



scalereadings

Summer 2004

The newsletter of The Atlantic Salmon Trust

From the Chairman

"Anglers spend a total of £113 million on angling in Scotland, with salmon and sea trout anglers accounting for over 65% – £73 million – of this total!" This was the headline statement made in the research Report undertaken by Glasgow Caledonian University for the Scottish Executive Environment and Rural Affairs Department (SEERAD) entitled "The Economic Impact of Game and Coarse Angling in Scotland". It is of interest that the equivalent calculation for Golf – Scotland's national sport – is £108 million.

We have always suspected that the direct and indirect contribution to the Scottish economy of angling was quite significant. Now it has been quantified in a most credible and definitive way. It begs the question: "What is the equivalent figure south of the Border?" It also begs the question of how much larger that figure of £73 million might be if our stocks became truly sustainable and if those who have chosen to fish abroad spent more time on Scottish rivers?

This Economic Report provides extremely useful information, and thus some levers, for arguments on policy and financial support for the Trust's area of interest: the improvement of wild fish stocks to a sustainable level, and achieving this largely through research and through advice on fishery and habitat management.

The appearance of the Report is extremely timely as the debate begins on primary legislation on fisheries to be introduced by the Scottish Executive in 2006/2007. It will be vital that the Trust plays its part in improving the wild fish knowledge of our legislators and in the key discussions leading up to the draft Bill.

Readers will be pleased to hear that the final payment due to the North East of England drift netmen was made in May. Great credit is due to the NASF(UK) and all those, including members of this Trust, who supported its efforts to buy out the majority of these highly damaging drift nets. Where Scottish coastal mixed-stock interceptory

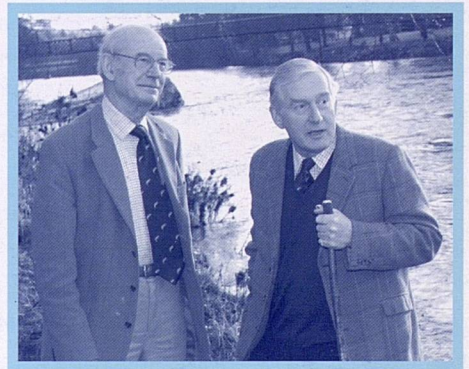
nets, including those in the Montrose Basin, are concerned, endeavours are currently in hand to ascertain whether any of these would be willing to consider a buy-out thereby helping to increase the numbers of fish returning to their natal spawning grounds.

As far as the NASF itself is concerned, Orri Vigfusson has reaffirmed that it is currently focusing its efforts on the removal of – or a substantial reduction in the operation of – the Irish Drift Net fisheries.

In this issue of "Scalereadings" there are reports on fisheries management around the Country, on issues affecting salmon and sea trout and on research. On the inside cover there is a list of our current priorities and activities. I want to highlight the reports on research and to underline that our key priorities remain the answering of some critical marine questions and our support to the restoration of stocks on the West Coast of Scotland. The Trust is always keen to support good research projects and to continue to provide practical advice, but we do need your financial support if we are to continue to do this in a meaningful manner.

It is encouraging to hear that the numbers of spring fish in our rivers country-wide so far this year are significantly higher than for the previous few years. This will be due to a variety of factors but I am sure that at least an element of this increase is because of the hard work of so many organisations and individuals determined to improve the river environment and wild fish stocks.

Finally I want to pay tribute to our recently retired Executive Director, Jeremy Read, who joined the Trust in May 1988 as the Deputy Director and then became the Executive Director in October 1997. He has been unstinting in his labours for the Trust, diligent beyond belief in his advice to everyone and anyone who has sought it and who has become widely respected throughout the world of wild fish and fisheries. We wish him well



Jeremy Read (left) and Seymour Monro

in his retirement in Dorset. We welcome in his place, Seymour Monro, who comes from a distinguished military background and has a lifelong love of country pursuits.

STOP PRESS – NASCO 2004

The 21st meeting of The North Atlantic Salmon Conservation Organisation took place in Iceland from 7-13 June.

