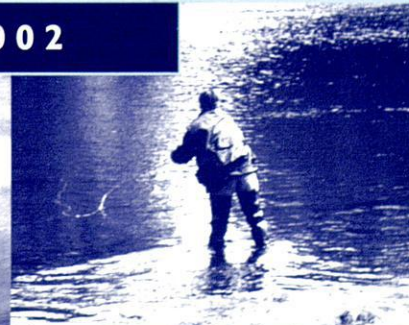
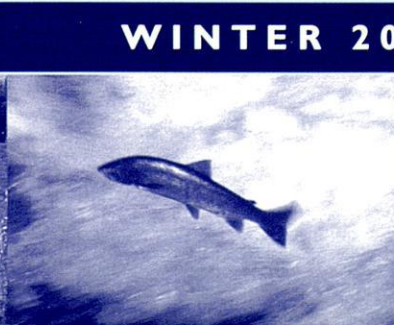




Atlantic Salmon Trust Report

WINTER 2002



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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From the Chairman



In the last Winter Report, I began by saying that 2001 was going to be a difficult year to sum up: the same applies to 2002. Overall, catch returns are expected to be disappointing. However, that will conceal the fact that some encouraging reports of improved spring runs have been received, and fish in a number of rivers seem to have been coming in strongly at the back-end. Otherwise, fishing was all too often very difficult, largely due to water conditions that were at times capriciously lower or higher than usual. But even this carries a bonus, since it will have allowed more fish to escape to spawn, in addition to the continued steady growth in the numbers of rod-caught fish released (38% in Scotland in 2001, including 47% of spring salmon caught).

At the conclusion of the International Atlantic Salmon Symposium which we organised in Edinburgh in July, four important Resolutions were passed, which were commended to Fisheries Ministers on both sides of the Atlantic. I am particularly pleased to say that there has been some progress in relation to three of them.

The first Resolution called for the regulation of aquaculture by management of the processes of the activity, through the enforcement of Codes of Best Environmental Practice. In the September newsletter we reported that the Scottish Executive had accepted the need for this. It undertook to make provision for it in the Water Environment and Water Services Bill, which will implement the European Water Framework Directive. This has

indeed happened, and the Bill is before the Scottish Parliament at the time of writing. It is encouraging to note that the Policy Memorandum explaining the Bill actually quotes salmon cage farming as the example of use of the procedure by which Ministers may make rules for the conduct of fish farming operations.

Significantly, some really encouraging results are being obtained in the control of sea lice, as described elsewhere in this report, notably in an article by the Managing Director of Marine Harvest. This is an example of the progress which is being made in developing co-operation between the industry and wild fishery interests, through the Tripartite Working Group which the Trust helped to establish. We are seeking to build on the promise of these improved conditions, which we hope will become more widespread, through the appointment of the Trust's Biologist to co-ordinate and facilitate the provision of scientific and practical support for salmon and sea trout conservation and restoration projects on the West Coast of Scotland.

The second Resolution drew attention to the need for action to counter the potentially very significant by-catch of migrating post-smolts in near-surface fisheries, especially in the Norwegian Sea. This problem was also reported in our last newsletter, and it was emphasised in our letter to Fisheries Ministers, mentioned above. The new International Co-operative Research Board, set up by the North Atlantic Salmon Conservation Organisation (NASCO)

discussed this problem at a meeting in December, and agreed that a project to investigate both the scale of the threat and effective counter-measures should be given the highest priority.

The third Resolution also concerned the International Research Board. It called for Non Governmental Organisations (NGOs) to be represented on the Board, and we understand that it has been accepted that one NGO will be invited to attend meetings in future. This will allow the benefit of their work in the support of practical research, as well as their experience of fund-raising, to be brought to bear in the development of international projects.

Regrettably, there is little progress in respect of the fourth Resolution, which reiterated the need to continue to work for the ending, with fair compensation, of coastal mixed-stock interceptory fisheries. Most readers will be aware from reports in the fishing press that, after protracted negotiations, the North Atlantic Salmon Fund (UK) has been unable to reach agreement with the netmen on the surrender of an adequate number of North East Coast Drift Net licences within the funds currently available from Government and from private contributions. However, hope has

not been given up, and NASF(UK) is continuing to explore ways to pursue the aim of closing the operation of this fishery.

Your Board of Directors has carried out an ongoing review of the activities of the Trust in the light of the current economic and financial downturn. This review is virtually complete and will be presented to the Committee of Members in the Spring. Beside a number of detailed recommendations, it emphasises the continued strengthening of the already effective co-ordination and co-operation between wild fish interests both north and south of the Border. There may have to be a limited scaling down in some of our commitments in the immediate future, but this will be kept to a minimum. In the mean time, the extremely generous support of our donors and subscribers, including those who so helpfully contribute to and bid in our Postal Auction, remains vital to the future well-being of the Trust.



H F O Bewsher



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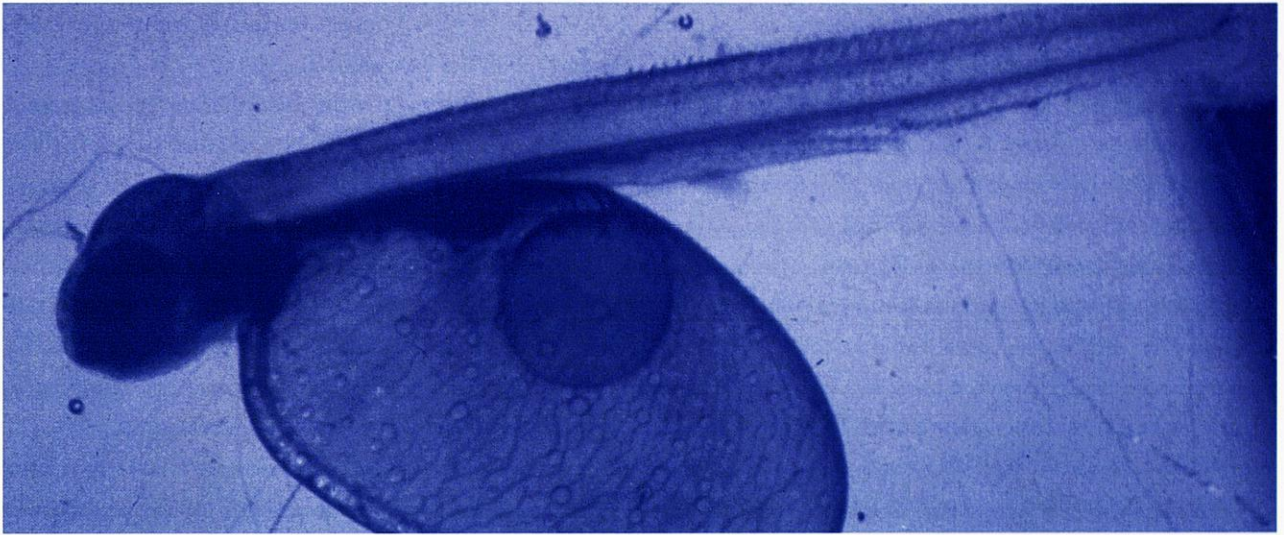
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H F O Bewsher



News



This section covers a range of developments, from changes in the organisation of the Environment Agency to progress in Scottish salmon legislation. Special articles describe

the growth of Rivers Trusts in England & Wales and improvements that are being achieved in Scotland in the control of farmed salmon sea lice levels.

England and Wales

Developments in 2002

By Tim Hoggarth, Deputy Director

New Environment Agency Organisation

BRITE (standing for "Better Regulation for Improving the Environment") was implemented on 1st October 2002. The scheme sees a change in emphasis from modular responsibilities within the EA to an integrated approach at regional and area levels. Head Office now includes a Director of Water Management to whom the traditional heads of department, including Fisheries, report. The department has been strengthened by the appointment of a Technical Manager and four Policy and Process Managers, while Dr Guy Mawle, previously Deputy Head, has been re-designated as Fisheries Strategist. Within each Region, a Fisheries Officer will be included

in a Stakeholder Unit, whilst, at area level, each of up to four Area Environment Managers will, within their multi-functional responsibilities, control a Fisheries and Recreation Technical Team. This means that the previous clearly demonstrated fisheries functional link from Head Office down through the regions and, ultimately, to the riverbank, is no longer apparent. Clearly, the changes will need time to bed in before a fair assessment of the impact of the new structure can be made. Concerns include:

- the possible impact on morale and performance of fisheries staff, especially those on the water
- the delivery of the fisheries function, including enforcement, at local level
- the possible re-allocation of staff, albeit on a temporary basis, away from their primary responsibility to other functional areas of the EA.

