the river dee | annual report 2009

Dee District Salmon Fishery Board

The River Dee Trust

the staff who look after the river

are employed by the Board and the Trust to carry out a combination of management, administration, projects and fundraising.

Mark Bilsby
Director

Janet Service
Administrator

Dr Lorraine Hawkins
Biologist

Adrian Hudson
Biologist

Ken Reid
Deeside Fisheries Development Officer

Edwin Third
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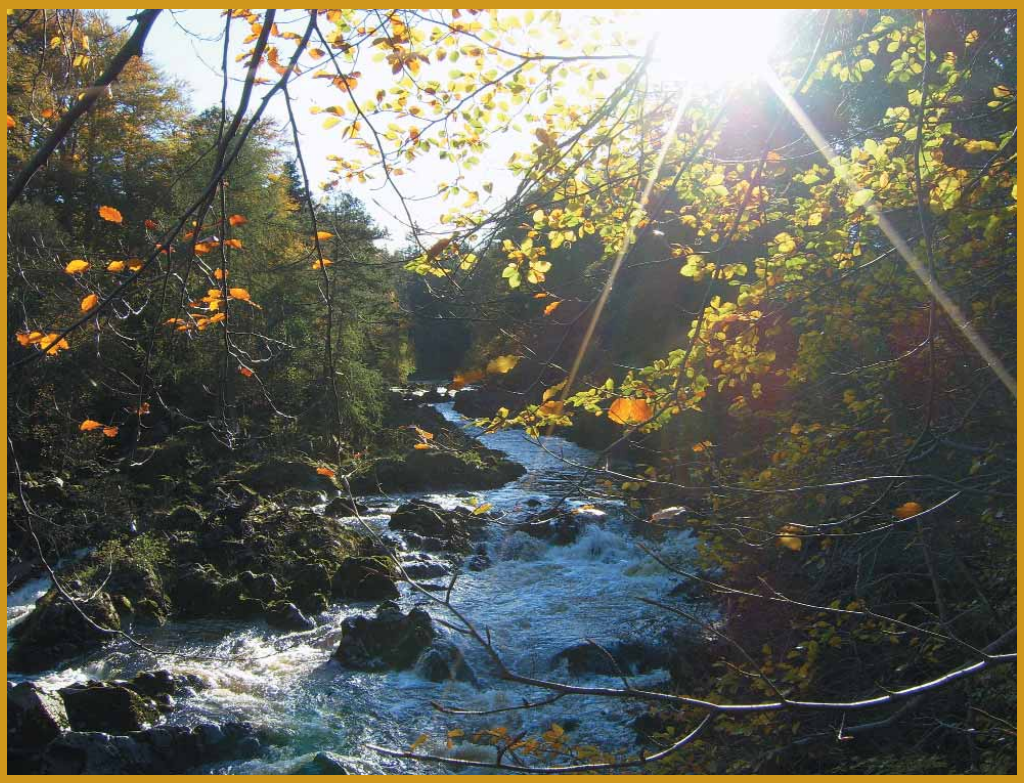
foreword



The Aberdeenshire Dee rises in the Cairngorm Mountains and flows for over 135 km before entering the North Sea at Aberdeen. Along the way 20 tributaries of notable size flow in and swell the river. The catchment is diverse in character, ranging from heather moors and mountains in the west, through forestry and farmland, to the city of Aberdeen in the east.

Iconic of the River Dee are the fish species which inhabit it. Atlantic salmon and their close cousins the trout (brown trout and sea trout) have swum its length since the last ice age. The most prized of these fish is the spring running salmon, attracting fishermen from the UK and beyond, who seek fishing at times of the year when stocks in many other rivers have yet to arrive. The salmon and trout are not the only fish of significance in the Dee, as the river and its lochs play host to the elusive arctic char, three species of lamprey and a variety of introduced species.

