Highlands. A report by the Director summarises the background to this appointment, which has been made by the Tripartite Working Group, and describes how the task is being undertaken.

In July, the A K Bell Memorial Library in Perth accepted on long-term loan the extensive library of fishing books which Mr David Clarke (Chairman 1983 to 1988) had left to the Trust. He wished his library to be as accessible as possible to all who have an interest in salmon and trout, and in the sport of angling, but there is not space at the Moulin office to house the books appropriately, or to provide facilities for readers. The Bell Library has readily agreed to provide secure custody for the books, and is making them freely available for study on the premises. Selected volumes from the collection, which ranges from early nineteenth century gems to modern classics, many from beautifully bound limited

editions, are on public display. This loan was well publicised in the angling press; the full list of titles appears on our website, and can be forwarded to any supporter who is interested.

Finally, I have to report that Jeremy Read retires at the end of March after sixteen years of outstanding and dedicated service to the Trust, initially as Deputy Director and for the last six and a half years as Executive Director. Jeremy has been at the heart of all the Trust's endeavours and activities all these years, and I know I speak for the Board of Directors, and all members and supporters of the Trust when I say how grateful we all are to him for his untiring and painstaking endeavours.

Jeremy will be replaced by Seymour Monro, who comes to the Trust after a long and distinguished Army career. He has many contacts in public life and in the countryside, is a keen sportsman, conservationist and photographer, and has travelled widely. He is much looking forward to continuing the Trust's drive to conserve, protect and improve wild salmon and sea trout stocks.



H F O Bewsher



# News



Armathwaite, River Eden

## England and Wales

### Aspects of the Year

By Tim Hoggarth, Deputy Director

#### Proposal for an Inland Water Fisheries Bill

Sadly, little progress is being made with regard to a proposed Bill to address those recommendations of the Salmon & Freshwater Fisheries Review which were accepted by the Government, but which require primary legislation. I had a meeting with the Head of the Salmon & Freshwater Fisheries Division, during which it was made clear that the Division was still pressing for a Bill to be included in the business programme for the next parliamentary session. It was emphasised that the Trust would be disappointed by the possible alternative of using a Government "Hand-out" Bill (one sponsored by an MP who is successful in the ballot for a Private Member's Bill) to introduce this package. Subsequently, our Vice-President, Lord Moran made further enquiries to establish whether or not any progress was being made, and was advised that there would be no room for the Bill in the next session. However, no draft Bills emanating from the Department for the Environment, Food and Rural Affairs (DEFRA) were included in the twenty-three that were listed in the Queen's Speech on 26th November 2003. Although the Government has indicated that there are a further eight Bills

which could be included in the legislative business programme, it appears unlikely that these will include one that will address inland fisheries. The Moran Committee (which brings together the whole range of fishery organisations in England and Wales) is pressing for a meeting with the Minister for Fisheries, Water and Nature Protection, in order to impress on him the need for a speedy resolution to a saga which has been dragging on since 1998.

#### Environment Agency Matters

There continue to be reports that suggest that all is not well with the continuing implementation of the WATERBRITE reorganisation, in the fishery context. As a result, the Moran Committee has suggested that Baroness Young, the Chief Executive, should attend a meeting to bring members up to date on progress.

Whilst some ten Fishery Action Plans are now being developed in areas where there is sufficient local stakeholder input, the Trust is concerned that after six years only twenty catchments, out of one hundred and twenty, have started the process. The Agency has indicated that implementation delays have been caused by a lack of resources, money and manpower.

David Clarke has completed his time in office as the Environment Agency's Head of Fisheries, and has now moved to an area management post in Wales. The Trust has benefited considerably from his sage advice and guidance during his time at the Agency's headquarters at Rio House, and extends to him its thanks and best wishes for the future. At the time of writing, his successor has yet to be appointed.

### **Impending Legislation**

The Trust has responded to all stages of the consultative process regarding the Bill for the implementation of the Water Framework Directive. This has included the Technical Requirements consultation in November. The Trust has made it very clear that it regards this as being one of the most important pieces of legislation currently under review, and considers that it is essential that it adequately safeguards the interests of fisheries and angling. Although the proposals should lead to the introduction of broader ecological objectives and, where necessary, the restoration of the structure and function of aquatic ecosystems, scant reference has been made to fisheries matters. We have especially highlighted our concerns regarding diffuse pollution, water abstraction and the protection of spawning areas. We have also responded to the consultation on trading rights for water abstraction licences, and have made the point strongly that the concept is only acceptable providing the application and usage of these rights does not in any way impact on the environment, water quality and river flows. In particular, we have highlighted the point that abstraction for environmental purposes should always be considered as a "reasonable need" and that an environmental impact utility test should be a mandatory part of the abstraction licensing process.

The Trust's response to the consultation on the renewal of Spring Salmon Conservation Measures is being included in the

Moran Committee's reply. We have argued that the nation-wide requirement to return all fish caught before 16th June should be dropped. Our view is that such conservation measures should be established at a local level, and not within a national blanket approach. Local people understand the immediate effects of these measures, not only in conservation but also in socio-economic terms, and thus should be allowed to make decisions appropriate to local conditions. We particularly emphasised the value of voluntary measures, and the new understanding of the efficacy of catch and release.

### **CLA Game Fair**

Due to both costs and the difficulty of long-distance towing of the Trust's caravan, our only formal presence south of the Border is now at the CLA Game Fair. In 2002, at Broadlands, the Trust experimented with having a stand within the Salmon and Trout Association (S&TA) enclosure. This worked extremely well, and we were much indebted to the Association for allowing us to use their facilities. We followed the same format for the CLA Game Fair at Harewood House in 2003, with considerable success, and will be enjoying the S&TA's hospitality once again in 2004, from 23rd to 25th July, at Blenheim.

### **International Sea Trout Conference**

A reminder that this conference, which the Trust is helping to sponsor, is being held at Cardiff University from 6th to 8th July 2004. Applications for registration forms can be made to: Samantha Emmot (Conference Co-ordinator), Cardiff University, Southgate House, Bevan Place, PO Box 533, Cardiff CF14 3XZ  
Tel: 02920 875117 Fax: 02920 874990.  
Email: Sea-Trout-Symposium@Cardiff.ac.uk



*A tributary of the River Fowey*

# Scotland

## 2003 – Big challenges, little water

By Andrew Wallace, Director,  
Association of Salmon Fishery Boards

2003 will be remembered principally for the extended period of low water that dominated most of Scotland throughout large parts of the year. However, whilst conditions were far from ideal for fishing through much of the year, with the exception of a few back-end rivers that did remarkably well in the latter part of the season, the general impression at the end of the season is of a stock of fish in moderately good shape. As we have come to expect, the early spring was poor but late spring/early summer stocks were, for the large part, solid with good numbers of exceptionally high quality and sizeable fish. The grilse picture was highly distorted by the low water but end of season fish counts and redd counts seem to suggest that, though patchy in places and by no means remarkable, the grilse runs were satisfactory. Again water conditions distorted the picture of the strength of back-end stocks but counts and observation suggests that in most places there is no shortage of spawning stock.

One of the issues that came very much under the spotlight in the late summer, as a consequence of the low flows was the high numbers of fish caught by the remaining commercial nets, particularly on the North and East Coasts. The Association intends to look at this important management issue with the Scottish Executive and the Salmon Net Fishing Association of Scotland in the New Year and will be wrestling with the inevitable tension which exists between the protection of the principle of willing buyer/willing seller and those now well understood international principles that support the argument for the control and closure of mixed stock fisheries.