Fish Stocks

In recent years we have become used to receiving discouraging reports from rivers on the state of their salmonid stocks. Without becoming too optimistic, it may be that we are, at last, seeing the benefit of improvements in habitat management and water quality and changes in agricultural practice. There is no doubt that the work of the Association of Rivers Trusts (reported in the next article) has played a significant part in the implementation of catchment development plans and, especially, in initiating partnership schemes. These include stakeholders ranging through angling organisations, riparian owners, the EA and, most importantly, the agricultural sector. In fresh water, if we can effectively manage people, fish will manage themselves. There have certainly been a number of encouraging reports of significantly increased runs of sea trout in the Southern Welsh rivers, and improving counts of salmon in rivers ranging from the Tyne and Tees in the North, to the Welsh Dee and through to

the West Country. Clearly, black spots still remain, the most significant of these being the Wye and the southern chalk streams running into the Solent.

Sea Trout Conference

Following the success of the recent Atlantic Salmon Symposium, Dr Nigel Milner, Head of the EA's National Salmon and Trout Fisheries Centre in Cardiff, has taken the initiative in the organisation of an International Sea Trout Symposium. This will be held at Cardiff University 6-8 July 2004. The aim is to cover all aspects of sea trout fisheries and attract both delegates and speakers on a worldwide basis, including North and South America, the Falklands and the European Union. Planning is now under way, under the direction of a steering group which includes the Trust, the Salmon & Trout Association, the EA and the Welsh Development Agency. Nigel Milner and Dr Graeme Harris are the joint conveners.



Habitat improvement – Bankside and stream growth before and seven months after fencing

The Association of Rivers Trusts

By Arlin Rickard, Director

A little over a year ago the Eden Rivers Trust, Tweed Foundation, Westcountry Rivers Trust and Wye Foundation (now the Wye and Usk Foundation) announced at a meeting and seminar in Derby the public launch of an "Association of Rivers Trusts" (ART) for England and Wales. This development had followed a considerable consultation period including communication with

other river and fishery improvement trusts, the Atlantic Salmon Trust, the Scottish Fisheries Trusts and the Environment Agency. The four "founder member" Trusts are all registered charitable trusts and each has made a significant contribution in its own area to improve the aquatic environment and adjacent river corridor. At the time, David Clarke, the Head of Fisheries Recreation and Conservation for the Environment Agency, said "The Environment Agency welcomes the formation of the Association of Rivers Trusts and looks forward to working closely with them to improve our rivers."

The need for such a body seemed a logical extension of the increasing level of liaison that had taken place for some time between established rivers trusts. However, the speed with which the new organisation has become recognised, and the demands already placed upon it by new and emerging trusts seeking assistance, could hardly have been anticipated.

Aims and Objectives

The main aims of the Association are *“to co-ordinate, represent and develop the aims and interests of the member Trusts in the promotion of sustainable, holistic and integrated catchment management and sound environmental practices, recognising the wider economic benefits for local communities and the value of education.”*

The principles of ART are based on:

- Consent
- Subsidiarity – ART serves its members, with decisions taken at the appropriate level
- Partnership
- Education and technology transfer – with particular reference to new and emerging trusts

Although the activities of the Association can be wide ranging, they are ultimately governed by the objectives as set out in the member Trust’s charitable deeds. They include action to:

- Disseminate and exchange information and best practice (including publications)
- Discuss common issues and problems and seek solutions
- Contribute to policy at the appropriate level
- Provide advice and guidance to others in the sector, including help with “start up” groups and organisations and the development of new Trusts
- Fund-raise, and develop partnership funding applications

Seminars

Since ART’s launch, the Association has already run two further national Seminar/Workshops which have attracted other agencies and Non Governmental Organisations (NGOs) with interests in the sector, as well as existing and emerging rivers and fisheries trusts. The first of these events was aimed at those wishing to form trusts with a view to applying for charitable status. Presentations focused on forming a legal body (usually a trust or limited company), legal obligations, the role of trustees and the Charity Commission. Other considerations high on the

agenda when forming a trust included objectives, viability and “notional area”, as well as approaches to fund-raising.

The most recent ART Seminar, entitled “Project Planning for All”, was held in Wales over two days during October to mark the launch of the Pembrokeshire Rivers Trust. Combining presentations, workshop discussions and field visits, some 60 delegates covered a wide range of issues from Catchment Management, the Ecosystem Approach and Bio-regional Planning, to the use of Geographical Information Systems (GIS), fish population monitoring, targeting and prioritising of work and establishing indicators.

The Rivers Trust Movement

Rivers trusts have been described as having “wet feet”, with the reputation of concentrating most of their not inconsiderable effort on practical catchment, river and fishery improvements and work on the ground. In almost every trust there has been a key trigger bringing them into being. As one might expect, this has most commonly been concern over the environment and the decline of indicator species. However, in some cases trusts have been formed as part of an exit strategy after a successful project and, in a few cases, to make the most benefit of a windfall.

Many of the trusts established thus far, where eligible, have successfully applied for EU structural funds such as LEADER, and Objectives One, Two and 5b. These funds, which require matched funding and often involve complex bidding procedures, have allowed many trusts to deliver major programmes of physical works and practical river improvements. From the government fund-holders’ position, trusts have provided a very cost-effective conduit for delivery of environmental, social and economic outputs demonstrating strong community stakeholder involvement.

A number of new trusts have recently been formed in England and Wales. The established trusts such as ART’s four founders, the Ribble Conservation Trust and Wessex Salmon & Rivers Trust are now joined by new trusts including Trent Salmon Trust, which received charitable status early in 2002, Dee Salmon Trust, Pembrokeshire Rivers Trust mentioned above, and the proposed Northern Rivers Foundation. There are also some potentially exciting trusts at the planning stage.

Funding

The Association of Rivers Trusts has been fortunate to receive support and assistance from a number of quarters, including the Fishmongers' Company, and has recently been awarded funds by the Worldwide Fund for Nature (WWF), in partnership with BOC and HSBC. These funds will help run three further workshops during 2003 and early 2004 and assist with creating an ART Website and series of publications based on seminar proceedings that should be of particular interest to new organisations seeking advice and information.

The Future

The Rivers Trust movement is a "bottom up" grassroots development, initiated by a number of different community

groups, from around the country, all working independently.

The formation of ART is simply a natural consequence of mature Trusts sharing information and working together to help others and provide synergy. There is an increasing awareness of the importance of rivers for wildlife, and of the management catchments and their ecosystems for environmental service provision. Improving the riverine corridor and the surrounding catchment is a complex process, involving many diverse organisations. The Association of River Trusts provides an opportunity to assist, influence and develop this in a positive way.

For further information, please contact:

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Tel: 01566-784488 Fax: 01566-784404 E.mail: arlin@wrt.org.uk



Scotland

Signs of progress

By Jeremy Read, Executive Director

2002 did not offer a great deal in the way of fishing opportunities, as the Chairman points out in his Introduction to this Report. However, it was a year when there were some encouraging developments in salmon matters. To start with, there are indications that runs may have been better than catches would suggest, particularly at the beginning and end of the year. After the 2001 results, perhaps we may hope that ocean conditions, which are increasingly being shown to affect the survival of fish during their migrations, may be changing. The Trust

is supporting important work to increase our understanding of these effects, but better knowledge of what is happening at sea will not reduce the need to do what we can, where we can, to enhance and sustain the survivability of salmon and sea trout stocks. It is therefore good to see that much of the year's news concerns continuing work to improve both physical conditions and management capability.