The factors affecting these fish are constantly shifting and the populations continually evolve in order to come to terms with their modern environment. The main cause of these changes is mankind: we have impacted on the fish by exploiting them as a natural resource; altered their habitat through land use and caused deterioration to water quality. Now with greater climate changes, the impact on migratory fish is not just linked to the fresh waters but the oceans too are being affected.

As man is the main cause of environmental change it is up to the individuals who live, work, visit or truly marvel at the Dee, to help look after it.

This report aims to inform you of the work in progress looking after the fish and the ecosystem of the River Dee.

a word from the chairman

For this current year's report on the highlights and major landmarks for the Dee District Salmon Fishery Board and River Dee Trust, it is my intention to follow the same format as last year.

Our season opened with a memorable celebration at Potarch, conducted in a blizzard by the extremely entertaining Clive Anderson. Over 250 people (our best turn-out to date) braved atrocious conditions to celebrate the Dee.

Following completion of the Conservation of Atlantic Salmon Scotland (CASS) LIFE Project the work was subject to a major comparative audit of its extent and quality. I am proud to report that we passed with flying colours and in recognition were chosen to represent the UK as the showcase project. It reflects the work of the river management team, staff, project partners and contractors. To further acknowledge this, the EU LIFE Project visited Deeside in May to observe projects firsthand and hold their annual convention.

The way ahead for the management of the three rivers within our jurisdiction was drafted in the autumn of 2008 and this Aberdeenshire Dee Fisheries Management Plan was sent out to all proprietors and stakeholders for consultation and approval. It was also peer reviewed by our parent bodies, the Association of Scottish Fishery Boards (ASFB) and the Rivers and Fishery Trust of Scotland (RAFTS). It became active at the beginning of this calendar year.

The document lays down a broad outline, both physically and financially, of the major challenges and opportunities that will face us in going forward over the next six years. If you are not familiar with this document may I commend it to you. Copies can be obtained from the River Office or by downloading from the **www.riverdee.org** website. Such plans, however important, are not set in tablets of stone. We will remain flexible in our approach and grasp new opportunities and initiatives as they present. We continue to work in partnership with those that have the interests of the Dee to heart. As an example, the fledgling but innovative Upper Dee Riparian Project which brings together land owners and managers, Scottish Natural Heritage, Cairngorms National Park Authority and the Forestry Commission to help restore the streams and river banks populated by young spring salmon. If salmon are to flourish in the future then this type of partnership will become more commonplace.

Finally my thanks go to proprietors, staff, Board and Trust members and our widespread network of partners for their support and enthusiasm during the last year.

Ian Scott
Chairman

Dee District Salmon Fishery Board

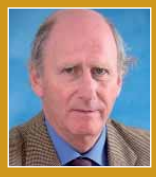
The River is administered by the Dee District Salmon Fishery Board, a statutory body tasked with protecting and enhancing stocks of salmon and sea trout across the district. This district encompasses not only the River Dee but also the neighbouring rivers of the Carron and Cowie.

The Board is elected every three years and works together with relevant partners to ensure representation from a wide range of stakeholders.


William Banks


Simon Blackett


William Boyd Wallis


Jamie Burnett


Robert Harper


Alastair Hume


Edward Humphrey


Linda Mathieson


David MacDonald


Ian Scott


Paul Timms

River Dee Trust

The River Dee Trust is a community-based charitable company, set up in 1998, and tasked with the following aims and objectives:-

Research: Improve our knowledge of the ecology and associated fish stocks of the River Dee so that practical improvements can be made to the biodiversity and management of the River.

Educate: Deliver educational information to schools, organisations and individuals living in the North East of Scotland.

Restore: To work in co-operation with those that have the improvement of the River at heart so that it may be looked after for this and future generations.


Victor Beamish


John Don


David Gordon


Alastair Hume


Serena Humphrey


Randall Nicol


Peter Ord


Ian Scott

Season extension monitoring

The number of salmon entering the Dee from June to September has been on the increase since the early 1980's. In 2008, in recognition of this trend, the River Dee was granted a licence for a trial period of three years to extend the rod and line fishing season from 30 September to 15 October. As part of the licence requirements, the extension is being monitored to determine if there are any impacts on the sustainability of the salmon population.

