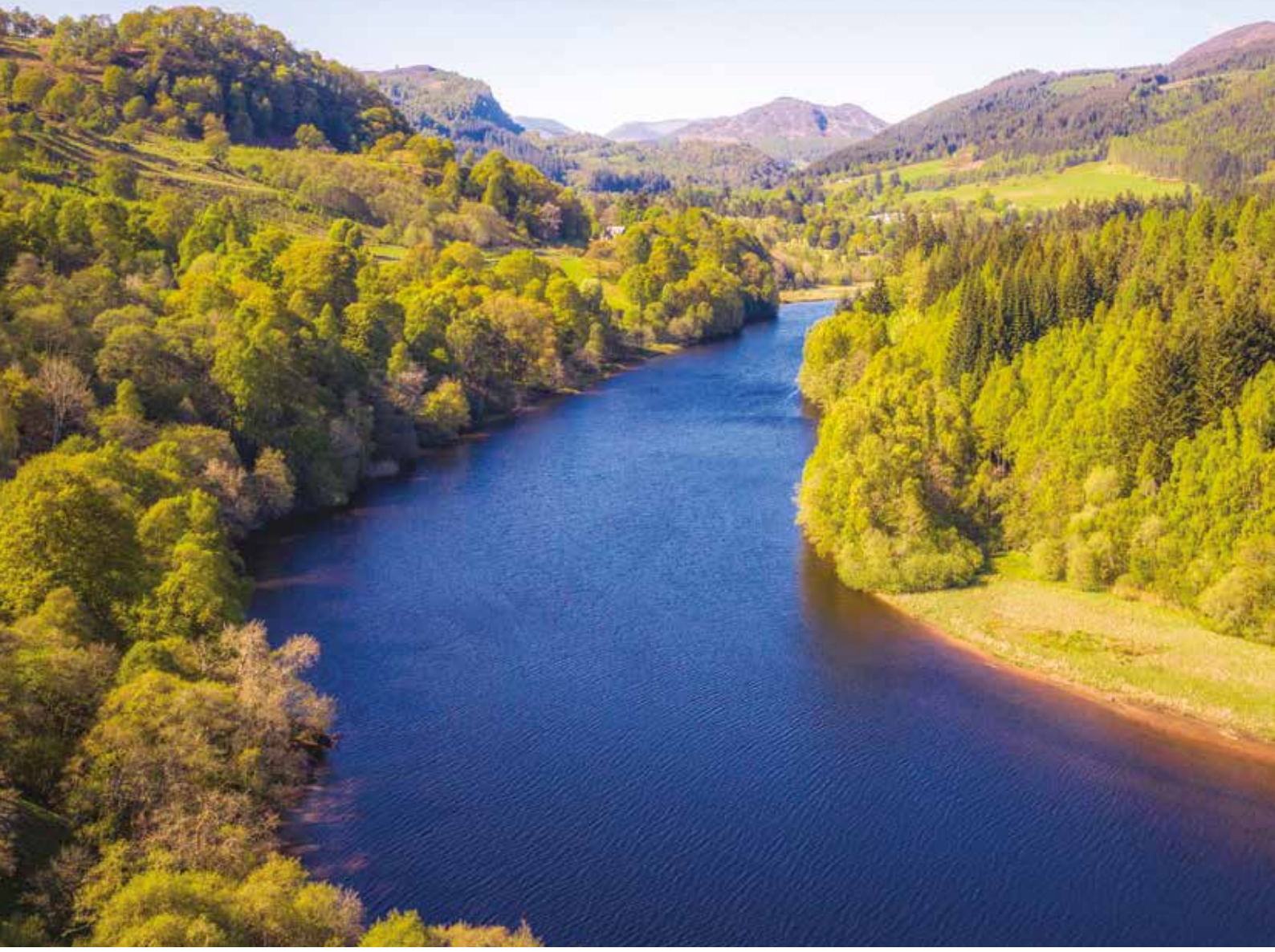
Fisheries Management Scotland

2024
ANNUAL REVIEW

Working to conserve Scotland's wild salmon and native freshwater fish, Fisheries Management Scotland is the representative body for Scotland's District Salmon Fishery Boards, Rivers and Fisheries Trusts and the River Tweed Commission.



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Chairman's introduction

Richard Sankey
Chairman, Fisheries Management Scotland

Despite the barrage of pressures our wild salmon and freshwater fish continue to face, it gives me enormous satisfaction to be part of a network which is fighting hard to help our native fish and their environments experience a better future. Our unique national network of fishery boards and trusts plays a crucial role in driving forward environmental improvements in Scotland's remarkable river catchments.