Bid for EU support funding

The Association of Salmon Fishery Boards (ASFB) is co-ordinating the preparation of a major bid for funding through the LIFE scheme. This is aimed at helping to finance work to enhance

the management and conservation of salmon in river systems designated as Special Areas of Conservation (SACs). Proposed projects include proposals for the easing of fish passage at physical obstructions, forestry restructuring, river habitat restoration, assessing and tackling predation, and habitat restoration. 24 proposals, provisionally costed at a total of just under £6 million, are currently under consideration, and are being refined in anticipation of the preparation of a draft bid in Spring 2003, with a formal submission in October.

Ban on sale of rod-caught fish

A ban on the sale of rod-caught salmon and sea trout came into force on 1 October 2002. This was advocated in the Report of the Salmon Strategy Task Force Report. Despite concerns over possible difficulties in its implementation, the Trust has welcomed the order as a contribution to salmon conservation.

Salmon and Freshwater Fisheries Consolidation Bill

This long-promised measure has been prepared with the aim of bringing the current complex body of salmon legislation into the scope of one single Act. This was also one of the recommendations of the Salmon Strategy Task Force; although it will not encompass any changes, by simplifying the present cross-referring collection of laws it will ease their enforcement and make their overall effect easier to understand. It is expected that the Bill will be passed before the forthcoming election.

Forest and Water Guidelines

A proposed new edition of these Guidelines has been circulated for consultation. It contains significant improvements over the previous version, and recognises the problems that commercial forestry may cause for fish, but it still falls short in respect of the control of replanting in areas where problems of acidification threaten salmon stocks. The ASFB, supported by the Trust, has led in drawing attention to this deficiency, and is seeking to address it before the new Guidelines come into force.

Aquaculture and wild fish

The Minister's Working Group, which has been seeking to develop an aquaculture strategy for Scotland, has produced a draft document which is open for consultation at the time of writing this report. Although there are encouraging aspects in the draft, strengthening is needed if it is to build on the provisions for the regulation of aquaculture which are contained in the Water Environment and Water Services Bill, currently before the

Scottish Parliament. This will be particularly important in the establishment of the Codes of Best Practice which will be underpinned by legislation, under the provisions of the Bill. It will also be important to ensure that ventures in the farming of fish other than salmon are only undertaken with great caution in the light of the lessons that have been so painfully learned. The Trust, in conjunction with the other wild fishery organisations, is making these points as forcibly as possible.

The significance of this is highlighted by recent developments, which have shown that markedly improved performance can be achieved in reducing the impact of salmon farming on wild fish. These are outlined in the following article, which we print in the interests of encouraging the industry to show what it can do to meet the target of zero egg-bearing lice set by the Tripartite Working Group (TWG). The results have been borne out in experience reported by the biologist of one of the West Coast Fisheries Trusts at a recent seminar held by the Association of the Trusts. He described how, in the Upper Loch Linnhe area, surveys of wild sea trout post-smolts during the summer had revealed only 12 sea-liced fish, none of which carried more than four lice, among 78 captured. This is indeed encouraging, but it has to be pointed out that these improvements are not universal. However, it is hoped that the continued expansion of Area Management Agreements, together with stronger industry standards backed up by legislation, will continue to enhance the situation.

It has therefore been appropriate to return to the question of the restoration of stocks in those West Coast rivers which have been particularly depleted. The TWG, in its original report, had recommended that a mechanism should be established for the provision of advice and scientific support to Boards and Trusts in the undertaking of stock restoration projects. The Atlantic Salmon Trust has been urging that this recommendation should be implemented, and was charged by the TWG to reconvene its Restoration Sub-Group to this end. As a result, a proposal was agreed for the establishment of a Conservation and Restoration Support Co-ordinator to act as the principal link in the process, and the Trust offered the services of its Biologist to perform this function as a part of his duties. These moves have been agreed, and at the time of writing detailed arrangements are being made to set up the post, with support from Scottish Natural Heritage. Its establishment is planned for the beginning of March.

Lice management in the field

By Dr Graeme Dear and Chris Wallace (Marine Harvest Scotland)

One of the most important issues affecting the relationship between salmon farmers and the wild salmonid industry is the management of the sea louse. The farming industry has a number of tools available to it. These require lice population monitoring and include site fallowing, ideally synchronized within a sea loch (which has been standard practice in Marine Harvest since the eighties), the use of cleaner fish such as wrasse, and sea lice treatments of varying efficacy. These need to be used in accordance with the National Treatment Strategy, which depends on the co-ordinated application of treatments at the most effective time, and which will frequently require agreement and co-operation between different operators.

Top of the farmers' list of concerns has to be the welfare of their own fish – good animal health is as important to high standards of production of farmed salmon as it is in any other species – but in the setting up of the Tripartite Working Group it was recognised that the effective control of sea lice would equally benefit wild fish. The template for Area Management Agreement therefore set the target of a zero level of ovigerous (egg-bearing) lice, especially at the time of the smolt run. This article describes how progress has been made in meeting that target.

Over the period that salmon farming has been developing, one of the most difficult issues for the farmer has been the need for reliance on bath treatments, which often needed early repetition because restrictions from weather, day length or discharge consent limitations meant that the farm was treated over a protracted period of time rather than all at once – *which can be achieved by the use of an in-feed treatment*. Bath treatments certainly still have their place, but they also have their limitations.

The availability of effective authorized veterinary medicines to tackle sea lice infestations within the Scottish salmon farming industry has improved slowly over the past few years. The traditional bath treatments using **Aquagard SLT** (whose active ingredient was dichlorvos, and which is no longer employed) and also **Paramove** and **Salartec** (containing hydrogen peroxide) often had little or no effect on reducing lice numbers over time. The synthetic pyrethroid cypermethrin, marketed as **Excis**, along with the organophosphate azamethiphos as **Salmosan**, enhanced strategic approaches to curbing louse development. The main

focus of attention within the industry was already to ensure that the development of ovigerous female lice was curtailed. If there was little or no egg production prior to the spring of Year 2 of the salmon cycle, then farms would have a better chance of controlling what little did develop. The National Treatment Strategy was aimed at ensuring no egg release by the removal of all lice stages at week 10, when conditions for survival would be poorest. However, it appeared quite early on that there appeared to be a developing resistance, especially from ovigerous lice, to **Excis** and **Salmosan**.

The series of charts opposite show the lice intensities against the highest recorded number (Linnhe 98 year class, week 44) which has been set as the 100% level. Each chart is therefore presented relative to a constant reference point. The first chart shows the lice pattern in our Loch Linnhe site with the 1998 smolt input, at a time when we had to rely entirely on different bath medicines. Lice were ever present and the numbers varied as we went through the cycle.

Throughout the growth cycle the repeated use of **Excis** was having some marked effect on louse development, although post treatment counts revealed 20% of chalimus (the stage that attaches to the fish) remained, along with occasional residual females which developed into the egg-bearing gravid louse.

So, although as an industry we were all determined to reduce lice levels, we were finding that we did not have access to control measures such as in-feed therapeutants that were available and being reported as highly successful in Norway and elsewhere.

How effective are the new in-feed medicines? Well, in 2001 we began to see the first SEPA discharge consents for **SLICE** (active ingredient emamectin benzoate).