The objectives of the three year monitoring are to assess and determine:

- whether fish caught and released in the first two weeks of October have the same chance of successfully surviving to spawn, as those caught in the last two weeks of September;
- if Aboyne Bridge is the correct upstream limit of the season extension;
- what stocks of salmon are caught in the first two weeks of October and whether this impacts on the more vulnerable spring-running salmon.

In 2008 the pilot project began to develop and refine methods for monitoring the fishery extension fully in the subsequent years. The four methods used to assess the impact of the fishery extension included:

- Rod catch analysis
- Scale sampling
- Radio tracking of individual salmon
- Redd count surveys

Between 1 and 15 October 2008, 654 "Multi Sea Winter" salmon and grilse, and 33 sea trout were caught. Scale analysis indicated that numbers of grilse & MSW salmon were approximately equal. Of the MSW salmon all were two sea winters (SW).

Spring salmon (ie having entered the Dee in winter/spring 2007/08) comprised a small but significant component of the Lower Dee autumn fishery (downstream of Banchory; 22% of sample) and a larger component of the Middle Dee autumn fishery (Aboyne - Banchory; 44% of sample).

The remainder of the samples comprised summer and autumn entry two SW salmon and one SW grilse.

The radio tracking pilot study conducted in 2008 allowed the methods, logistics and man effort required for the tracking studies in 2009/10 to be determined. The pilot study tagged twenty rod-caught salmon captured in the Lower Dee and followed their movements from October 08 to February 09. All twenty fish (eight females and twelve males) were tagged with a digitally encoded radio transmitter that could be detected by receivers.

DDSFB and RDT staff tracked fish, in vehicle and on foot, with hand-held receivers. In addition, fixed position receivers were placed at points along the river which automatically recorded any passing tagged fish.

Of the tagged fish, one was lost, four showed no further upstream movements and fifteen migrated further upstream, generally moving distances of 10-53 km between October to January and remaining at the most upstream position for extended periods. A few fish stayed in the lower river for four - seven weeks, close to where they had been captured, before moving upstream a short distance of 1-4 km and then tended to drop downstream again very quickly. Two of the four salmon that migrated downstream subsequently moved upstream again and all four remained in the river for at least two months.

Fish that had recently entered the Dee (ie fresh fish) showed the greatest upstream migration (maximum of 54 km, average of 23.5 km). In contrast, the five spring salmon that were captured and tagged in October showed the least upstream movement (average of 2.6 km), suggesting that these spring salmon would go on to spawn in the lower river.

The date at which the tagged salmon reached their furthest position upstream ranged from 14 October (a male spring fish) to 14 January (two autumn-entry females). Overall, spring salmon reached their highest upstream position earlier in the season (mid - late Nov) than summer-entry salmon (late Oct - late Nov) and autumn-entry salmon (mid Nov - mid Jan), suggesting that spawning occurred first in fish that had entered the river earlier in the year.

Three of the tagged salmon were confirmed to have spawned - one female was observed cutting a redd and two fish were recaptured moving downstream as kelts in February 09. Occasional downstream movements of tagged fish (kelts) were detected until May 09.

Overall the radio tracking pilot study highlighted some differences in the behavioural movements of individual salmon prior to spawning and clearly demonstrated the importance of monitoring the impact of the trial fishery extension prior to any permanent changes to the fishery being made. For the next two years, the radio tracking project will involve 30 fish being captured and tagged in September and a further 30 salmon in October. These fish will be tracked until the following February so that a comparison of the movements and behaviours of fish captured at different times in the season can be made, which will highlight if rod capture and subsequent handling has a different impact on fish later in the fishing season. In 2009 all fish to be tagged will be part of the Lower Dee rod catch and in 2010 all fish will be taken from the Middle Dee.