On a more positive note, albeit perhaps not the best of years to initiate such work, considerable effort is now being devoted to the promotion and development of Scotland's fisheries. For many years now Scotland has relied heavily on its historical reputation as a salmon producing country and it is beginning to experience the chill wind of market forces. With ever growing interest in fishing abroad and perceptions, often wrong, of a decline in the quality of our fisheries, Scotland needs to think quickly about



how to develop, promote and protect what are, without doubt some, of the finest salmon fisheries in the world.

With significant improvements in management combined with an encouraging control of rod exploitation (in 2002 42% of all Scottish salmon were released) and salmon stocks in reasonably good shape, it is time for Scotland to start making more of that vital virtuous circle: more fishermen – more revenue – more investment in management – more fish – more fishermen. A number of rivers have grasped the nettle and are using web based technology to promote their rivers. The web based marketing initiative *Fishtweed.co.uk* was joined in 2003 by *Fishdee.co.uk* and in 2004 by *Fishtay.co.uk* as a further part of this system. A fisheries promotion working group has been established to look at how information about all Scottish fisheries (salmon, trout, coarse and sea) can be better presented whilst at the same time ensuring good linkage to sound management. This in turn dovetails with the Countrysports Tourism Development Group which Scottish Enterprise and VisitScotland are playing an active role in. For too long the fisheries sector has complained about poor promotion and lack of support but little effort has been made to present a product to bodies such as VisitScotland that they can understand. Now that this process is underway we are finding that there is considerable enthusiasm from public bodies to develop a sector which they recognise has high value, has a long season, is sustainable and which has international appeal. There will be those to whom the words 'marketing', 'product development', 'branding' etc sit uneasily with the sport we all know and love,



but if Scottish salmon fishing is to be recognised as the important rural employer and economic activity we claim it is then we have to raise our game. Protecting the integrity and principles of the sport should not be a problem with careful handling.

Dovetailing with this is the long awaited Scottish Executive economic survey on the value of angling to Scotland. This report will be published early next year and all indications are that the report will reinforce the message about the economic importance of angling to the rural economy. A conference to launch the report is being considered for the Spring of 2004 and will complement neatly the initiatives referred to above.

On another front the work on the impacts of aquaculture has again dominated much of our work in 2003. In partnership with the Atlantic Salmon Trust and Association of West Coast Fisheries Trusts a great deal of work has been going into developing area management agreements (AMAs) between fish farmers and wild fisheries interests on the West Coast. Initiatives on stock restoration, containment, relocation and establishing criteria for co-ordinated management of salmon farms have all made progress this year. West Coast salmon and sea trout stocks are showing patchy recoveries in some places whilst in others the situation is still very bleak.

Systems such as the Hope, Polla, Carron, Lochy, Awe and many of the Western Isles fisheries have shown promising signs of

continuing recoveries of both salmon and, in places, sea-trout stocks. Efforts are now being made to establish precisely why it is that some systems seem to be improving and others not and, as ever, the picture is complex and multi-factorial. We are still some years off a solution for some of the hardest hit West Coast systems.

A further initiative which has borne fruit in 2003 has been the conclusion of the work of the Fisheries Co-ordination Group, chaired by Ian Gregg. This group, inspired by the Fishmongers' Company who invest heavily in Scottish fisheries management projects, was established to look at how the key organisations, of which the AST is one, can better work together. The group has concluded that a closer and better co-ordinated working relationship could be achieved through a Fisheries Management Working Group which will meet regularly and attempt to prioritise, organise and rationalise some of the work we are all involved in. Objectives under consideration include: the development of the fisheries trust network in Scotland and an accompanying Association; the development of a communications and media strategy; continued work into developing appropriate training programmes; the establishment of a Forum to encourage participation from the wider fisheries/angling community and the development of a more effective fund-raising capability. This will all have to be achieved from within existing resources, but it is hoped that this working arrangement will provide a discipline within which all these organisations can work more effectively together.



## Help for West Coast Salmon and Sea Trout Stocks

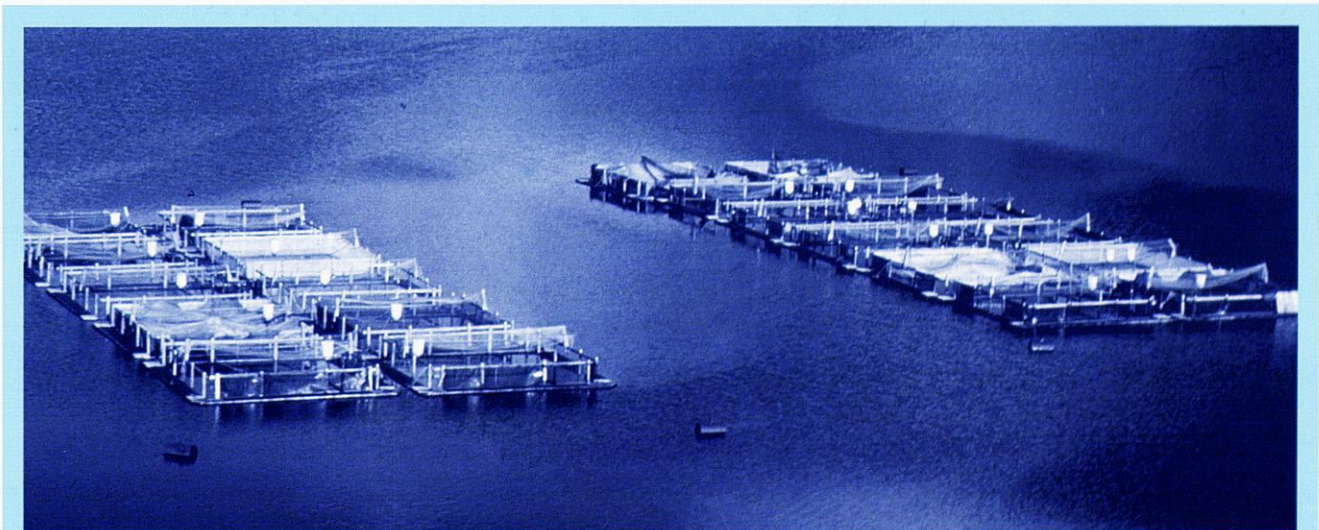
By Jeremy Read, Executive Director

Readers of previous Winter Reports will be aware of how the Atlantic Salmon Trust helped to inspire the formation of the Tripartite Working Group (TWG). This has brought together Government, wild fishery organisations and salmon farmers to co-operate in the development and implementation of aquaculture management practices that protect stocks of wild salmon and sea trout. To date nine Area Management Agreements (AMAs) have been signed. These aim to take forward this process at a local level, with actions that include the adoption of co-ordinated fallowing and treatment strategies to meet the target of zero egg-bearing female sea lice (especially at smolt migration times). Other potential agreements are being discussed.