In the face of the climate and biodiversity crises, there is a clear urgency to this work. But, while it must be delivered on a strategic scale and at swift pace, seeing the benefits will not be immediate. We must therefore have confidence in our work, and I would like to pay tribute to the network of dedicated fishery boards and trusts who work tirelessly in difficult circumstances to do everything in their power to do what's best for our fish. Secondly, I pay tribute to Alan and the committed team he leads at Fisheries Management Scotland, who continue to do a tremendous job to co-ordinate and deliver our essential work and to work on behalf of our members' interests.

Notwithstanding the challenges we all face, it has been a hugely productive year for FMS and there is a great deal to be proud of. It gives me great pleasure to see our team expanding in the right places to respond to the challenges we face. Paul Sizeland, our Director for Nature Finance, is leading us into the new and uncharted waters of nature finance and future partnerships – this is essential if we are to deliver our work at scale across catchments. I hope you enjoy reading the updates from all of the staff in the following pages of this review.

It is heartening to see significant public funding supporting the fisheries management sector over the last year. FMS helped to coordinate a number of projects which are funded nationally and delivered by local fisheries managers – an excellent example of the public and private sectors working together with a common aim. I am proud of the fact that our members were able to mobilise at short notice to successfully deliver the National Electrofishing Programme for Scotland and the National Adult Salmon Sampling Programme, and to continue our long-running programme of monitoring sea lice infestation pressure on wild sea trout. In addition, we made four successful grant applications to Marine Fund Scotland in 2023. I am grateful to all of the organisations who provided financial support to FMS in 2023. Further information on our funding can found on page 26.

Delivery of our work is one thing, but as a sector it is vital that we communicate our efforts more widely, to raise awareness of the crisis our fish are facing. This not only helps to improve the understanding of the importance of healthy and functioning aquatic environments, but also brings into focus the direct relationship they have with our own health and wellbeing. Our work with the Missing Salmon Alliance (MSA) has enabled us to gear up our communications and advocacy work to spread the message about the plight of wild salmon to a broader audience, including participation in an MSA engagement event at the Curzon Cinema in London at the end of 2023.

I would also like to highlight that we are contributing, with MSA partners, to an international initiative called Wild Salmon Connections. This will convene in London in January 2025 and aims to activate an urgent, renewed international focus on wild salmon, within the context of the climate change and biodiversity crises. Further information on this initiative can be found on page 20.

Leading a call to action

Alan Wells
Chief Executive, Fisheries Management Scotland

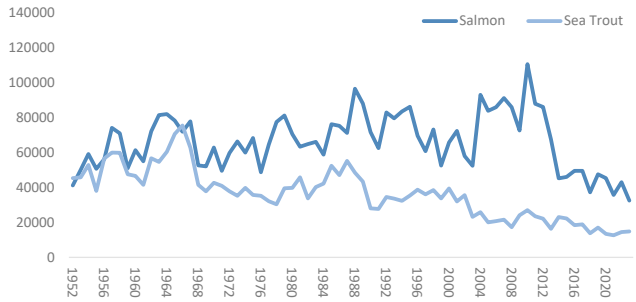
It is a great privilege to lead the team of dedicated staff at Fisheries Management Scotland who, as you will see in the following pages, are working tirelessly to improve the situation for our wild fish. As the representative body for Scotland's District Salmon Fishery Boards, the River Tweed Commission and the Rivers and Fisheries Trusts of Scotland, we are delighted to help showcase just some of the fantastic efforts of our members to protect, enhance and restore Scotland's wild fish and their habitats.

In recent years, we have worked hard to highlight the perilous state that our wild salmon and sea trout are in. While it is heartening to see these efforts reflected in Scotland's Wild Salmon Strategy and Biodiversity Strategy, it is equally clear that concerted, ongoing action by government, agencies and industry is required. The provisional salmon and sea trout catch statistics for 2023 have now been published, and unfortunately do not make easy reading. With only 32,477 wild-origin salmon caught, the final official figures for 2023 are highly likely to be the lowest on record. As I stated last year, there is no one simple solution to the current situation, and urgent action across a wide range of pressures is required.

Scotland's Wild Salmon Strategy sets out a suite of actions that, if delivered in full, will make a huge difference to the health of the country's Atlantic salmon populations. However, in order to deliver, the strategy must be fully resourced and the actions undertaken with urgency. Fisheries Management Scotland is supporting a number of workstreams, but many of the actions are outwith the control of fisheries managers and must be delivered by the Scottish Government and its agencies.

The latest species reassessment by the International Union for Conservation of Nature (IUCN) reclassified Atlantic salmon from "least concern" to "endangered" in Great Britain. This is as a result of a 30-50% decline

Annual Salmon & Sea Trout Catches Scotland 1952-2023*



Source – Marine Scotland Science © Crown copyright.

* 2023 figures are provisional

in British populations since 2006 and a 50-80% projected decline between 2010-2025. The IUCN has identified a number of key pressures, including climate change, poor water quality, dams and barriers, salmon farming, exploitation at sea, and invasive non-native species – all issues that have featured heavily in these pages in recent years.