Chart 2 clearly demonstrates that even a single use of **SLICE** under 'interim consent' kept all stages of louse from the fish for nearly 20 weeks. Egg development was also impaired, and any re-recruitment during the early part of this period resulted in non-viable lice. The counts for week 18, two weeks post treatment, represent lice that although still attached are physiologically impaired. The site shown above did not receive a full consent until the following cycle, and the use of this first interim consent had to

CHART 1



CHART 2

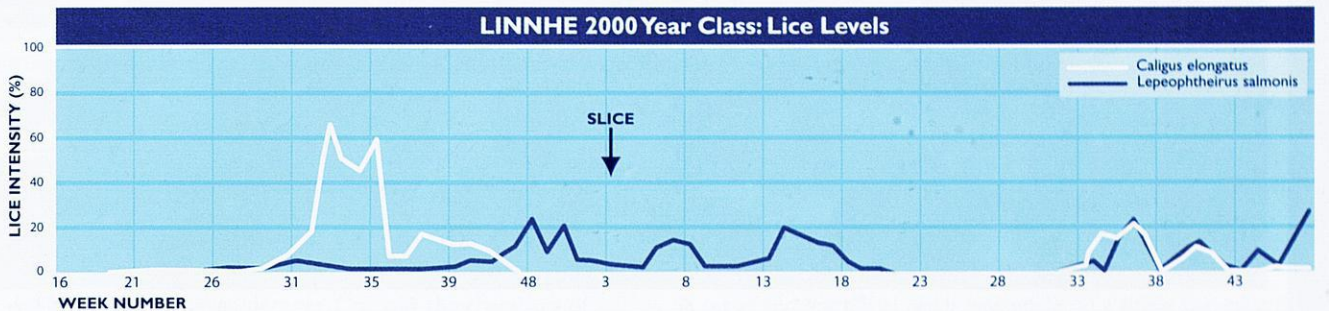
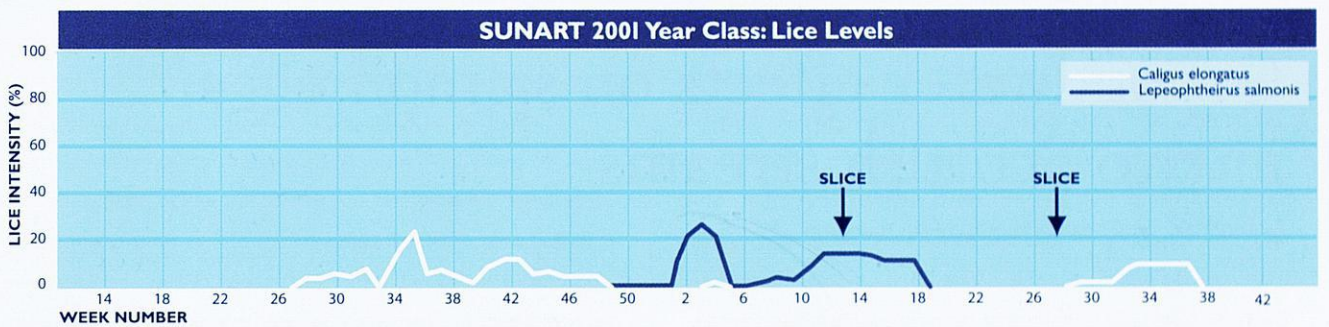


CHART 3



be followed with several short sharp shocks with **Excis**. However, this is a clear demonstration of the effectiveness of **SLICE** in Integrated Pest Management, which avoids reliance on a single method of treatment in order to minimise the risk of development of resistance by the lice. The final **Excis** treatments were very successful in themselves and, in our opinion, more effective than they would have been on their own. Another significant advantage of in-feed treatment is that its dosage can be precisely controlled, and the efficacy of **SLICE** is such that only infrequent applications are required, with consequent cost savings and further reduction of environmental impact.

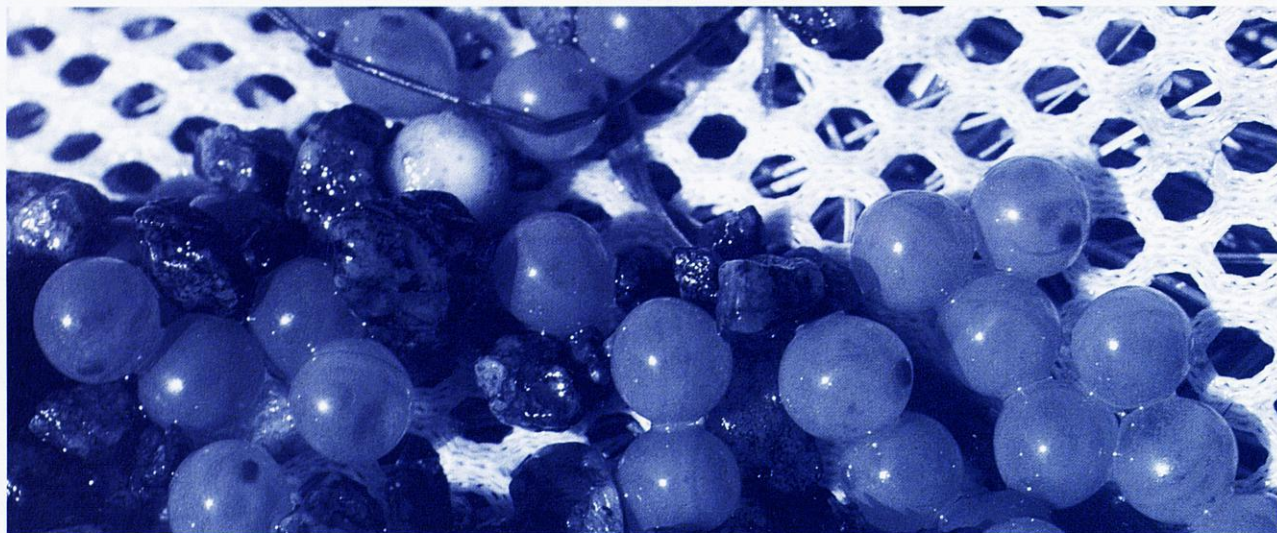
Where full discharge consents have been issued for the use of **SLICE**, employed in accordance with Integrated Pest Management and a good scientific strategy, there is a clear indication that lice intensity can be managed to the benefit of whole systems, neighbouring farms and wild fisheries interests. This is demonstrated in Chart 3, which shows that, for probably the first time ever, we were able to achieve the general Area Management

Agreement target of zero ovigerous lice (both *Lepeophtheirus* and *Caligus*) from the time we had good access to **SLICE**.

The employment of appropriate co-ordinated following, coupled with good husbandry and the rotational use of medicines at effective levels, provides the key to good environmental practice. Delayed or inadequate access to products, since efficacy over time may be impaired, can lead to real resistance without an alternative. This will be weak in terms of husbandry requirements and should not be environmentally acceptable.

It is our genuine belief that if all salmon farms were appropriately consented for **SLICE** we would, with proper co-ordination, be in the almost unbelievable position of eliminating lice from all farmed salmon for protracted periods. We trust that the growing achievement of Area Management Agreements will continue to increase understanding of the mechanisms of effective and perceptively regulated sea lice control, from which both farming and wild fishery interests will reap the benefits.

Features



Salmon eggs under examination

Groundwater effects on salmon eggs in two Scottish streams

By Iain Malcolm, Chris Soulsby and Alan Youngson

In recent years, the numbers of returning salmon escaping to spawn have fallen in many rivers. This need not be a concern in those places where the number of eggs laid continues to exceed the capacity of streams to support the young fish that result. In other places, however, the number of spawners is now low and, in these circumstances, every egg counts. Eggs are lost to streams for a variety of reasons. Young trout and salmon eat substantial numbers during spawning itself, and redds are sometimes destroyed by later winter floods, but eggs also die within redds for reasons that are not fully understood.

There are two explanations for egg mortality that implicate low oxygen levels during incubation. When the female fish digs her redd and covers the eggs with gravel, she winnows out fine sediment. So, at the outset, the eggs are dispersed among coarse sediment through which stream water bearing oxygen can pass freely. Later on, however, finer sediments are washed into the redd, blocking its open structure. Egg mortality is often explained in terms of reduced delivery of oxygen caused by reduced percolation of water from the stream above. This is undoubtedly

part of the story. However, fine sediment alone cannot explain patterns of mortality, since rates can be highly variable, ranging from zero to 100%, even in redds that are sometimes only a metre or so apart. Recently, the Freshwater Laboratory of Fisheries Research Service (FRS) has carried out a joint project, with hydrologists from the Department of Geography and Environment at the University of Aberdeen, to investigate why these mortality rates can differ so much. Our work was carried out in two contrasting streams.