Key outcomes:

- The Council, with the support of NGO's including AST, determined to review its future activities to improve conservation efforts.
- Pressure was put on the Republic of Ireland to accelerate the ending of mixed stock drift nets.
- Survival at sea is the key area for future research.
- Dr Ken Whelan, a member of the AST's Honorary Scientific Advisory Panel, was elected President of the Council.

What is the Trust?

- A UK-wide organisation which champions the wild salmon and sea trout – it does not represent any other interests or body, only the fish themselves.
- Works for the conservation and improvement of wild salmon and sea trout stocks to a level which allows sustainable exploitation
- Conducts and supports marine and freshwater research
- Gives practical advice on the management of fisheries and rivers
- Gives independent advice to governments, international and national authorities and to commercial enterprises
- Co-ordinates activities with other conservation, environmental, fishery, heritage and wildlife agencies and organisations
- Holds and supports seminars and workshops to investigate specific issues
- Publishes high quality reports and booklets to inform and educate the public
- Is an independent, registered Charity, with a small staff, which receives no Government funding

What you can do to help

- The Trust is a charity and receives no Government funding
- The Trust is financed solely by contributions from supporters
- You can make a:
 - gift aid donation
 - cash donation
 - contribution to our annual postal fishing auction
 - gift of listed shares
 - provision in your Will
- As a registered 'supporter' – the Trust is not a 'membership' organisation – you will receive regular newsletters, reports and details of the Trust's publications and activities.

Details of how to contact us are below and on back page.

What are the Trust's current activities and priorities?

- Researching the survival of salmon at sea
- Restoring wild salmon and sea trout stocks on the West Coast of Scotland
- Encouraging the reduction of interceptory mixed stock nets
- Improving river habitats and water quality
- Promoting the reduction of industrial and agricultural pollution
- Improving fish farming codes of practice
- Reducing mammal and bird predation
- Researching wild fish genetics
- Financing and supporting other research projects
- Publishing reports and AST 'Blue Books' on research projects and practical management

Who's who in the Trust?

Patron:	H.R.H. The Prince of Wales
President:	The Duke of Wellington
Chairman:	Colonel Bill Bewsher
Vice-Chairman:	Major General John Hopkinson,
Research Director:	Dr. Richard Shelton
Executive Director:	Major General Seymour Monro
Deputy Director:	Tim Hoggarth
Finance Director:	John Gray
Field & Research Biologist:	John Webb
Administrative Officer:	Jenny Sample

Moulin, Pitlochry, Perthshire PH16 5JQ
 Telephone: 01796 473439 Fax: 01796 473554
 E-mail: salmontrust@aol.com
 Web: www.atlanticsalmontrust.org

Around the country

England and Wales

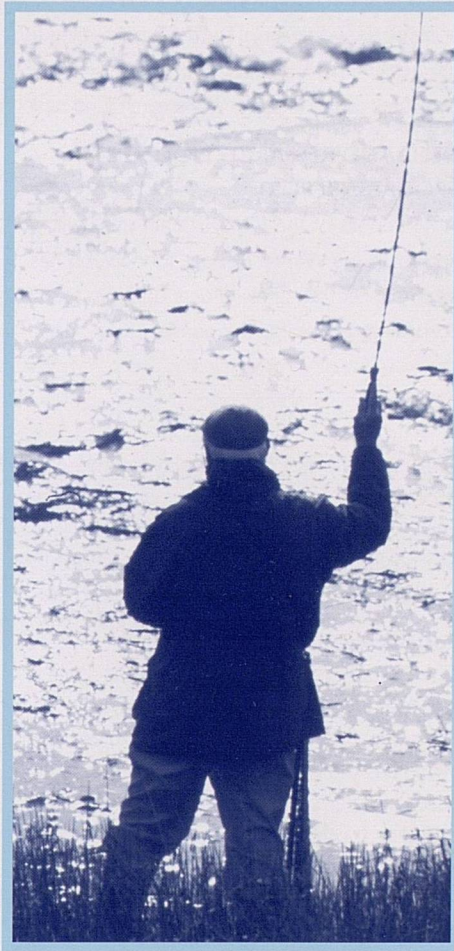
CEFAS Annual Assessment of Salmon Stocks for 2003