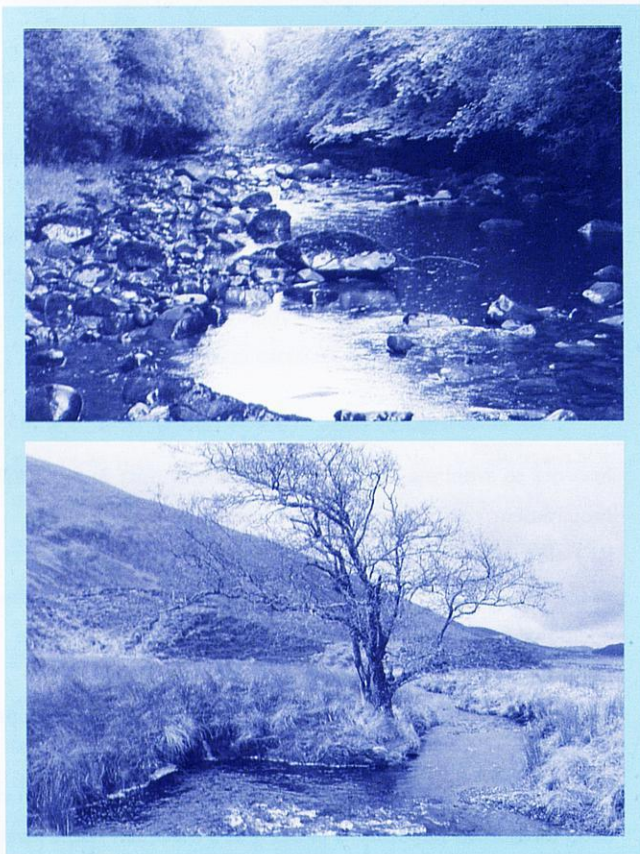
During the early days of the Working Group, participants recognised the need to prepare for the time when sea lice control would be sufficiently effective to justify the undertaking of work to redress the depletion, and in some cases the collapse, of wild stocks. A Restoration Sub-group of the TWG was accordingly set up. The sub-group established the principle that the responsibility for the planning and implementation of restoration projects would remain with Salmon Fishery Boards and individual proprietors, and that the Scottish Executive (through its agencies including Fisheries Research Services) should provide scientific support for this work. This would cover the furnishing of advice during the development of projects, and the capability to carry out an evaluation of the resulting plans.

As progress is being made with sea lice control, and it has become practical to consider restoration work, it became clear that action was needed to develop a mechanism for the provision of this scientific support. The Restoration Sub-Group was reconvened, with representatives of the interests involved, particularly including the Biologists of the West Coast Fisheries Trusts. This sub-group confirmed the need to be able to obtain advice on a range of subjects during the planning stages, and agreed value of a facility for the evaluation of projects, both for providing confirmatory peer review and to help establish the confidence of potential funding organisations. It was recognised that there was only a limited number of people in a position to provide this advice, and to undertake the evaluation process. This suggested the requirement for a co-ordinator to establish a support system, to avoid duplication and overload in the handling of requests, and to facilitate communication and the spread of information.

In order to avoid the need to establish a new post to meet this requirement, the Trust offered to make available John Webb, its Field and Research Biologist, to undertake the task as part of his duties. Scottish Natural Heritage agreed to provide some additional funding to assist in this, and his appointment as the West Coast Salmonid Stock Conservation and Restoration Support Co-ordinator was confirmed on 1 April 2003. This title is something of a mouthful, but both functions are important. Put simply, "conservation" in this context means action taken to keep threatened populations in being at a minimum viable level, at the least (i.e. to stop the situation getting worse), and "restoration" means work for the support or augmentation of



populations so as to recover previous levels. For many people, stocking will be the aspect that springs instantly to mind, but other factors, including habitat aspects, and other possible actions need to be taken into account before stocking is undertaken. If it is, there are many considerations that apply if it is to make a real contribution and, just as importantly, avoid damage to the remnants of existing populations.



*Contrasting river habitats – R. Aray (Loch Fyne) and R. Carron (Wester Ross)*

John Webb has been busy setting up the support organisation. An important part of this preparation has been that of visiting all the West Coast Trust areas, to familiarise himself with the detail of local situations and requirements, to learn of current strategies for restoration, and to discuss his plans for the handling of requests for advice and support. At the time of writing, this initial programme of visits is almost complete, but he is in frequent communication with many of the Trust Biologists, and will be spending much time returning for follow-up consultations. He has developed the idea of project profile sheets – these are effectively planning tools for setting out all the factors that need to be taken into account in contemplating and planning a project, and they will make it easier to put

requests for advice into a clearly established context. At the same time, he is working for the development of a basic general framework of the principles that should govern stock conservation and restoration work in the Scottish West Coast environment. This will not only provide guidance to those who are conceiving and planning projects, but it will also help to ensure consistency in the provision of advice and the evaluation of plans. The factors that are involved include the selection and management of broodstock for hatchery operations, which is especially important when the number of adult fish returning to their native rivers is very small, and there is a risk that even these may include fish of farmed or hybrid origin.

This methodical approach is intended to provide the best-based body of information for providing the soundest and most appropriate support, but John recognises that there are already many urgent decisions that have to be made, and that need answers which cannot wait for the rather more formal routine that is under development. Questions and requests for advice can be put at any time, and are being handled as soon as they are received.

An important aspect of the work is that of making information as widely available as possible, and a range of methods is planned. The framework document described above will form the basis of a general guide, but it will be vital to share information as it is gained. Work is going on in many countries, and the North Atlantic Salmon Conservation Organisation (NASCO) is in the process of producing general guidance on stock restoration, and this will contribute to the early development of both basic and locally oriented advice for the West Coast situation, and will guide restoration work elsewhere in the UK. A website will allow new national and overseas scientific developments to become widely known, and will encourage exchange of lessons learned from the case experience of actual projects. Among other proposed publications, it is hoped that a stand-alone general code of practice for hatchery operations will be produced in order to ensure that the best guidance is available, especially on the use of limited numbers of broodstock.

The initial term of the post is for three years, but an extension is clearly probable, given its scope. John Webb can be contacted through Fisheries Research Services on 01224 295346 (E-mail: [webbj@marlab.ac.uk](mailto:webbj@marlab.ac.uk)).

## Feature



*A post-smolt in a haul of mackerel*

# Protecting Salmon at Sea

By Richard Shelton, Research Director

Low levels of marine survival, on average only a third to a half of those prevailing during the peak years of the 1960s and early 1970s, continue to pose problems for salmon fishery managers. We do not know what the precise mechanisms are: how much death rates have increased directly because of changes in the abundance and distribution of large predators like seals and dolphins, and how much may be the result of poor early growth by some of the young salmon themselves. Certainly the longer that fish remain small, the greater their chance of being eaten, and not just by large predators; fish-eating birds and a variety of mid-water fishes like spurdogs and fish of the cod family pose a real danger to young salmon in their first weeks at sea.

For the salmon populations that return to spawn in the rivers of Great Britain and Ireland, the lowest return rates are currently being suffered by the earliest running ones. It has been apparent for over a decade that many early-running populations, which include early grilse, are too weak to support other than catch and release angling. Later running fish have fared better, but in dry seasons like that of 2003, when the main summer runs of both multi-sea-winter salmon and grilse have been forced to spend long

periods exposed to seals, dolphins and interceptory netting in the dangerous waters of the coastal and estuarine zones, even their capacity to provide an exploitable surplus cannot always be assumed.