In addition to the radio tracking in 2009/10, further monitoring of the October fishing extension will include:

- Rod catch analysis of statutory returns, with additional information on individual fish to be collected by a sample of beats;
- Scale sampling to continue as part of the sampling programme initiated in 2008 and;
- Redd count surveys on tributaries and sites along the main stem of the Dee to be carried out weekly.

Further information on the monitoring of the October fishery in 2008 can be found in the RDT report 'Monitoring of the River Dee Fishery Season Extension 2008', available from the Fisheries Office or at www.riverdee.org.uk.

Is it working?

Over the last two years the annual report has detailed a large number of habitat improvements both in the water and the surrounding land through the Conservation of Atlantic Salmon Scotland Project, referred to locally as the LIFE project. The big question is **"Does it impact on fish numbers?"** Whilst it is still too early for the full outcome to be realised, surveys analysed over the summer months provide interesting results.

There are four main areas of activity:

Buffer strips

These allow bankside vegetation to grow and intercept run-off from agricultural land. A total of 37 km of fencing were installed on seven tributaries across the catchment. Thirty sites were monitored, before and after the fences went in, using electric fishing surveys. The numbers of salmon parr caught were then compared, before and after buffer strip installation. Results from the Cattie Burn show an increase from 0.03 parr to 0.33 parr only one year on. This indicates that buffer strips are assisting tributaries to heal and it is hoped that further benefits will accrue over time.

By doing this

We turn this

Into this

Coppicing

21 km of river bank were coppiced, allowing more light into the stream, promoting the growth of understory vegetation and reducing points of erosion. Electric fishing surveys completed before and after showed that in areas left untouched parr numbers remained about the same. In coppiced sites, parr numbers typically doubled.

Easing obstructions to fish migration

A total of nine obstructions to fish migration were eased, the two most significant were on the Coy Burn and the Water of Dye.

The Coy Burn contained an impassable weir which prevented fish from gaining access to approximately 21 km of potential juvenile fish habitat. In June 2008 a pass was installed allowing fish access for the first time in around 250 years. That autumn, 54 salmon and sea trout ascended the fish pass. Previously a hatchery programme had established a population of salmon over approximately 400 m of the Coy Burn. By the summer of 2009 salmon had colonised just over 9 km of the tributary by natural means, which far exceeded our expectations.

Similar improvements were seen on the Dye after two partial obstructions were eased. Previously, fish could only occasionally access upstream; with the installation of two fish passes their passage became greatly enhanced. It is still too early to measure any increase in parr numbers, although the fry from last year's spawning showed a significant increase, from average catches of 0.2 fry per site up to 3.04 fry per site. Other sites below the obstructions showed no significant change.

Instream habitat creation

A total of 25,000 m^2 of parr habitat was installed in tributaries historically dredged to improve agricultural drainage. The work involved placing small boulders and cobbles in streams to recreate the preferred habitats of salmon parr. Sites were surveyed before and after on the Dinnet, Beltie and Tarland Burns and compared against the numbers of parr found after the works took place. In sites where no work had taken place, no change was found. This was compared with surveys after habitat creation which showed that the parr populations increased by a minimum of tenfold and in some cases significantly more.

Overall

The LIFE Project has made considerable improvements in the number of young fish living and thriving throughout the Dee, which will sustain salmon for the future. We are extremely grateful to the partners and contractors who contributed to this project and helped make it a success.

Annual catches

Since the mid 1950's catches of multi sea winter salmon and grilse have declined. In 1999 they reached a low of 2771 (see figure. i). However, since 2003 catches have increased and in 2008, 6611 salmon were caught including 654 caught in October. Excluding October catches this is still substantially higher than the five year (2003-2007) average of 5271 salmon.

The 2008 catch is approaching the fifty year (1954-2008) average rod catch of 6790.

In spring of 2009 (Feb 01 to May 31), 1864 salmon were caught on rod and line. Spring salmon catches have been steadily climbing and, although this year's figure was slightly down on recent years, it is still favourable when compared to the turn of the century.