The Centre for Environment, Fisheries & Aquaculture Science (CEFAS) published its report on the state of salmon stocks for 2003 in April this year. A number of interesting statistics and observations were included in the publication:

- Licences. Rods were up from 19,352 to 19,605. Short term licences, however, fell from 10,039 to 7,604. Nets were down from 386 to 372. Additionally, of course, the offshore North East (NE) drift net fishery reduced from 68 to 16.
- Catch. Those for rods, including released fish, were down from 15,231 to 10,898. Releases were also down from 7,632 to 5,981. However, this represented an actual 4.8% rise compared with 2002. Nets catches were down from 38,279 to 17,188. Within this, the NE fisheries component was down from 30,982 to 10,415, but still accounted for 60% of the total net catch.
- Unreported and illegal catches were estimated to be around 24 tonnes (21% of total weight of salmon caught and killed, an increase of 5% from 2002).
- Composition of catches. Rods: Grilse 66%, MSW salmon 34% (an increase of 9% for MSW compared with 2002). Nets: Small salmon 48%. Large salmon 52% (this is a new way of reporting the size of net caught fish). Interestingly, 75% of salmon netted in the NE were estimated to be returning to Scottish rivers.
- Spawning escapement was deemed to be above the conservation limit in only 33% of rivers. Thus, the majority of salmon stocks continue to be considered to be "in a depleted state".
- Low flows for most of the season are thought to have inhibited salmon entering rivers, reducing fishing opportunities and thus the fishing effort, and limiting the catch.

Fisheries Bill

At a meeting of the Moran Committee on 29th April Baroness Young (Chief Executive The Environment Agency) confirmed that Richard Cowan, Head of Fisheries Division II, DEFRA, was still continuing to press for a Fisheries Bill. In anticipation of being granted clearance for



this, he was setting in place a drafting team to scope the Bill. Baroness Golding, one of the Trust's Committee of Members, tabled a question in the House of Lords for Lord Whitty, the Parliamentary Under-Secretary of State DEFRA. She asked "what progress had been made in implementing the recommendations of the Salmon and Freshwater Fisheries Review?" His reply was that time for a new Bill had not yet been obtained but that the Government recognised that legislation was needed and would be introduced when time permitted. The Trust continues to press for a Fisheries Bill.

Unity of Angling Proposals

An initial meeting was held at the offices of the Salmon & Trout Association (S&TA) on 19th January to discuss the possibility of forming a unified organisation at a national level which, amongst other things, would be perceived to by Government as being a one stop shop for all angling and fisheries matters in England and Wales. The ideas was to build on the work of the Moran Committee and its current membership and link it with the National Angling Alliance and the Joint Association of

Governing Boards. Consideration would also be given to including the Association of Rivers Trusts, the Welsh Sea Fishery and disabled angling interests. At a series of follow up meetings the structure for and financial implications of establishing such a body were considered in some detail. It was felt that there was a need for a part-time secretariat because the S&TA no longer felt able to continue to offer this on a pro bono basis. The associated costs had yet to be refined in detail but it is clear that unless a source of non-government external funding can be achieved, the possible financial implications could well result in the initiative foundering. Whilst the Trust fully supports any attempts to unify the angling and fisheries communities, it has chosen to reserve its position regarding membership until the full implications of such a move are somewhat clearer.

Scotland

Legislation

It is the Scottish Executive's intention to introduce new primary legislation in 2006/2007 to cover inshore fisheries, freshwater fisheries and aquaculture. In a new way of conducting Executive business, all interested parties are being involved in discussions from the outset. The first meeting of the Freshwater Fisheries Forum Steering Group (FFFSG) met on 7th May and the AST's Executive Director is a member of the Group. It discussed which issues should be included in any legislation and, in particular, the format and agenda for the first 'fisheries Forum' which is to take place in Stirling on 23rd June. Nearly 500 invitations have been sent out and the Fisheries Minister, Allan Wilson, will make the keynote speech. This new legislation will clearly dominate much of our fisheries management work for the next 2 or 3 years.