The Newmills Burn is a small tributary of the Don in Aberdeenshire, and it runs through an area of intensive agriculture. The stream was re-sectioned and straightened in the early 19th century, and carries a high bed load of fine sediment washed in from adjacent agricultural land. The content of fine sediment in the streambed gravels is sufficiently high to be a potential cause for concern. Indeed, by conventional criteria the stream falls far short of the quality required of a salmonid stream. Yet, despite this, a large number of trout and a few salmon spawn in the stream, and it supports a high density of

young trout and salmon. Work showed that patterns of egg mortality could not be explained in terms of sediment composition, which was uniformly unfavourable by conventional standards. Yet, by springtime, although mortality rates were high or even total in some redds, rates were low or even zero in many others. The limiting factor for survival was indeed found to be low oxygen, attributable not to the effects of fine sediment but to the intrusion of long-residence de-oxygenated groundwater into the sub-surface layers of the stream-bed.

After rain-fall, water can reach streams by either of two main routes. Surface water travels quickly without long periods of passage through soil. Groundwater, on the other hand, takes longer to reach streams, and it does so using extended routes that involve percolation through soils and rocks. Passage times from the catchment to the stream can extend to periods of weeks or years, or even decades. Crucially, the chemistry of groundwater changes over time depending on the route the water takes to get to the stream. During exposure to soils, bacteria strip the oxygen from freshwater, and oxygen levels in long-residence groundwater can approach zero values. Groundwater enters streams largely unnoticed, often by upwelling from below the streambed into where groundwater and surface water mix in the so-called *hyporheic* zone, which is where salmon will excavate their redds and deposit their eggs in the gravels. Consequently, in many cases, the eggs are bathed in a variable mixture of stream water and groundwater.

Patterns of egg mortality and water chemistry were investigated in the Newmills Burn using water samplers located in egg containers incorporated into artificial redds, made in known spawning locations. Upwelling of low oxygen groundwater into redds explained the observed variable patterns of mortality. The influence of groundwater differed from place to place, depending on the characteristics of the sediment layers adjacent to the stream and underlying the stream-bed. The canalisation of the stream, and subsequent cutting of nearby trenches for field drains, has cut across the natural sub-surface sediment layers, leading to the creation of discontinuities through which groundwater tends to flow. For these reasons, the influence of groundwater on eggs was highly variable, even between closely spaced redds. The influence of groundwater *within* redds also changed, in quite complex ways, in response to changes in stream flow. When stream flow was high, stream water of high oxygen content dominated within the redds. In the aftermath of floods,

when the stream had subsided but the groundwater remained fully charged, groundwater dominated and oxygen levels fell, sometimes to lethal levels.

Because of its history, the Newmills Burn cannot be considered a typical salmonid stream. So, to determine whether the principles established there might be applicable elsewhere, we investigated another study site in the Girnock Burn, adopting the same approach. The Girnock Burn is nearly pristine. Agricultural activity is absent and the catchment is dominated by moor and abandoned grazings. Unlike the Newmills Burn, boulders and pebbles with a low content of fine sediment dominate spawning gravel. In fact, the Girnock Burn is a typical highland spawning stream full of young salmon and, apparently, free of environmental problems of any kind.

A set of three artificial redds was made on a single spawning riffle where, some years ago, excavation showed high levels of unexplained mortality in a natural redd, which is one of the two main spawning areas in the stream. As in the Newmills Burn, intrusion of long-residence groundwater occurred. Due to the local dynamics of groundwater and surface water mixing, the head of the riffle was less badly affected than its tail. In the latter case, oxygen levels were lower and mortality rates were higher than those observed in Newmills Burn. As in the Newmills Burn, oxygen levels changed during and after floods. During a period when stream levels fell because of prolonged freezing in the catchment, groundwater dominated the hyporheic zone and in the worst affected redds oxygen levels neared zero. Almost all the eggs incorporated in the artificial redds died. Subsequently, water sampling from the hyporheic zone throughout the stream's length has indicated that other redd sites are affected in a similar way. This work is still in progress.

The potential importance of these findings is twofold. Firstly, egg mortality in redds made in locations that are susceptible to the intrusion of low-quality groundwater may help to explain why fry numbers at emergence are often very much lower than the egg numbers from which they result. When spawners are few and natural fry production is insufficient to fill streams, losses of eggs to groundwater may well be crucial. Our second point, however, is that hatcheries run on good-quality surface water, or groundwater that has been well oxygenated, may prove beneficial and worthwhile for streams where groundwater is a prominent feature that limits fry production from natural spawning.



Fishing the Dove

Reflections on a successful bid

By Charles Dutton

A glass of the amber nectar rekindles the memories of the past season's fishing trips – I sit in a favoured chair watching the autumn rains fall and find it hard to believe that it was only a few months ago. I console myself with the thought that the new AST Postal Auction catalogue will be out during the Christmas holiday, and what a welcome diversion it will make to the hustle and bustle of today's commercial Christmas.

The day eventually arrives and the envelope from Pitlochry is eagerly opened. A quick glance through reveals many of the old favourites and a closer inspection unveils a few new entries that require careful research and consideration. Secret thoughts of

possible expeditions begin to fill my head. Is it a spring salmon fishing trip to Inverness-shire, sea trout in Cumbria, East Devon or even the Western Isles, or maybe a ferox in a deep highland loch or wild brownies in the footsteps of Cotton and Walton? My mind races, and I have to remind myself to keep my feet on the ground – there are so many possibilities to ponder and so many other considerations to take into account such as children's holidays, distance from home, school exams, cricket matches, when the sheep are due to lamb, work commitments, the state of the motorways and, above all, what would my fishing partner like and is there somewhere warm and comfortable to stay close by? All of these conundrums have to be shelved during the festive

season, but at least the research gives me lots of scope for reading. Eventually a short-list is thrashed out, then disclosed to my partner and discussed. I try to convince her that there is a lovely B&B or hotel close by, and the countryside really is stunning. All the books and fishing reports reveal this to be a great time to fish this particular river or loch, and that this lot really is an opportunity too good to miss. A decision is arrived at, and a range of bids dispatched to Pitlochry. Sometimes we are lucky and strike it just right, other times we are way off the mark. Once or twice we have taken a flyer and picked up one of the unsold lots.

This year we are in luck, and a mayfly trip to the River Dove in Derbyshire is our destination. Then the fun starts. What will the river be like? Who is our host? When is the best time to go and where can we stay? What are going to prove the winning flies and techniques?

Contact is made with the donor and options and dates are discussed and as much information gleaned as possible. Over the coming months all tackle is checked and rechecked, and I do my utmost to encourage my partner that upstream dry fly fishing for wild brown trout in crystal clear waters is not quite as difficult as it sounds. The fly tying table is pressed into action, new materials sought and bought and mind-blowing creations in all sizes and colour combinations produced. With luck we find some suitable lodgings nearby, and everything is set.

The day dawns and we are up early to pack the car. I tick off the check-list – rods, tackle bags, Kelly kettle, portable barbecues, magnetic rod racks, portable fly tying case, oh, and a clean tie for dinner. Off we set. Herself has drawn up a travel itinerary avoiding all motorway roadworks – and allowing us enough time to take in a quick stop at the Royal Worcester porcelain factory and possibly an art gallery or two. The journey is enjoyable and varied, if a little expensive! We make a minor detour to take in a view of the river from the bridge – to our great delight the water is clear and at a good height. Just as nature intended, a fish rises mid-stream, then another, and we are both hooked, desperate for our 9 o'clock start the following morning.

The next few days seem to float by almost in slow motion. The river is exquisite, surrounded by gentle farmland with low intensity farming, the result of which is all too clearly seen on the water. There is a constantly changing variety of fly life,

spinners and drakes are abundant, fish are rising freely as far as one can see upstream, the sand martins are competing with the trout for any mayfly that lands too near the surface. Our host's representative joins us for coffee, a wee dram and a smoke, and we sit on the riverbank watching the world go by. Stories flow and we soon realise that we are in the presence of a real master of the dry fly.

Many fish rise to our flies, and a few are landed and end up on the barbecue for lunch. We hear a rumour that there is the odd large fish just round the corner under a windblown tree mid-stream. We try our best, even with the infamous 'killer fly', but to no avail. All too soon our trip comes to an end and we must leave these idyllic surroundings and our new friends. Great promises are made to return – and with luck we will.