The IUCN also identified the work of the partners in the Missing Salmon Alliance, and in Scotland it cited:

... a number of non-statutory bodies are working to conserve Scotland's wild salmon, with Fisheries Management Scotland representing Scotland's District Salmon Fishery Boards, Rivers and Fisheries Trusts, and the River Tweed Commission. Activities of these bodies include working with the farming sector to help advise on reduction in agricultural impacts, such as pollution and sedimentation, re-opening of river catchments through barrier removals, restoration of wetlands, cleaning of spawning gravels, and engagement with schools.

On a more positive note, having responded to the consultation on the closure of commercial sandeel fisheries, a crucial prey item for young salmon and sea trout, we are delighted that sandeel fisheries in Scottish and UK waters will be banned. While there is more to be done to protect and nurture salmon and sea trout

in their marine phase, including vital changes to the National Marine Plan and wider management of marine fisheries, this is a welcome first step.

We have also been successful in securing significant funding to support our members' efforts to monitor, protect and restore Scotland's fish populations. I would like to express my sincere gratitude to Scottish Government, Marine Fund Scotland, Crown Estate Scotland, NatureScot, National Lottery Heritage Fund, Esmée Fairbairn Foundation (facilitated by the Rivers Trust) and the Missing Salmon Alliance for their valuable and ongoing support. Alongside the vital support we receive from our members, this has allowed us to increase our collective capacity to help address the range of pressures that our freshwater environment is facing.

In addition to addressing the pressures that our wild salmon face, it is clear that large-scale nature restoration projects have a vital role to play. We have supported the Riverwoods initiative in an effort to improve riverside habitat and ensure that our rivers are resilient in the face of a warming climate (see Page 22). As we reported last year, we have increased our capacity to support the work of our members, through the recruitment of our Director for Nature Finance. You can read more about this work on Page 10.

One of the most rewarding aspects of working for Fisheries Management Scotland is the regular contact I have with the dedicated professionals that make up the fisheries management community in Scotland. Without fail, they show a willingness to go the extra mile to protect and restore our native fish populations, often against a backdrop of understandable frustration, and sometimes open negativity. I hope this review gives you a sense of the efforts that members of our community are making to improve what is a very challenging situation. Please support these efforts in any way that you can.

Supporting our members' efforts to protect the water environment

Brian Davidson
Director of Communications and Administration, Fisheries Management Scotland

Jenny McNeill
Finance and Administration Manager, Fisheries Management Scotland

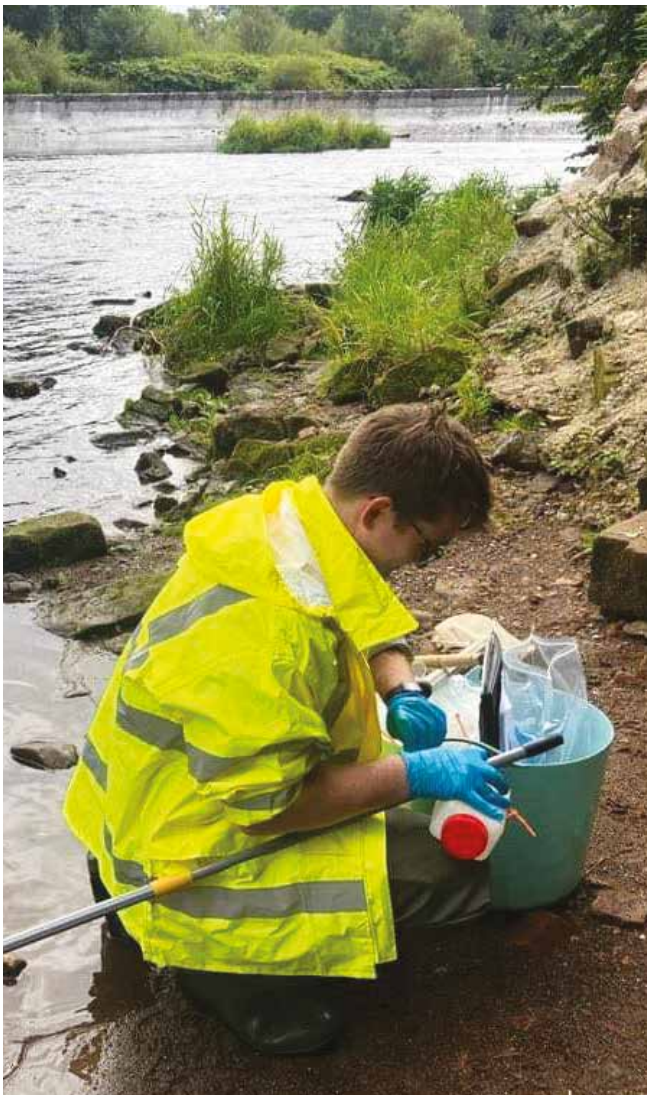
2023 was an extremely busy, but productive, year. Among many things, Fisheries Management Scotland secured backing from Marine Fund Scotland to support essential projects across a range of priority areas – including predation, invasive non-native species, electrofishing and fisheries management planning – and we touch on two of these topics below.