Management

The Fisheries Management Working Group continues to meet regularly and has been assisting in the setting up of the FFFSG mentioned above. It is also helping to bring to fruition an association of fisheries trusts for Scotland similar to the Association of River Trusts (ART) in England and Wales. In the short term it will be known as the "Rivers and Fisheries Trusts (Scotland)", or RAFTS, and should start to form by January 2005. The Association of West Coast Fisheries Trusts, AWCFT, will become a major part of this new overarching organisation and will be joined by other existing river Trusts and by any new trusts as they form up in the future.

Tripartite Working Group

The Tripartite Working Group, and its sub-group on restoration and conservation chaired by the Executive Director Seymour Monro, continues to meet in order to assist fisheries on the West Coast. The Trust's Field and Research Biologist, John Webb, spends the majority of his time actively involved in advising the Group and more importantly, the biologists and others closely involved with West Coast rivers and lochs. John has visited all the nine fishery Trust areas and in addition to giving regular practical advice has been helping to draw up river management plans.

Research

INTRODUCTION

The rational management of the stocks of salmon and sea trout which return to spawn in the rivers of Great Britain and Ireland is crucially dependent on a proper understanding of their population structure and abundance and of the natural and fishery-related factors which control them. Carefully focused research is the route by which such knowledge is gained and its encouragement and active promulgation are two of the principal objectives of the Trust.

There is general agreement among scientists that reduced survival at sea is currently the greatest single problem faced by salmon and sea trout stocks. It is a problem for two reasons. First it reduces the angler's chances of success and secondly, for certain severely depleted salmon and sea trout populations, the numbers of potential spawners may fall below the level at which safe and sustainable fishing is possible.

Aquaculture

The Highland Council have recently refused planning permission for an application for a new fish farm in Annat Bay near Ullapool. The Council stated that this development would 'detract from the sense of remoteness of Annat Bay' and could have 'adverse impacts' on wild salmon and sea trout. Many letters of objection had been lodged with the Highland Council and the AST had written to the Scottish Executive saying that it could not support the application.

This is the first ever rejection of a proposal for a new fish farm by Highland Council and is thus most significant.

As part of his initial programme of visits, Seymour Monro visited the Marine Harvest hatchery at Invergarry, their farm sites on Loch Linnhe and the processing plant at Fort William. He was accompanied throughout by Dr. John Webster of Scottish Quality Salmon. It was a most interesting tour and he left with a much better understanding of what the industry is trying to do to raise standards, to implement codes of practice and to come to local area agreements.

Seals

The Research Director, Dick Shelton, and the Executive Director visited the Sea Mammal

Research Unit at St. Andrews in March. The new Director SMRU, Ian Boyd, is sympathetic to the predation problem. A major new project to monitor seal behaviour is about to be launched with some financial support from the Trust. In the Moray Firth, James Butler of the Spey District Fishery Board has been working with others to produce a management plan. These initiatives, together with pressure from many quarters, should eventually result in a sustainable and acceptable policy and subsequent plans to deal with the predation of wild salmon and sea trout by seals.



STUDIES SUPPORTED IN 2003

Addressing marine survival problems and identifying opportunities for remedial action remain at the top of the Trust's future research and advisory priorities and are currently being pursued through Dick Shelton's participation in research cruises and in the work of the Scientific Advisory Group that meets to guide the NASCO International Atlantic Salmon Research Board.

Interpreting Rod Catch Data

Important as marine research initiatives are, the capacity of the stocks to sustain themselves ultimately depends on the numbers and distribution of the populations of spawning and juvenile fish in the rivers. For many systems, angling records are the only indication of the well-being of the resource. Using angling records as stock indicators has a number of pitfalls, especially changes in angling effort and the effects of flow on both the availability of the fish and their catchability. During 2003, the Trust supported an innovative analysis of rod

catch statistics in ten British rivers (Usk, Wye, Derwent, Helmsdale, Ness, Spey, Deveron, Aberdeenshire Dee, Tay and Tweed). The results of the analysis showed that, for all their shortcomings, angling records can provide insights into the status of spawning populations provided the complications introduced by flow are borne in mind and, where possible, corrected. The summary conclusions of the study are as follows:

- The flow was most likely to affect the rod catch in the summer months and in the smaller rivers.
- Since the effect of flow differs between rivers and months, the relationship between catch and flow must be determined from data specific to the river and month of concern.
- Fisheries managers should estimate spawning escapement with and without flow correction and consider the escapement to be the lower of the two estimates.