The amber nectar reminds us not only of the wonderful fishing and glorious surroundings but also of the lovely people we have met along the way. I see their Christmas cards on the mantelpiece – a beautiful view of the River Dove – and I realise how lucky we were this year. Sometimes things don't go quite as smoothly; we have endured dire accommodation and sudden weather changes have seen river levels rise just as we have arrived, but we have always received a warm welcome and every effort has been made for us to have an enjoyable time. Our expeditions have taken us to all parts of the country and left us with wonderful memories. All this for the cause of the Trust – what excellent value. Roll on the next catalogue.



Atlantic Salmon Trust Reports

Following reports cover the practical scientific work of the Trust, both in the activities of our full time Biologist and in our support of projects conducted by other organisations.

They are supplemented by a summary report on the Trust's finances in the period ending 31 March 2002. Copies of the full accounts are available on request.

Biologist's Report

Aspects of work in 2002

By John Webb – Field and Research Biologist

Maximising progeny numbers from natural and artificial spawning – The Baddoch Spring Salmon Project

This collaborative project between the Atlantic Salmon Trust and FRS Freshwater Laboratory, Pitlochry has been one of the main features of the AST's Biologist's work since 1995. The research is based on the use of DNA profiling or genetic pedigree analysis (matching of offspring to parents) to follow the fortunes of known family groups, from egg to returning adult. A brief summary of the most recent developments in this work is as follows:

Family structure of juvenile migrations leaving an upland stream

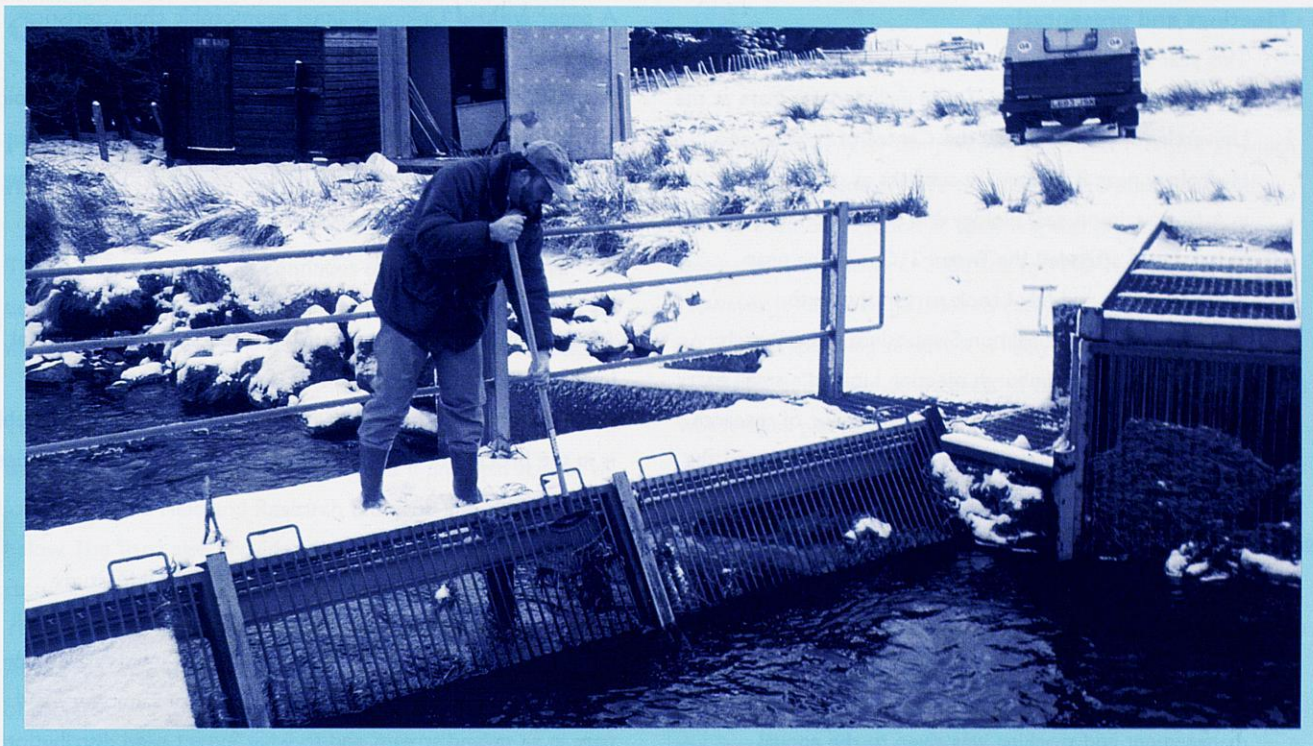
Young salmon tend to leave the Baddoch during two main 'runs' that occur in the Spring (February-May) and the Autumn (September-December). Within each run, juvenile fish leave the burn at different times and in groups of varying sizes. The patterns of downstream migration depend upon factors such as water temperature, flow and the stage in the lunar cycle. Effort has therefore been focused on the analysis of the timing of the downstream migration of the different family groups of fish living in the stream, and to what extent they differ from each other. The work has demonstrated that some family groups migrate at

different times from others, within the seasonal run. The significance of this behaviour is not known, but it may affect the subsequent survival of smolts after they leave their home stream. The Baddoch Burn is also home to a wild population of salmon. As a consequence, the study is also providing an opportunity to investigate whether there were any differences within the different seasonal 'runs' in each year between the migratory behaviour of 'stocked' fish (derived from planting eyed eggs) and of those generated by entirely natural spawning.

The relationship between the distribution, quality and quantity of stream habitat and juvenile migrant production

This part of the study is seeking to find out whether the variation in migrant juvenile output reflects the type and 'quality' of instream habitat near to the location of the spawning nest source of the young fish. To date, the laboratory analysis of fin-clips gathered from smolts and autumn parr as they left the stream has shown that there can be large differences in the representation of family groups. The area and quality of habitat within the stream may be important. Like many upland streams, the Baddoch Burn is characterised by a complex, linear patchwork of different instream habitats. Different habitats in streams and their combinations are thought to offer variable survival and growth opportunities for young salmon.

The stream is therefore being surveyed and mapped with the aim of quantifying the various rearing habitats over different reach scales of the stream. This information will form the basis of a further programme of detailed modelling and analysis.



Particular attention will be focused on whether there are relationships between juvenile production (i.e. migrants) and the distribution and area of key habitat types. At the present time, attention is being focused on those groupings of habitats that were utilised during the first four to six months after emergence from the redds. This work is continuing.

Other related studies DNA extracted from samples collected at the Baddoch has been used to identify a molecular marker linked to gender in salmon. It is hoped that the marker will be of use to both wild salmon biologists and the aquaculture industry, and will allow the gender of juveniles to be determined from a single scale or sample of fin-clip. This work is also continuing.

The samples gathered at the Baddoch are unique and will prove invaluable in the examination of temporal variation in genetic diversity of a salmon population. This information will be especially useful to those planning restoration/restocking programs, and will provide a model of how genetic variability is maintained over time. The DNA profiles of each fish may also be linked to sex and growth data and could, with a detailed analysis, provide a significant amount of information on the genetic basis of growth and other life history traits in wild salmon populations.

Collection of samples from returning adult fish has continued for

the purpose of future analysis to determine the contribution of individual family groups to the number of returning spawners.

Atlantic Salmon Trust Advisory Service

The Atlantic Salmon Trust's Advisory Service continues to operate. 186 enquiries have been handled during the year. Their nature ranges widely, from requests for specific advice and guidance on local fishery management issues to general enquiries for detailed advice and published information.

A number of field visits were made to sites on rivers on the East and West Coast of Scotland. For example, a call to the Wester Ross Fishery Trust area in early August involved a range of sites on the Kerry, Aultbea, Tournaig, and Ullapool rivers and three spawning tributaries of Loch Maree. This visit included extensive discussions with the area's Fishery Trust Biologist. The main issues considered included: population management, juvenile surveys, trap design, instream and riparian habitat management and the prioritisation of management and monitoring activities.