However conservatively we manage our salmon fisheries and promote the production of smolts through habitat and stock enhancement, such sensible responses in no way diminish the need to tackle the sea survival problem head-on. Recent research undertaken by the Sir Alister Hardy Foundation for Ocean Science (partly financed by the Trust) has shown how changes in marine climate have greatly altered the balance of planktonic communities in the north east Atlantic, to the detriment of krill production and that of other organisms important to salmon in their early months at sea. There is no short term answer to such climatically-driven changes which form part of a world-wide shift in the productivity patterns of sub-polar seas. Depressing as this knowledge is, it does not mean that there is nothing further to be gained by continuing to study the biology of salmon at sea. On the contrary, it is the key to protecting them from inadvertent interception by fisheries for other species like herring and mackerel.

We have known since the mid 1990s that post-smolts, and indeed older salmon, spend much of the daylight hours in the top few metres of the sea, where, until the comparatively recent development of high speed trawling at the surface they were largely invulnerable to inadvertent capture. This new method of fishing is now one of the main techniques used by Eastern European factory trawlers, prosecuting the summer fishery for mackerel in the international zone of the Norwegian Sea. The problem posed for the salmon is critically dependent upon the degree of overlap between the northward migration route followed by the young salmon and the distribution of the mackerel. Unfortunately, both species appear to follow the edge of the Continental Shelf. The post-smolt salmon migrating north from the British Isles and southern Norway do so until they reach a sea bed feature called the Vøering Plateau where they disperse into the system of gyres (large eddy-like current systems) to its north. Figure 1 shows the conjectured migration routes – the blue dots indicate the locations where post-smolts have been caught by research vessels. The young salmon are most at risk if the mackerel fishery takes place over the Shelf Edge before the post-smolts have entered the gyres (Figure 2).

Fortunately, and here is the first piece of good news, in the summer of 2003 the Eastern European mackerel fishery took place well to the south-east of the northward migrating smolts. The second cause for optimism is that careful fishing trials, undertaken the same year by the Norwegian Research Vessel, *Johan Hjort* – trials in which I had the privilege of taking part – demonstrated that, in full daylight, the 'by-catch' of young salmon could be virtually eliminated by dropping the head line of the trawl by 5 metres so that the net was not taking fish from the immediate surface. We are less sure about the behaviour of young salmon at night. They appear to leave the surface but how deeply they dive and whether they continue to feed we do not know. Neither do we know what routes salmon from our eastern rivers take to reach the edge of the Continental Shelf. Seeking the answers to such questions, which are critical to providing adequate protection for migrating salmon, will form part of future research proposals currently being drawn up by the Scientific Advisory Group to the International Atlantic Salmon Research Board of NASCO.

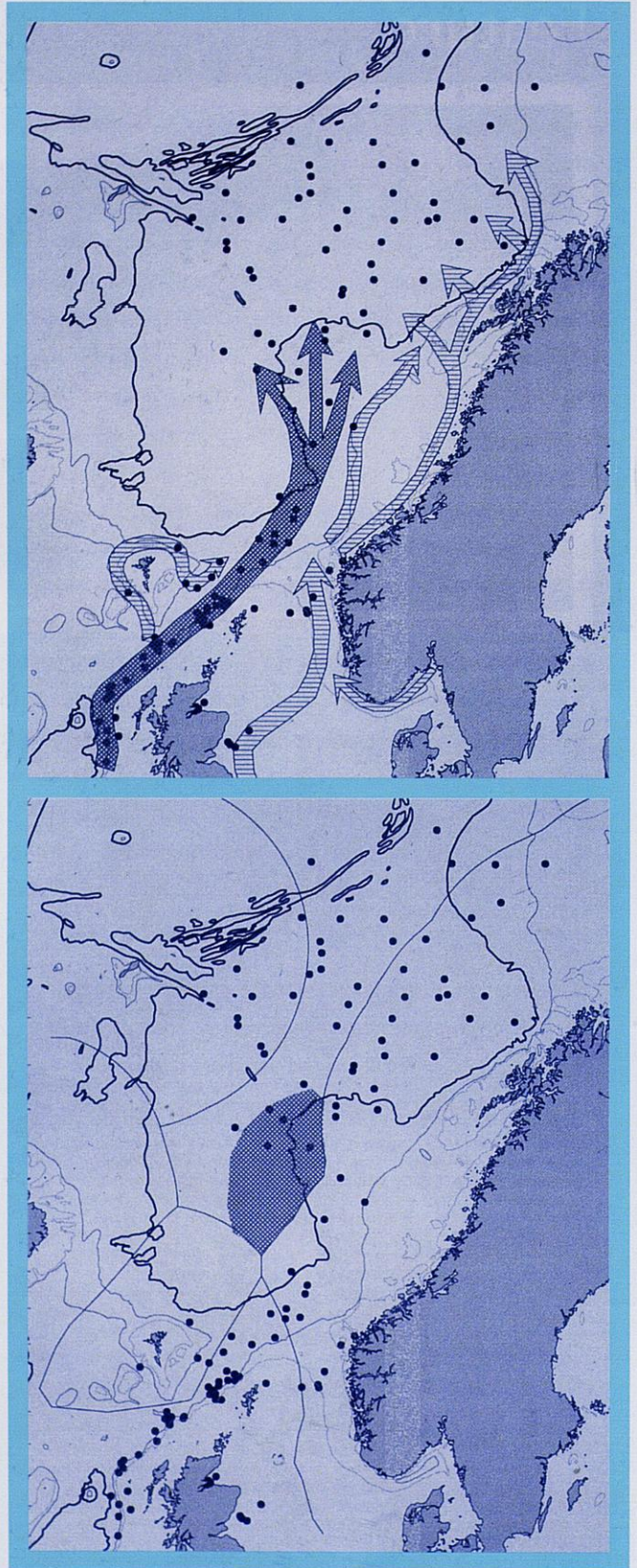


Figure 1, Top: Migration Routes

Figure 2, Bottom: Mackerel Fishery Area

# Atlantic Salmon Trust Reports

## Biologist's Report

### Summary of work in 2003

By John Webb – Field and Research Biologist

#### Main projects:

##### January-May

**Detection of Infectious Pancreatic Necrosis in alevins and fry in wild salmonid redds in the vicinity of rainbow trout farms and fisheries** (Fisheries Research Services/AST).

The Infectious Pancreatic Necrosis (IPN) virus is a pathogen of salmonid fish (e.g. salmon, brook trout and rainbow trout) with a worldwide distribution. IPN is a severe threat, ecologically and economically, to the freshwater and marine aquaculture industry and is the cause of significant losses in hatcheries and among older fish being grown on in sea-cages.



Ebrie Burn (Ythan) – IPN investigations carried out here

There is increasing interest in the possible prevalence of the disease in wild stocks of salmon, trout and other fish. A collaborative project has been undertaken between the Aquaculture and Animal Health team at the Fisheries Research Services (FRS) Marine Laboratory and the Trust, as part of the larger ongoing programme of study by FRS into the occurrence of the IPN virus in wild fisheries resources in Scotland.

In the autumn and early winter of 2002 the AST's biologist undertook a programme of fieldwork to locate, mark and map natural redds in the vicinity of four different rainbow trout rearing units and fisheries on tributaries of the rivers Tay, Dee and Ythan. The marked redds were subsequently excavated

in the spring of 2003, and random samples of alevins and yolk-sac fry were removed for disease testing in the laboratory. In this instance, all of the samples that were subsequently tested were found to be negative.

##### January-December

**The SALGEN Project** (AST/Fisheries Research Services and others).

The SALGEN Project is an EU-funded project, running from October 2001 to March 2004, for which the Trust is acting as co-ordinating agent. It involves a major programme to review and collate international genetic studies on Atlantic salmon in order to increase understanding and improve the effectiveness of wild stock conservation and rebuilding programmes in Europe.