In 2009 many Scottish rivers have experienced poor spring runs, indicating a problem of salmon survival at sea.

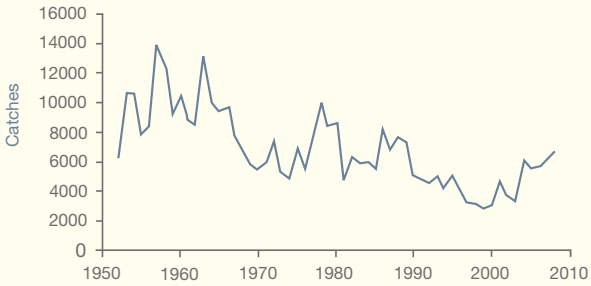


figure. i salmon

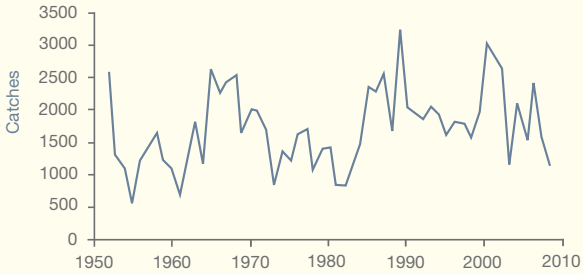


figure. ii sea trout

Sea trout catches are highly variable from year to year but have shown a slight positive increase since the 1950's (see figure. ii). However, 2008 saw the lowest reported catch (1130 sea trout) in over 25 years. Due to this low catch, the Conservation Code was updated in 2009 to require total catch and release of sea trout.

The catches of sea trout in 2009 have been more promising both in terms of fish size and number.

Encouraging new participants

This summer saw the launch of the IntroDee schools programme. In spring Trust Biologist, Adrian Hudson visited schools to explain the life and times of fish found throughout the valley. Follow up visits were arranged to the Raemoir trout fishery, near Banchory, to learn more about fish and their wider environment, outside of the confines of the school classroom.

After a thorough briefing on how not to fall in and kitted out with lifejackets - for obvious reasons - along with sunglasses and a hat to keep hooks away from young eyes and heads, youngsters and teachers ventured out on a bug hunt and to try their hand at fishing. The children were fascinated by explanations of how the food chain works and how dependent on it fish are. Then under the careful supervision of ghillies and Raemoir staff, fish were soon landed with children quickly learning how to out catch the teachers!

Getting young people into the sport of angling is vital as part of the River Dee's future; without anglers, none of the 500 full time jobs associated with the fishery on the river would exist nor would there be support for the vital conservation work needed to look after fish and their habitats. This work is a key part of looking after and developing the fishery for future generations. More information on this topic can be found at **www.riverdee.org.uk** and if you know of a school or group that would like to take part in 2010 then please contact Ken Reid. Our thanks to all who have supported this programme including ghillies, angling clubs, Apache North Sea Ltd, Glasgow Angling Centre and not least to Raemoir Fishery for allowing their waters to be used over the summer.

Looking forward to 2010

As the 2009 fishing season draws to a close our thoughts turn to activities in 2010. The main challenges will be:

- Installing a fish pass at the Culter Dam, a five metre high weir that has obstructed fish from accessing 120 km of fish habitat for the last 250 years. Work also proceeds to ease at least four additional obstructions to fish migration elsewhere.
- Continuing the programme of habitat restoration with approximately 12 km of buffer strip to be installed across different tributaries in the catchment.
- A project in the early stages of development will consider the restoration of native riparian trees to the Dee's upper tributaries to help restore the habitat of the fragile spring running populations of fish and combat the impact of climate change.
- To develop the bio-security plan to help prevent the introduction of the devastating parasite *Gyrodactylus salaris* and to deal with species that are already here, but not native to the Dee, such as the invasive waterweed *Ranunculus* and the North American mink.
- Roll out and expand the schools and youth angling programmes, encouraging more people to take up the sport of angling.
- Begin a programme to understand the genetic makeup of the salmon populations around the Dee, Cowie and Carron. With support from the Dee Salmon Fishery Improvement Association and Marine Scotland this work will be completed 3 years ahead of its 5 year schedule, greatly improving our ability to target the restoration efforts to the most vulnerable stocks of fish.
- Monitoring the season extension, which will reach its final phase and will inform whether or not an application is made to keep the season running into the middle of October or return to 30 September.