AST Training

In early April, following a request from The Don Salmon Fishery Board, I trained a group of anglers on catch and release techniques, live fish handling and Floy tagging. This was the third course of its kind to be conducted on the Don.

Meetings and presentations

- This year has seen attendance at a number of meetings, seminars and public events. These included seminars at the University of Aberdeen and the Centre of Ecology and Hydrology near Banchory on subjects as diverse as homing in Atlantic salmon, seal biology and population connectivity. In late May, I attended the Tweed 21C meeting near Melrose and in mid-July I took part in the Sixth International Atlantic Salmon Symposium in Edinburgh. At the end of the Edinburgh meeting I joined a small party of delegates during the post-symposium tour of research and management facilities. The tour included a visit to the Baddoch Burn, where I gave a short presentation on the AST/FRS joint project on spring salmon. I also helped to man the Trust's display caravan at the Scone and Moy game fairs.
- A presentation on riparian and instream habitat management and stocking was given to the annual meeting of the Haddo angling club (River Ythan) in early February.
- In mid-September a summary presentation of the Baddoch project, entitled 'Structure of a juvenile Atlantic salmon (*Salmo salar* L.) population and migrant output of an upland stream as revealed by DNA profiling' was given to the SALGEN quantitative/experimental workshop (see reference in 'Support of Projects').
- In mid-November I attended the annual seminar of the Association of West Coast Fisheries Trusts. The meeting, held in Glasgow, focused on themes related to the freshwater environment.

Publications

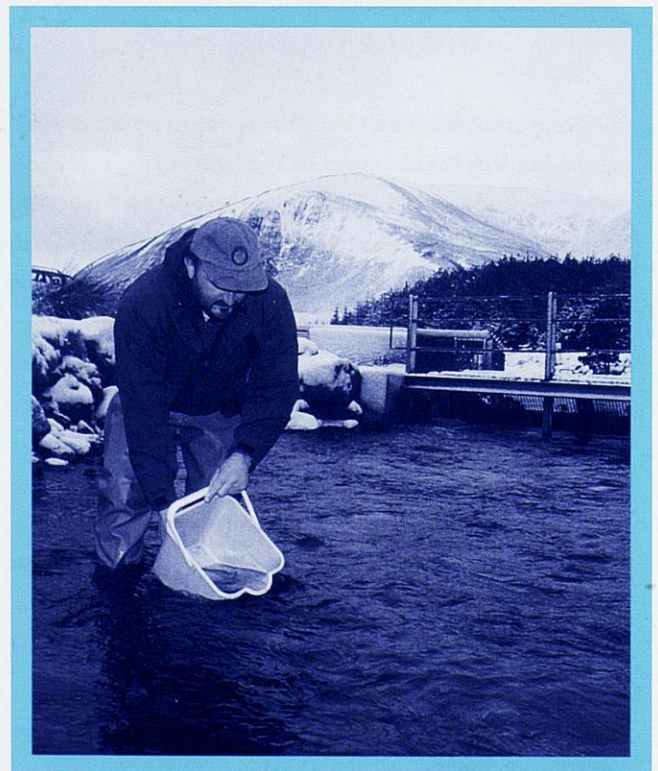
A paper entitled 'Assessing discharge use by spawning Atlantic salmon: a comparison of discharge electivity indices and PHABSIM simulations' by Gibbins, Moir, Webb, and Soulsby was published in the *River Research and Applications Journal*. The paper describes a study that has shown that electivity indices (a means of analysing choices) can further the examination of the timing and distribution of spawning behaviour by wild fish in natural streams, in relation to flow, without recourse to simulation.

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 submitted for publication in the *Journal of Geomorphology*. This work goes on to examine the impact of channel characteristics on flow utilisation in spawning.

A paper entitled 'Development, implementation and biological implications of the catch and release policy for early running Atlantic salmon in the Aberdeenshire Dee, 1995-1999' by Webb, is in the process of being published by the Institute of Fisheries Management.

The second scientific paper generated by the DNA study conducted on the Baddoch Burn is in advanced form, and will shortly be submitted for publication when all inputs have been finalised. It describes the detailed structure of salmon fry and parr in an upland stream, and to what extent redd distribution imposes this structuring

The third paper, which relates the patterns of output of parr to the key habitat types, is in active preparation.



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 conduct 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 responsible for a large proportion of the effort of John Webb. Its progress is described in his report. 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. This work compares 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. 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

River Eden – Effect of water temperature on spawning dates £1,000

This EA study, originally planned for 2000/2001, was intended to follow up some of the findings of the 1999/2000 project in

examining how water temperature can affect the time at which salmon spawn. Temperature recorders were purchased and installed, but observation of spawning was prevented by excessive water flows in 2000 and by FMD restrictions in 2001. However, it has been possible to carry out the work in the 2002/2003 spawning season. It is likely to be particularly significant in assessing the effects of the major water abstraction which takes place in one of the areas under investigation.

Predation and scavenging along spawning streams in Scotland £4,000

This has been investigating the extent of predation in upland streams, primarily by otters at spawning time, and its significance in affecting spawning success. The final report will examine the factors affecting the level of predation and the implications for the assessment of spawning targets.

Application of Continuous Plankton Recorder data to the interpretation of UK catch statistics £6,000

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 £4,000

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 lead to better quantitative assessments of seal predation, as well as differentiation between consumption of salmon and sea trout.

b. In 2002/2003

Long-term salmon changes in relation to plankton and climatic viability £5,5000

Building on the previous year's work, which established correlation between data on plankton distribution and downward trends in catches, this is seeking to forecast changes in salmon abundance in the context of climate change.



Salmon observed during underwater count

Indices of marine survival and freshwater productivity: a low-tech approach £4,000

Early indications from this project, which is aimed at validating the use of snorkelling techniques to estimate populations in West Highland rivers not equipped with counters or fish traps, are promising. Some of the work has been recorded photographically, and the report will recommend best practice.

Relationships between stream morphology and micro-habitat requirements in upland streams £4,000

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

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.



Stripping brood stock

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

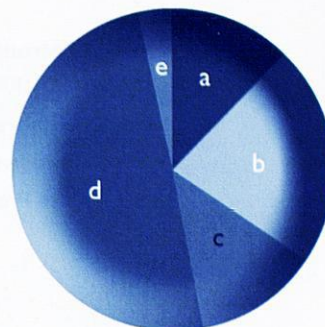
The SALGEN Project

This is a major EU-funded project, launched in October 2001, and running until April 2003, for which the Trust is acting as co-ordinating agent. It involves an extensive 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. A prime aim is to develop and publish guidance for fishery managers on genetic considerations in planning stock restoration and enhancement work.

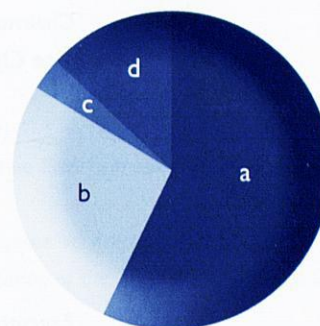
The total budget is €269,000 (£164,000)

Financial Report for the Year to 31 March 2002

Income	£
a) Investment income	37,998
b) Donations	68,457
c) Postal fishing auction	38,970
d) Restricted funds from other organisations	153,475
e) Other income	10,579
Total	309,479



Expenditure	£
a) Advancement of salmon conservation – unrestricted	143,913
b) Advancement of salmon conservation – restricted	67,350
c) Publicity expenditure	8,372
d) Management, administration and finance	32,686
Total	252,321



Net Incoming Resources	57,158
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Net Movement in Funds

Net outgoing resources – unrestricted	-28,967
Net incoming resources – restricted	86,125
Unrealised loss on investment portfolio valuation	-44,879
Realised loss on disposal of shares and securities	-67,816
Total	-55,537

Balance Sheet

Assets

a) Tangible Fixed Assets	67,522
b) Net Current Assets	117,215
c) Investment Assets	1,076,857
Total	1,261,594

Reserves

a) General Reserves	1,024,509
b) Investment Reserve	116,569
c) Property Revaluation Reserve	13,169
d) Restricted Funds	107,347
Total	1,261,594

Some new accounting rules came into effect during the year. This changes the way funds received from third parties for specific projects have to be reported. These funds are now shown as 'Restricted Funds' and can only be used for those projects. This means that the net incoming restricted resources of £86,125 are fully committed and will be absorbed by expenditure in future years. Taking this into account there was an operating deficit in the year of £28,967. The continuing weakness in the stock market is still having a detrimental effect but reserves remain strong and there is no immediate concern about the ongoing work of the Trust. The Directors are, however, keeping the situation under close review, particularly in relation to future strategic direction.