A book entitled 'The genetic management of wild Atlantic Salmon' will be published in 2004 as part of the output from the project. John Webb is the principal author of a chapter on the biology of the Atlantic salmon, which also includes contributions from other researchers based in Scotland, Canada, Finland and the USA.

A further output of the project will be the development and publication of a guidance manual for fishery managers on genetic considerations in planning stock restoration and enhancement work. This will be published as an Atlantic Salmon Trust Blue Book.

##### April-December

**Conservation and Restoration Co-ordinator** (AST/Scottish Natural Heritage/Fisheries Research Services).

This is described earlier in this report in the article 'Help for West Highland Salmon and Sea Trout Stocks'. It has been one of the major components of the work undertaken during the period.

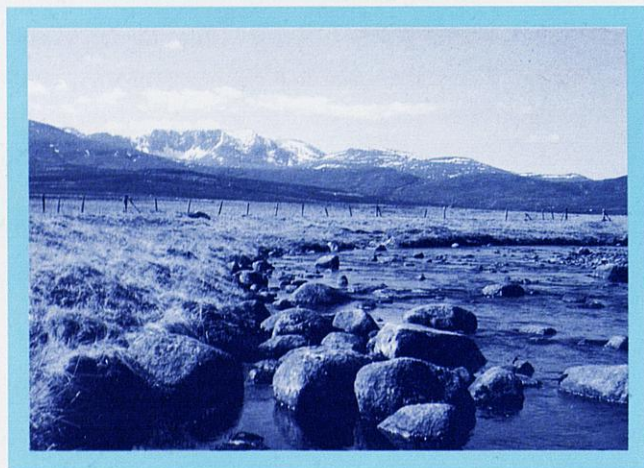
##### June-December

**Discharge and geomorphic controls of the distribution of spawning in upland streams** (University of Aberdeen/AST).

This project is a further development of the ongoing collaborative research project between the Trust and the Geography Department of the University of Aberdeen. The study focuses on two upland spawning streams in Scotland. Field surveys have revealed differences in the patterns (in space

and time) of discharge use by spawning salmon in the two streams. These differences can be explained by the contrasting physical characteristics of the streams on a catchment scale, reflecting their different glacial histories. However, despite these important differences, a similar range of relative flows (as a proportion of the normal range of flows) were utilised.

These results suggest the feasibility of developing a generic, catchment-scale spawning flow assessment tool. Such a tool would be very useful for the purposes of assessing the flow requirements for spawning as part of pre- and post-development impact studies, in respect of water abstraction and management works.



Girnock Burn (Dee) – an upper spawning tributary

#### Meetings and workshops (January-November)

This year has seen attendance at some thirty meetings and public events. These have included:

- Participation in two SALGEN workshops.
- An Association of West Coast Fishery Trusts workshop on Habitats at Kinlochewe.
- A SEPA River Basin Management meeting at Aberdeen
- A meeting of "Tweed 21C."
- A strategic planning meeting of the new Loch Lomond Fishery Trust.
- Field-site meetings with managers, superintendents, proprietors and representatives of angling groups on the rivers Oykel, Dee, Morar and Ugie.
- Discussions with representatives of SEERAD and FRS with regard to current and future research at the Freshwater Laboratory, Pitlochry.
- Assistance with manning of the Trust's display caravan at the Scone Game Fair in July.

#### Atlantic Salmon Trust Advisory Service

The Trust's basic advisory service continued to operate in 2003. One hundred and thirty seven enquiries (to the end of the year) were handled. As in previous years, the enquiries have covered a wide range of salmon-related subjects from many areas of the United Kingdom, and prompted a number of field meetings, as reported above.

#### Presentations:

In early June, a presentation entitled 'Conservation and Restoration of West Coast Salmonid Stocks: towards the development of an Advisory, Education and Project evaluation support infrastructure' was given to the Tripartite Working Group sub-group 3 (Restoration) at their meeting in Pitlochry. A further presentation was also given to the sub-group at their meeting in mid-September.

In late September a presentation on the management of early running salmon populations was given at the Annual General Meeting of the Kyle of Sutherland Fishery Board.

#### Publications and conference papers

A paper entitled 'Linking channel geomorphic characteristics to spatial patterns of spawning activity and discharge use by Atlantic salmon (*Salmo salar* L.) in two upland streams' by Moir, Gibbins, Soulsby and Webb, has been accepted for publication in the journal *Geomorphology*. The paper is the result of a collaborative project between the University of Aberdeen, the Atlantic Salmon Trust and the FRS Freshwater Fisheries Laboratory in Pitlochry. The paper describes the patterns of flow utilisation by spawning salmon in two upland streams and how local physical characteristics of the river channel influence the patterns observed (see project reports above). Dr. Moir (University of Aberdeen) presented a summary of this work at the annual meeting of the American Fisheries Society, in Quebec City, in September.

Following the IPN research detailed earlier in this report, a presentation was given at the Conference of the European Association of Fish Pathologists in Malta, September 2003 by Dr. R. Raynard of the FRS Marine Laboratory. It was entitled 'Investigation into the prevalence of infectious pancreatic necrosis virus in wild fish from Scotland' by Wallace, Raynard, Gregory, Murray, Adamson, MacDonald, Warwick, Smail, and Webb. A paper describing the work will be produced and submitted for publication in due course.

# Support of Projects

## How the Trust backs scientific and salmon management research

The Atlantic Salmon Trust continues to pursue its original task of promoting and supporting practical research, aimed at maintaining and improving wild salmon and sea trout stocks.

The Trust is directly involved in the completion of the Baddoch Spring Salmon Project, which is a principal activity of John Webb, the Field and Research Biologist, and is described below. The Trust also provides direct support from its own resources for projects conducted by other institutions. These projects are selected by its own Honorary Scientific Advisory Panel. In addition, the Trust manages the financing of projects sponsored by a number of other organisations.

A summary of all this activity follows.

### Continuing major project

#### ***Maximising progeny numbers from natural and artificial spawning – the Baddoch Spring Salmon Project***

This is the Trust's principal research project, and has been responsible for a large proportion of the effort of John Webb. The project involves the investigation of individual "families" of fish (identified by DNA techniques) in the Baddoch Burn, an upland tributary of the Aberdeenshire Dee. The work has compared their early behaviour, and is examining their survival in fresh and salt water, in relation to their parentage and the location and nature of their stream habitat. It has progressed from fieldwork to detailed analysis and evaluation, to support the preparation of significant guidance for population management, habitat restoration and stock enhancement. Formal reporting of this analysis has been delayed by competing priorities for supporting researchers, but it has contributed significantly to the SALGEN Project which is described below. John Webb's work is being supported by an extremely generous grant from the Westminster Foundation.

### Projects directly supported by the Trust:

#### **a. In 2001/2002**

#### ***Predation and scavenging along spawning streams in Scotland***

**£4000**

This investigated the extent of predation in upland streams, primarily by otters at spawning time, and its significance in affecting spawning success. The final report revealed a significant level of predation and examined the implications for the assessment of spawning targets.

#### ***Application of Continuous Plankton Recorder***

#### ***data to the interpretation of UK catch statistics***

**£6000**

Following the 1998 AST workshop on the Ocean Life of Salmon, this established a correlation between data on plankton distribution in the Northwest Atlantic Ocean and downward trends in catches and home water abundance. It indicated a possible cause of increased salmon mortality at sea.