Research continued

Radio Tracking of Salmon in the Cumberland Eden

The other grant-aided investigation supported in 2003 was the detailed tracking of 302 radio-tagged salmon in the Cumberland Eden. As with earlier studies of this kind, overall post-capture survival was high (some 85% when additional stresses introduced by the study are taken into account), once again demonstrating that the release of rod-caught fish is worthwhile when the numbers of potential spawners are low.

The results of the Eden study also showed that early and later running salmon tended to use different parts of the river system, the distance from river mouth to spawning area being inversely related to tagging date.

The value of studies such as this one is the light they shed on the detailed structure of salmon resources and the scope for the most effective focusing of remedial action in both regulating angling and improving the catchment as a habitat for spawning and juvenile salmon.

GRANT AID PROVIDED IN 2004

The Trust's Honorary Scientific Advisory Panel met on 5th May and awarded over £12,000 towards the costs of the following three research projects.



Seal Predation in Scottish Salmon Fisheries

That the increasing numbers of grey seals in the North Sea and the waters around the British Isles are a threat to salmon stocks has long been a major concern to fishery managers. How great that threat is and where it makes itself felt has yet to be fully quantified. Accordingly, during 2004/5 the Sea Mammal Research Unit, with Trust financial support, will undertake a study with the following objectives.

- To what degree do current data about the movements and foraging behaviour of seals indicate that seals make use of salmon rivers for foraging?

- Is it possible to identify specific individuals that are observed regularly at the mouths of Scottish salmon rivers and, thus, show that most predation of salmonids is carried out by a sub-section of the seal population?
- To what extent can information from the seals shot in the salmon fisheries be used to establish which sections of the seal population are responsible for predation?
- What is the total number of seal days spent potentially feeding on salmon and what is the likely impact of this on salmon populations both locally and in general?

Scope and Potential of Microsatellite DNA Markers

The latest developments in the analysis of DNA have the potential both to increase our understanding of the structure of salmon resources and, perhaps in due course, to enable genetic fingerprints to be used as natural tags. During 2004, the Trust will support a critical evaluation of Microsatellite DNA Markers as potential research tools in salmon management.

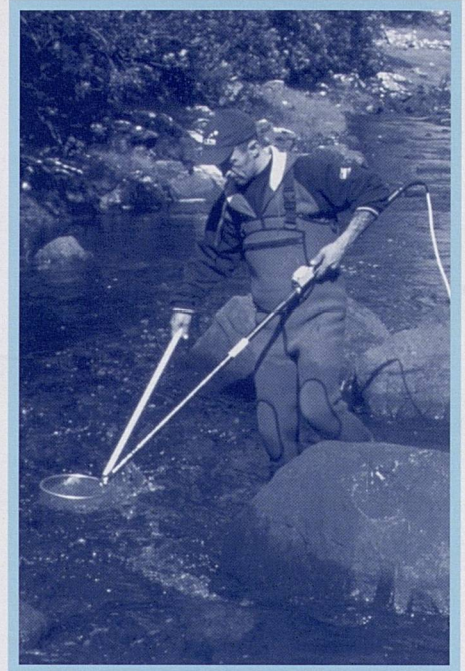
Targeted Electric Fishing on the Cumberland Eden

Valuable as genetic tools can be in unravelling the structure of salmon populations, targeted electro-fishing is still the essential pre-requisite for determining the scope for local remedial action where salmon production is low. The advent of reliable Geographical Information Systems (GIS) has greatly increased the management value of electro-fishing data. The Trust has therefore contributed to an integrated study (for 3 years in the first instance) based on the Cumberland Eden in which electro-fishing and habitat-related data will be combined using GIS technology to provide catchment-wide guidance on the management of a salmon resource.