This is an overview of just some of the projects we are working towards. If you would like more details or information on all our activities please look up our Fisheries Management Plan, available on our website www.riverdee.org.uk.

We will be on the move with a new address from January 2010 - River Office, Mill of Dinnet, Aboyne, AB34 5LA. The phone number (013398 80411) and email addresses (info or staff first name @riverdee.org) stays the same. Come and visit!



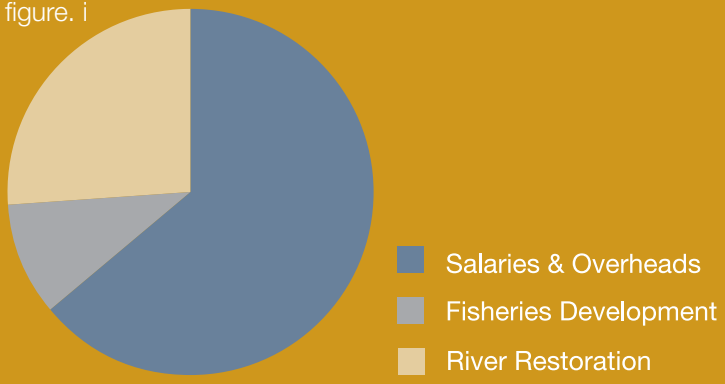

finance

In order to carry out the tasks assigned to both the Board and the Trust as part of the Fisheries Management Plan sufficient funds must be raised to ensure adequate resourcing. These diagrams (figure. i and figure. ii) demonstrate where funds are spent. It should be noted that whilst the Board and Trust work closely together they are separately accountable under the terms of their relevant legislation. By working in partnership they can deliver greater benefits to the River Dee and its neighbouring catchments the Cowie and Carron.

Dee District Salmon Fishery Board

The Board is largely financed by an assessment levied to proprietors of fishing beats across the Dee district. The main item of expenditure is on staff salaries comprising the River Director, four Bailiffs, a River Operations Manager, a Fisheries Development Officer and an Administrator, which allows for the policing, development and practical restoration works undertaken by the Board to go ahead.

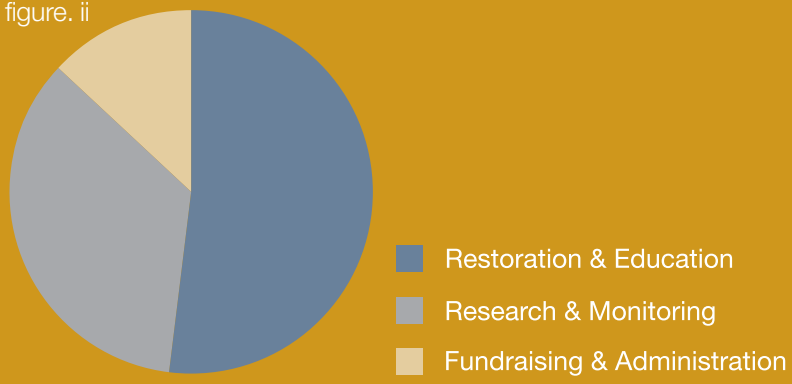
figure. i



River Dee Trust

The two main components of the income for the River Dee Trust are charitable donations along with grants and contract research for specific items of work. This is augmented by a donation from the Board for work relating purely to salmon and sea trout. The expenditure of the River Dee Trust is activity based with most resources invested in river restoration and education programmes, accompanied by slightly smaller research and monitoring programmes. Fundraising and administration costs are kept to a minimum to ensure that the vast majority of funds raised for the Trust are spent on positive work.

figure. ii



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