#### ***The use of DNA to identify salmonid material in seal scats***

**£4000**

This study has validated the use of DNA analysis techniques in identifying soft remains from salmon and sea trout in seal faeces. These techniques avoid the current reliance on detecting salmon otoliths (small bones in the head), and should help to identify the location of predatory activity as well as providing better quantitative assessments. The work was followed up in 2003 by Fisheries Research Services, who collected a substantial number of field samples in the Moray Firth area.

**b. In 2002/2003**

**Long-term salmon changes in relation to plankton and climatic viability** £5000

Building on the previous year's work, which established correlation between data on plankton distribution and downward trends in catches, this identified significant changes in plankton production and distribution, which suggest one cause of increased salmon mortality in the sea. Follow-on work has been recommended to the NASCO International Atlantic Salmon Research Board.

**Indices of marine survival and freshwater productivity: a low-tech approach** £4000

This project validated the use of snorkelling techniques to estimate populations in West Highland rivers not equipped with counters or fish traps, and was described in an article in the summer Newsletter. The report included a practical guide to the conduct of snorkel surveys.

**Relationships between stream morphology and micro-habitat requirements in upland streams** £4000

This followed earlier research on the relationship between water flow and spawning performance and continued to develop the basis for a general tool for assessing the quality of different spawning habitats.

**c. In 2003/2004**

**Interpreting rod catch data: River flow, catchability and angler effort** £2500

This expands on discussions from the Trust's 2001 Catch Data Workshop, and is seeking to improve ability to make use of raw catch data in the estimation of trends in population levels. It is based on Scottish data, but is also taking account of information from rivers in England and Wales.

**Discharge and geomorphic controls of the distribution of spawning in upland streams** £1600

This is work to round up previous studies supported by the Trust on the effect of flow rates on spawning performance, and aimed at the production of a system for assessing the effect of changes in flow as a result of works or abstraction.

*Note: Very few applications for support were received for consideration in 2003, and the Trust has tried to encourage a better response in 2004. In calling for new applications, advice has been*

*sought from the Biologists of Fisheries and River Trusts as to subjects that would be of particular value to them. It has also been made clear that the Trust will be particularly interested in projects that could have a bearing on the problem of increased salmon mortality at sea.*

**Principal projects financed in whole or part by other organisations**

**a. In 2001/2002**

**Investigation of salmon behaviour in Borland lifts** £20,000

The conclusion of the examination of actual salmon movement during the operation of Borland lifts at hydroelectric dams in Scotland. It is being utilised in the establishment of optimum design and operating regimes. This project was financed by Scottish Hydro Electric.

**Feasibility study for a West Highland**

**Salmonid Stock Restoration Facility** £15,800

This was the conclusion of an investigation of the concept of a central facility for rearing captured smolts to maturity. The aim was to overcome the shortage of returning adult broodstock for use in stock restoration projects for rivers affected by salmon farming. The study was financed by the Crown Estate, Highland Council, Highlands and Islands Enterprise, Scottish Natural Heritage and the Atlantic Salmon Trust, and managed by the Trust. The study recommended against proceeding with a central facility, but has provided a significant input to planning for support for stock restoration.

**Kelt reconditioning** £6,000

A continuation of the previous year's project in conjunction with stream habitat restoration in the upper tributaries of the River Wye.

**b. In 2002/2003/2004**

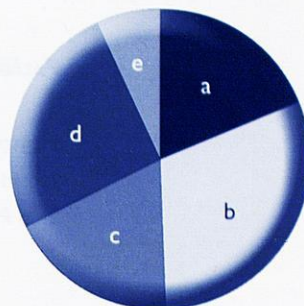
**The SALGEN Project**

This is a major EU-funded project, launched in October 2001, and running until the end of March 2004, for which the Trust is acting as co-ordinating agent. It has involved a major programme to review and collate international genetic studies in order to increase understanding and improve the effectiveness of wild stock conservation and rebuilding programmes in Europe. An important product will be the development and publication of guidance for fishery managers on genetic implications in planning stock restoration and enhancement work. The total budget is **€269,000 (£164,000)**

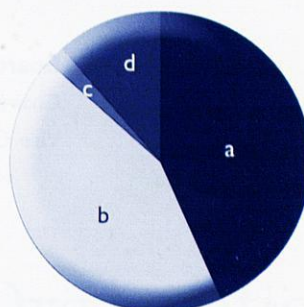


# Financial Report for the Year to 31 March 2003

<b>Income</b>	<b>£</b>
a) Investment Income	37,694
b) Donations	61,720
c) Postal fishing auction	36,516
d) Restricted funds from other organisations	51,254
e) Other income	13,881
<b>Total</b>	<b>201,065</b>



<b>Expenditure</b>	
a) Advancement of salmon conservation – unrestricted	121,408
b) Advancement of salmon conservation – restricted	121,142
c) Publicity expenditure	5,743
d) Management, administration and finance	31,999
<b>Total</b>	<b>280,292</b>



**Net outgoing resources** –79,227

<b>Net Movement in Funds</b>	
Net outgoing resources – unrestricted	–9,339
Net outgoing resources – restricted	–69,888
Unrealised loss on investment portfolio valuation	–302,328
Realised loss on disposal of shares and securities	–43,010
<b>Total</b>	<b>–424,565</b>

The reported figure of £9,339 for net unrestricted outgoing resources represents an operating surplus of £226, less a depreciation charge of £9,565. In 2001/2 the operating deficit, including depreciation, was £28,967. Restricted resources can only be used for the purpose for which they are given; the 2002/3 net expenditure of £69,888 takes account of a 2001/2 net income of £86,125.

## Balance Sheet

<b>Assets</b>	
a) Tangible fixed assets	57,957
b) Net current assets	47,554
c) Investment assets	731,518
	<b>837,029</b>

In 2002/3 there was a large reduction in the value of the investment portfolio, resulting from the general stock market situation. The fall of £302,328 in the value of investments held mainly represented the loss of previous gains, but an actual loss of £43,010 was incurred on the sale of certain investments. There has since been a significant recovery.

<b>Reserves</b>	
a) General reserves	786,401
b) Property revaluation reserve	13,169
c) Restricted funds	37,459
	<b>837,029</b>

In November 2003 the Trust transferred its investment management to the Charities Aid Foundation. At that date a recovery of £125,625 had been realised, with a net actual loss of £60,345 on the portfolio transferred. It is anticipated that the move will achieve greater investment stability in the future.