PRIORITIES FOR MARINE RESEARCH

Despite reductions in directed fishing effort on Atlantic salmon on both the high seas and home waters, rates of return to British rivers are only some 30-50% of those enjoyed in the late 60s and 70s.

Research, partially funded by the AST, has shown that the most important underlying reason for the reduced rates of return is the effect of climatic change on the feeding and survival opportunities for growing salmon during their first year at sea.



There is a good scientific case for investigating the place of salmon in the marine food web in a great deal more detail, not least because it would enable us to predict good and bad years of sea survival and plan accordingly. Such a project would be prohibitively expensive and would take at least a decade. It is nevertheless one initiative under active discussion by the NASCO Scientific Advisory Group with a view to seeking the support of both public and private finance.

Changes in marine climate are not the only problem currently faced by Atlantic salmon. Although the level of directed fishing has been reduced, inadvertent capture of both post-smolt and returning adult salmon continues to take place in fisheries for other species, especially those that take place at the surface for mackerel and herring.

Recent work, in which Dick Shelton has taken an active part, has shown that the salmon are most vulnerable during full daylight when they spend most of their time within 5 metres of the surface. At this time inadvertent capture can be greatly reduced by lowering the headline of mackerel and herring trawls by 5 metres. What we do not know is how deeply the salmon dive at night and we need to know this if we are to protect them at this time. A research cruise to investigate the nocturnal behaviour of salmon would take at least 15 days and would cost some £150,000.

The Trust has also taken part in work which has demonstrated that Atlantic salmon use the

current which flows north along the edge of the Continental Shelf to take them to their main feeding grounds in the Norwegian and Greenland Seas. What we do not know are the routes British salmon take through the North and Irish Seas to reach the Shelf Edge. Once again, knowledge of these routes is essential to enable us to protect the salmon at this time. Given good weather some 3-6 weeks of ship time would be required at a total cost of some £400,000-£500,000.

Trust notice board

Activities

The few Trust staff spend as much time visiting rivers, game fairs, research establishments, seminars, conferences and AGMs as possible. These are welcome diversions from the plethora of committee meetings and an important way of keeping in touch with what is happening at the sharp end.

Show Appearances 2004

3-4 July, Game Conservancy Scottish Fair, Scone
23-25 July, CLA Game Fair, Blenheim
(in the S&TA enclosure)
6-7 August, Highland Field Sports Fair, Moy

Trust Publications

The following publications are available from the Trust's office. Prices on application – most are free of charge – and discounts are on offer – we'd rather they were read than gathered dust on our shelves!

The Biology of the Sea Trout *E.D. Le Cren*
(Summary of a Symposium held at Plas Menai, 24-26 October 1984)

Salmon Stocks: A Genetic Perspective
N.P. Wilkins

Salmonid Enhancement in North America
D.J. Solomon

Salmon in Iceland *Thor Gudjonsson and D.H. Mills*

Atlantic Salmon Facts *D.H. Mills and G. Hadoke*
(Revised May 2003 by R.G.J. Shelton and J.B.D. Read)

The Atlantic Salmon in Spain *C.G. de Leaniz, A.D. Hawkins, D. Hay and J.J. Martinez*

The Automatic Counter – a Tool for the Management of Salmon Fisheries *A. Holden*
(Report of a Workshop held at Montrose, September 1987)

Salmon in Norway *L. Hansen and G. Bielby*

A Review of Irish Salmon and Salmon Fisheries *K. Vickers*

Water Schemes – Safeguarding of Fisheries
J. Gregory (Report of Workshop at Lancaster)

Genetics and the Management of the Atlantic Salmon *T. Cross*

The costs of both the above projects are high but only a fraction of those of a full scale ecological investigation. The AST is pressing for the achievement of these immediate scientific objectives as the focus for its research fund raising.