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
Dr. Richard Shelton
Executive Director: Mr. Jeremy Read
Finance Director: Mr. John Gray

Company Secretary: Mr. Timothy Hoggarth (Deputy Director)

Committee of Members

Mr. William Barne	The Lord Guernsey
Mr. Malcolm Borthwick	Mr. David Hodgkiss
Mrs. Annie Boyd	Mr. Michael Hollingbery
Lt. Col. Robert Campbell	Mr. John Lovett
The Rt. Hon. Dr. Jack Cunningham MP	Dr. Derek Mills
Mrs Susan Garrett-Cox	The Hon. Sir Charles Morrison
Mr. Robin Greville Williams	Mr. Hugo Upton
The Baroness Golding	

The following members, whose service is gratefully acknowledged, demitted office at or before the Annual General Meeting held in Fishmongers' Hall on 10th December 2002:

Mr. Jonathan Bulmer
Mr. Andrew Douglas Miller
The Earl of Eglinton & Winton
Mr. Miles Larby
Mr. Moc Morgan
Mr. Edward Mountain
Mrs. Anne Voss Bark
Mr. Robert Williamson

Invited Representatives of Other Organisations

ASF (Canada)	Mr. John E. Houghton
ASF (USA)	Mr. Donal C. O'Brien Jr
AIDSA	Madame S. Tissier
ASFB	Miss Jean Matterson
Countryside Alliance	Mr. Tony Andrews
Fishmongers' Company	Mr. Anthony Duckworth-Chad
RASA	Mr. Richard Buck
S&TA	Mr. T.A.F. Barnes
Spey Trust	(A Representative)

Honorary Scientific Advisory Panel

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

J. Browne, M.Sc. (Still Waters Consultancy)

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

E.D. Le Cren, M.A., M.S., F.I.Biol., F.I.F.M.

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.

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)

Professor Noel P. Wilkins, B.Sc., Ph.D. (Department of Zoology, National University of Ireland)

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

Observers:

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

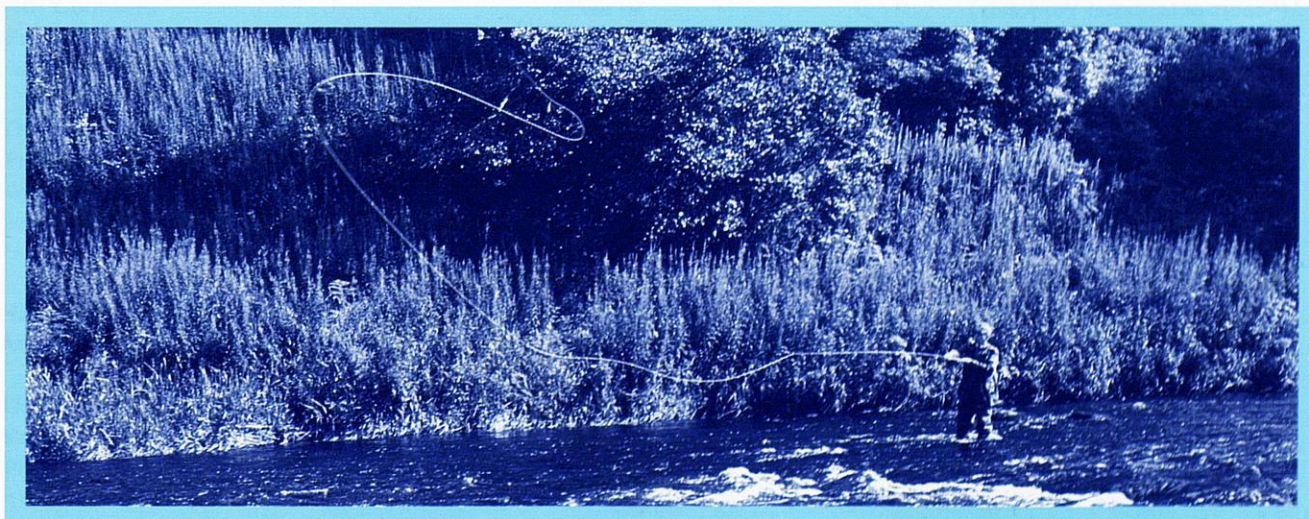
E.C.E. Potter, B.A., M.A. (The Centre for Environment, Fisheries & Aquaculture Science)

A representative of Fisheries Research Services (An Agency within the Scottish Executive Environment & Rural Affairs Department)

Derek Mills resigned the Chairmanship of the HSAP at its meeting in May 2002, after thirty years' service on the Panel, the last ten in the Chair. This long service to the Trust was recognised at a lunch in Fishmongers' Hall on the occasion of the 2002 AGM, at which Dr and Mrs Mills were guests of honour.

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
U.S.A.:	Restoration of Atlantic Salmon in America Inc.



Atlantic Salmon Trust Publications

Title		£
The Biology of the Sea Trout (Summary of a Symposium held at Plas Menai, 24-26 October 1984)	E.D. Le Cren	1.50
Salmon Stocks: A Genetic Perspective	N.P. Wilkins	1.50
Report of a Workshop on Salmon Stock Enhancement	E.D. Le Cren	1.50
Salmonid Enhancement in North America	D.J. Solomon	2.00
Salmon in Iceland	Thor Gudjonsson & D. Mills	1.00
Atlantic Salmon Facts	D. Mills, G. Hadoke & J.B.D. Read	f.o.c
The Atlantic Salmon in Spain	C.G. de Leaniz, A.D. Hawkins, D. Hay & J.J. Martinez	2.50
Salmon in Norway	L. Hansen & G. Bielby	2.00
The Automatic Counter – a Tool for the Management of Salmon Fisheries (Report of a Workshop held at Montrose, 15-16 September 1987)	A. Holden	1.50
A Review of Irish Salmon and Salmon Fisheries	K. Vickers	1.50
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“Paradise Found”

By Adrian Latimer, published by the author. Price £14.50 (all profits to the North Atlantic Salmon Fund).
Available from: Coch-y-Bonddu Books, Machynlleth, Powys, SY20 8DJ (01654 702837).

This is the second book by this well-travelled author, the first being *Wild Fishing in Wild Places* (2001). Adrian is in the insurance side of the oil industry, and hence his journeys cover a wide geographical range. Being a keen flyfisher, fishing gear is guaranteed a permanent place in his luggage. Iceland one day, Montana two days later, and so it goes on, the angling reader getting more and more jealous with every

page. Like the reviewer, he has experienced “*Murphy's Law*” on several occasions – floods, droughts, too many anglers and novice anglers catching trophy fish. His enjoyment of the country, its scenery and wildlife, even in the absence of fish, classify him as a genuine angler and countryman. His forays also take him to Russia, Ireland, Spain, Patagonia, New Mexico and Texas, as well as to the lochs and rivers of Scotland and the English chalk streams. Big fish? – yes, occasionally, but he is not a “big fish” enthusiast – although he did land a 10 lb brown trout in Montana and a 46½ lb salmon in Russia. Jammy!

Reviewed by Derek Mills.

Special Acknowledgement

The Atlantic Salmon Trust has been the grateful recipient of a number of generous donations in memory of those who have died. These have been acknowledged in recent Reports, but the Trust would like to record special thanks for a gift, in memory of the late Keith Williams, made by his widow and son.

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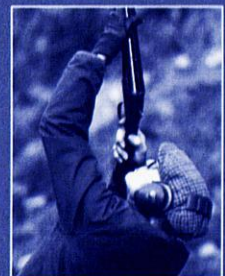
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