# AST Direction and Management

Company registered in England. Reg. No. 904293

Registered Charity No. 252742

**Patron:** HRH The Prince of Wales

## **Honorary Officers**

President: The Duke of Wellington

Vice Presidents: Dr. Wilfred M. Carter

The Lord Nickson

The Lord Moran

Rear Admiral D.J. Mackenzie

## **Board of Directors of the Atlantic Salmon Trust Ltd**

Chairman: Colonel H.F.O. Bewsher

Vice Chairman: Major General John Hopkinson

Mr. James Carr

Mr. Robert Clerk

Mrs. Elizabeth Macdonald Buchanan

Mr. Michael Martin

Mr. Robert Scott-Dempster

Research Director: Dr. Richard Shelton

Executive Director: Mr. Jeremy Read (to be relieved on 31 March by

Maj. Gen. The Hon. S.H.R.H. Monro)

Finance Director: Mr. John Gray

**Company Secretary:** Mr. Timothy Hoggarth (Deputy Director)

## **Committee of Members**

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Mr. Malcolm Borthwick

Mrs. Annie Boyd

Lt. Col. Robert Campbell

The Rt. Hon. Dr. Jack Cunningham MP

Mrs. Susan Garrett-Cox

Mr. Robin Greville Williams

The Baroness Golding

The Lord Guernsey

Mr. David Hodgkiss

Mr. Michael Hollingbery

Mr. John Lovett

Mr. Jamie McGrigor MSP

Dr. Derek Mills

Mr. Algernon Percy

Mr. Hugo Upton

Mrs. Anne Voss-Bark

*The Hon. Sir Charles Morrison has demitted office after much valuable service*

## **Invited Representatives of Other Organisations**

ASF (Canada)

ASF (USA)

AIDSA (France)

Association of Salmon Fishery Boards

Countryside Alliance

Fishmongers' Company

Salmon & Trout Association

Spey Trust

Mr. John E. Houghton

Mr. Donal C. O'Brien Jr

Madame Sylvie Tissier

Miss Jean Matterson

Mr. Tony Andrews

Mr. Anthony Duckworth-Chad

Mr. T.A.F. Barnes

(A Representative)

# Honorary Scientific Advisory Panel

R.G.J. Shelton, B.Sc., Ph.D., F.R.S.A. (Chairman)

G.J.A. Kennedy, B.Sc., D. Phil., F.I.F.M. (Department of Agriculture and Rural Development)

Professor John Solbé, M.B.E., D.Sc., C.Biol., F.I.Biol., F.I.F.M.

D. Solomon, B.Sc., Ph.D., M.I.Biol., M.I.F.M.

D. Summers, B.Sc., Ph.D., M.I.F.M. (Tay Salmon Fisheries Board)

W.R. Turrell, M.Sc., D.I.C., Ph.D., F.R.M.S. (Marine Laboratory, Fisheries Research Services)

J.L. Webster, B.Sc., Ph.D., C.Biol., M.I.Biol. (Scottish Quality Salmon)

K. Whelan, B.Sc., Ph.D. (Marine Institute of Ireland)

J. H. Webb, B.Sc., M.Sc., M.I.F.M. (AST Field & Research Biologist)

## Observers:

N. Milner, B.Sc., Ph.D. (Environment Agency)

A. Moore, B.Sc., Ph.D. (Centre for Environment, Fisheries & Aquaculture Science)

M. Beveridge, B.Sc., Ph.D., M.I.E.E.M. (Freshwater Laboratory, Fisheries Research Services)

# International Conservation Organisations

with which the Trust is in contact

France:	Association Internationale de Défense du Saumon Atlantique
Canada and U.S.A.:	Atlantic Salmon Federation
Germany:	Lachs und Meerforellen Sozietat
Ireland:	Federation of Irish Salmon & Sea Trout Anglers
Spain:	Asturian Fishing Association of Oviedo



# Atlantic Salmon Trust Publications

Title		£
<b>The Biology of the Sea Trout</b> (Summary of a Symposium held at Plas Menai, 24-26 October 1984)	E.D. Le Cren	1.50
<b>Salmon Stocks: A Genetic Perspective</b>	N.P. Wilkins	1.50
<b>Salmonid Enhancement in North America</b>	D.J. Solomon	2.00
<b>Salmon in Iceland</b>	Thor Gudjonsson & D.H. Mills	1.00
<b>Atlantic Salmon Facts</b> (Revised May 2003 by R.G.J. Shelton & J.B.D. Read)	D.H. Mills & G. Hadoke	f.o.c
<b>The Atlantic Salmon in Spain</b>	C.G. de Leaniz, A.D. Hawkins, D. Hay & J.J. Martinez	2.00
<b>Salmon in Norway</b>	L. Hansen & G. Bielby	2.00
<b>The Automatic Counter – a Tool for the Management of Salmon Fisheries</b> (Report of a Workshop held at Montrose, September 1987)	A. Holden	1.50
<b>A Review of Irish Salmon and Salmon Fisheries</b>	K. Vickers	1.50
<b>Water Schemes – Safeguarding of Fisheries</b> (Report of Workshop at Lancaster)	J. Gregory	2.50
<b>Genetics and the Management of the Atlantic Salmon</b>	T. Cross	2.50
<b>Fish Movement in Relation to Freshwater Flow and Quality</b>	N.J. Milner	2.50
<b>Acidification of Freshwaters: The Threat and its Mitigation</b>	R. North	3.00
<b>Strategies for the Rehabilitation of Salmon Rivers</b> (Proceedings of a joint Conference held at the Linnean Society in November 1990)	D.H. Mills	5.00
<b>Salmon Fisheries in Scotland</b>	R. Williamson	3.00
<b>The Measurement and Evaluation of the Exploitation of Atlantic Salmon</b>	D.J. Solomon & E.C.E. Potter	3.00
<b>Salmon in the Sea and New Enhancement Strategies</b> (Proceedings of the 4th International Atlantic Salmon Symposium, St. Andrews, New Brunswick, June 1992)	edited by D.H. Mills	30.00
<b>Surveying and Tracking Salmon in the Sea</b>	E.C.E. Potter & A. Moore	3.00
<b>Problems with Sea Trout and Salmon in the Western Highlands</b>	edited by R.G.J. Shelton	3.00
<b>Automatic Salmon Counting Technologies – A Contemporary Review</b>	G.A. Fewings	3.50
<b>Salmon in the Dee Catchment: The Scientific Basis for Management</b> (Proceedings of a one day meeting held at Glen Tanar House, 13 October 1994)	A. Youngson	3.50

# Atlantic Salmon Trust Publications

Title		£
<b>Spring Salmon</b>	A. Youngson	3.00
<b>Enhancement of Spring Salmon</b> (Proceedings of a one day Conference held at the Linnean Society of London 26 January 1996)	edited by D.H. Mills	12.00
<b>Water Quality for Salmon and Trout</b> (second, revised edition)	J. Solbé	3.50
<b>Salmon Fisheries in England &amp; Wales</b>	W. Ayton	3.50
<b>The Industrial Fishery for Sandeels</b>	A.D. Hawkins, J. Christie & K. Coull	3.00
<b>Fish Counters</b> (Proceedings of an AST/IFM Seminar held in Perth on 4 April 1997)	edited by A.V. Holden & G. Struthers	3.00
<b>The Ocean Life of Atlantic Salmon</b> (Proceedings of a Workshop held in November 1998) <i>Price reflects 50% discount available on orders placed by AST supporters</i> P+P: UK £2.50, Europe £3.50, Rest of world £5.00.	edited by D.H. Mills	37.50
<b>Habitat Restoration for Atlantic Salmon</b>	David W.J. Smart	12.50
<b>The Interpretation of Rod &amp; Net Catch Data</b> (Proceedings of a Workshop held at the Centre for Environment, Fisheries & Aquaculture Science, Lowestoft November 2001)	edited by R.G.J. Shelton	7.50
<b>Predation of Migratory Salmonids</b> (Assessment of a Workshop held in Edinburgh on 11-12 April 2000, made by the Chairman, Professor Fred Last OBE)		1.00
<b>Salmon at the Edge</b> (Proceedings of the 6th International Atlantic Salmon Symposium, Edinburgh, July 2002) <i>Price reflects discount available on orders placed by AST supporters</i>	edited by D.H.Mills	50.00

## FUNDING THE TRUST – HOW YOU CAN HELP

- By a single donation – cash or cheque.
- By regular contributions through a Banker's Order.
- If you sign a Gift Aid declaration, your donation will be worth almost a third more to us at no extra cost to you – for every £1 you donate, we can claim an additional 28p from the Inland Revenue. (We can only reclaim tax if you are a UK tax payer.)
- By gifting stocks and shares to the Trust. You will receive relief on Capital Gains Tax and personal income tax for the value of the gift.
- By remembering the Trust in your Will. A bequest to charity is free of Inheritance Tax.