FIELD AND RESEARCH BIOLOGIST'S PROGRESS REPORT

A full report of the Biologist's activities will appear in the Winter Report. John Webb has been concentrating his efforts on his support co-ordinator rôle for the conservation and

restoration of salmonid stocks on the West Coast of Scotland.

He continues to work with others on the Baddoch and Girnock Burn projects, the impact of the various catch and release policies on salmon stocks, and on SALGEN – a major project on salmon genetics due to be completed by the end of June 2004. He regularly attends meetings, presentations, conferences and training activities around the country.

Trust staff will also be attending a number of other events North and South of the Border including the International Sea Trout Symposium to be held in Cardiff from 6-8 July and which is sponsored in part by the Trust.

Postal Auction 2005

The Postal Auction 2004 was a great success and invitations to take part in next year's Postal Auction will be sent out in August. Jenny, who runs the Auction, intends this year to reach a larger number of potential donors including those whose enterprises benefit indirectly from angling.

Fish Movement in Relation to Freshwater Flow and Quality *N.J. Milner*

Acidification of Freshwaters: The Threat and its Mitigation *R. North*

Strategies for the Rehabilitation of Salmon Rivers *D.H. Mills* (Proceedings of a joint Conference held at the Linnean Society in November 1990)

Salmon Fisheries in Scotland *R. Williamson*

The Measurement and Evaluation of the Exploitation of Atlantic Salmon *D.J. Solomon and E.C.E. Potter*

Salmon in the Sea and New Enhancement Strategies Edited by *D.H. Mills*
(Proceedings of the 4th International Atlantic Salmon Symposium, St. Andrews, New Brunswick, June 1992)

Surveying and Tracking Salmon in the Sea *E.C.E. Potter and A. Moore*

Problems with Sea Trout and Salmon in the Western Highlands Edited by *R.G.J. Shelton*

Automatic Salmon Counting Technologies – A Contemporary Review *G.A. Fewings*

Salmon in the Dee Catchment: The Scientific Basis for Management *A. Youngson*
(Proceedings of a one day meeting held at Glen Tanar House, 13 October 1994)

Spring Salmon *A. Youngson*

Enhancement of Spring Salmon Edited by *D.H. Mills* (Proceedings of a one day Conference held at the Linnean Society of London 26 January 1996)

Water Quality for Salmon and Trout *J. Solbé*
(second, revised edition)

Publications

"The Longshoreman". This wonderful book by our Research Director, Dick Shelton, has been extremely well received and is selling like hot cakes! In a most readable and amusing way it covers his early life on the foreshores and in the fish world. It is a 'must' for those interested in country pursuits and in fish. It will also be on sale at Blenheim and Scone where Dick will be available to sign copies.

Salmon Fisheries in England & Wales *W. Ayton*

The Industrial Fishery for Sandeels
A.D. Hawkins, J. Christie and K. Coull

Fish Counters Edited by *A.V. Holden and G. Struthers* (Proceedings of an AST/IFM Seminar held in Perth on 4 April 1997)

The Ocean Life of Atlantic Salmon Edited by *D.H. Mills* (Proceedings of a Workshop held in November 1998) Price reflects 50% discount available on orders placed by AST supporters. P+P: UK £2.50, Europe £3.50, Rest of world £5.00

Habitat Restoration for Atlantic Salmon
David W.J. Smart

The Interpretation of Rod & Net Catch Data Edited by *R.G.J. Shelton* (Proceedings of a Workshop held at the Centre for Environment, Fisheries & Aquaculture Science, Lowestoft November 2001)

Predation of Migratory Salmonids
(Assessment of a Workshop held in Edinburgh on 11-12 April 2000, the Chairman, Professor Fred Last OBE)

Salmon at the Edge Edited by *D.H. Mills*
(Proceedings of the 6th International Atlantic Salmon Symposium, Edinburgh, July 2002)

Discount available (£50) on orders placed by AST supporters

Other items such as ties, prints and posters are also on sale at Game Fairs and from the Trust's office:

Moulin, Pitlochry, Perthshire PH16 5JQ
Telephone: 01796 473439 Fax: 01796 473554

E-mail: salmontrust@aol.com
Web: www.atlanticsalmontrust.org