*Please contact us on 01796 473439 for more information on any of these points. The Trust has no official funding and is financed entirely by private contributions, so you can be sure that your support is needed and will be greatly appreciated.*

# Additional Information

## Show appearances 2004

- 3-4 July                    Game Conservancy Scottish Fair, Scone  
23-25 July                CLA Game Fair, Blenheim  
                                  (in *Salmon & Trout Association Enclosure*,  
                                  by kind permission)  
6-7 August                Highland Field Sports Fair, Moy

Visit us at one of these shows to meet the team, get the latest information on our work, and pick up copies of our publications and posters.

## “Salmon at the Edge”

The Proceedings of the Sixth International Atlantic Salmon Symposium, which was held in Edinburgh in July 2002, have been edited by Dr Derek Mills, and published by Blackwell Scientific. This volume contains the papers delivered at the Symposium, which focused on the problems facing salmon and sea trout during their passage between river and sea, and in coastal waters, and in the early days of their migrations, together with a report of the concluding discussions. It is available, at the discounted price of £50, on application to the AST office.

## “The Best Worker in Europe”

Ted Hughes was a staunch supporter of the Atlantic Salmon Trust. In 1985, the Trust published a limited edition of 156 copies of a poem specially composed by him, in which he contrasted the wonder of the migration and return of the salmon smolt with the desperate hazards that threatened it then, and still do. The numbered copies, hand-set and printed on mould-made paper, illustrated by Charles Jardine and signed by both Author and Artist, were for sale in aid of the Atlantic Salmon Trust's work for wild salmon and sea trout. **Fewer than 40 copies remain unsold.** They are offered, together with a newly drawn additional sketch generously contributed by Charles Jardine – also signed and numbered – at the price of £125. To order, please contact the AST office.

## Northern Tails . . . *An Icelandic Fishing Odyssey*

by Adrian Latimer, price £14.50 Published by the author. All proceeds to the North Atlantic Salmon Fund. Available from Coch-y-Bonddu Books ([paul@anglebooks.com](mailto:paul@anglebooks.com)) and Farlows/Sportfish ([farlows@farlows.com](mailto:farlows@farlows.com)).

Having visited Iceland eight times and fished a number of its rivers and lakes for salmon, sea trout, brown trout and char I was immediately taken back in time on reading Adrian Latimer's Icelandic odyssey. The author has had the enviable opportunity of fishing in many parts of the world of which the average angler can only dream. However, he shares his experiences and doesn't conceal the discomforts and frustrations he's had to endure – low water, muddy water, gale force winds, uncooperative fish and very wet weather. For all that he catches fish and tells us in his inimitable way how and with what flies.

As I've found in his previous books, his style is not simply a fish-catching narrative but also an arresting account of the scenery, the wildlife, the local people and their history. Iceland is such an interesting country and Adrian conveys his excitement throughout his travels to the various rivers such as the Ranga, Kjarra and Breiddalsa it's been his privilege to fish and also the characters sharing his exploits. He suffers no delusions and draws attention to the threats facing this country's valuable angling resource – salmon farming, hydro-electric development and the fishmongering mentality of worm fishers from various countries that denude some rivers late in the season.

Having read this book I know I must return to Iceland. The only constraint is money. Fishing in Iceland is extremely expensive, but if you can afford it you will have no regrets. Read this book and you will just have to go. Derek Mills.

## “A Chieftain's Home in the North of Scotland”

By Jonny Shaw, published by the author. 120 pages, illustrated in colour and black and white, and supported by diagrams. Price £15 (wire-comb) or £18 (bound) plus £1 p&p – £5 from each sale to the Atlantic Salmon Trust.

The story of life in a remote Highland glen, told through the development of a house in a beautiful riverbank setting between two salmon rivers, an ancient Caledonian pinewood and the high hills dividing the east from the west coast. A woodsman's bothy is transmogrified into the home of the heads of Clan Ross, receives a touch of “Balmorality” from a Kimberley diamond king, followed by a Marquis whose family saved the life of Robert the Bruce.

Available (cheques made out to “Amat Estate”) from Amat, Ardgay, Ross, IV24 3BS.

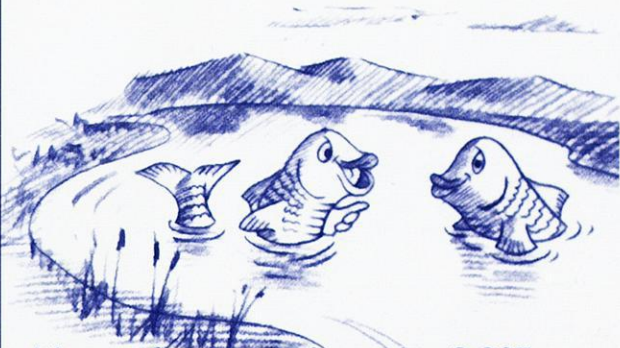
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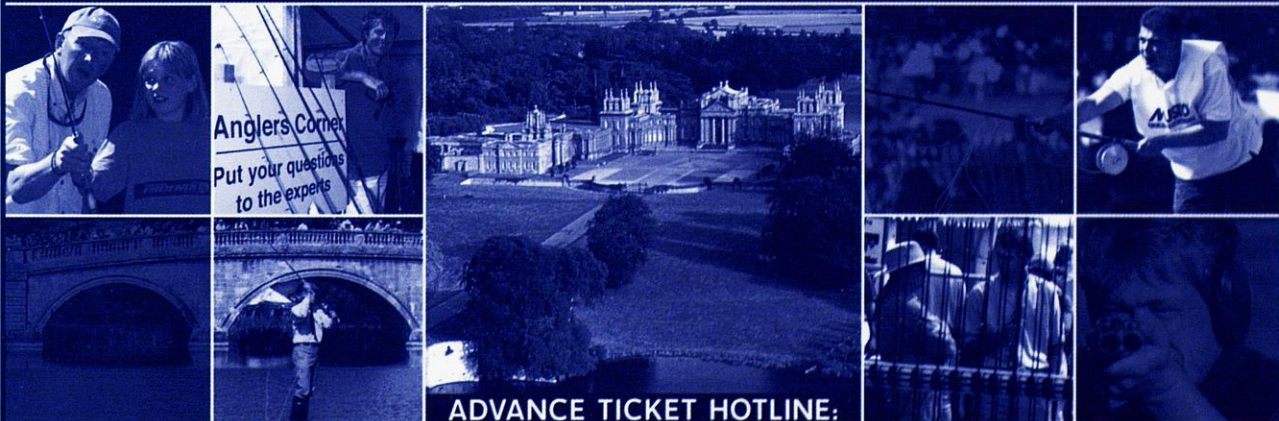
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