To keep pace with public funding opportunities we have worked hard to ensure that our project and financial management systems robustly support Fisheries Management Scotland in this growing area. This includes demonstrating that our organisation is not only compliant, but also progressive in a number of requirements where public funding is received, including initiatives such as Fair Work First.

Pink salmon

In 2023, we reported that we were gearing up for the expected arrival of invasive non-native Pacific pink salmon. Since then we've worked hard with partners on the Pink Salmon Task Group to deliver coordinated action to manage this emerging threat to our native wild Atlantic salmon. Our desire to see a systematic, national eDNA surveillance programme for these fish aligned perfectly with a funding opportunity, and we secured finance from Marine Fund Scotland to allow our members to undertake sampling in late summer, as well as supporting the operation of a fish trap to capture pink salmon on the River Thurso.

Compared to previous years, far fewer than expected captures of these fish were made in 2023. However, the eDNA programme – incorporating additional data from a Scottish Environment Protection Agency survey – consistently detected pink salmon eDNA in 10 out of 32 surveyed rivers. On a further five rivers, the presence of pink salmon was suspected with various levels of confidence, inferred from the consistency of detecting eDNA in repeated water samples. The full findings of the programme will be shared in due course. We are grateful to the wide range of organisations and people who helped to make this happen: Marine Fund Scotland for supporting this project, the input of the Pink Salmon Task Group partners and our members for delivering the sampling work at very short notice.



eDNA sampling for Pink salmon in the Clyde catchment: Credit Clyde River Foundation

We are now working to secure resources to support ongoing eDNA sampling. In the future and, in tandem with the FMS reporting app, this will help us build a much fuller picture of the extent of the invasions of these fish and how we can best manage the situation.

The fish trap on the River Thurso: credit Jamie McCarthy

Deterring seals from freshwater

We successfully bid for a project to allow us to purchase a number of acoustic deterrent devices and watercraft to help our members manage interactions between seals and wild salmon in rivers. The objective of this project is to help salmon fisheries managers to protect wild Atlantic salmon from seal predation by deploying these non-lethal devices to deter seals from entering rivers. The project will be delivered by Fisheries Management Scotland members, who will deploy mobile deterrent devices within rivers where seal interactions have been identified.

Enforcement priorities – Wild Salmon Strategy

As part of the Wild Salmon Strategy implementation plan, the Fisheries Management Scotland Enforcement Committee has developed recommendations which will help to advance work relating to managing exploitation through effective regulation, deterrents and enforcement. The existing salmon and freshwater fisheries legislation is complex and we have identified important areas where we believe things could be improved and modernised, particularly in relation to the current penalty regime. We look forward to making a significant contribution to this process, in order to better protect wild fish.

Fish crime is a priority for the Wild Salmon Strategy

Communicating our work

Considerable progress has been made in refining our communications about the wild salmon crisis by working with the Missing Salmon Alliance (MSA). This includes the development of consistent messaging about our collective advocacy, engagement and project work through the MSA Communications Group. We participated in a very successful MSA engagement event at the Curzon Cinema, London where all MSA partners spoke to a broad audience about the issues facing wild salmon and the priority actions each partner is delivering. The MSA has been invaluable in helping us to communicate issues, including pink salmon and enforcement, to different audiences.

Managing interactions with aquaculture

Charlotte Middleton
Aquaculture Interactions Manager, Fisheries Management Scotland

Looking back

During 2023 we engaged extensively with SEPA on the Sea Lice Framework, which has been designed to offer greater protection for wild salmon in Scotland. Fisheries Management Scotland and our members in the "aquaculture zone" contributed to this process through workshops, meetings and specific engagement sessions, while we also worked with our members to develop two comprehensive consultation responses. We are pleased that SEPA has responded to our input, resulting in a greater focus on regulating the impacts on sea trout and changes to some of the proposed Wild Salmon Protection Zones – the areas where sea lice interactions will be managed.

As we wait for this new regulatory regime to be fully implemented, we have continued to support our members in their engagement with Environmental Management Plans (EMPs), included as a condition of planning on fish farm permissions to help manage sea lice interactions.

In addition to addressing issues associated with sea lice, there remains an ongoing need to introduce robust and enforceable regulation to address fish farm escapes in both marine and freshwater environments, in line with the Salmon Interactions Working Group recommendations. Our app (see page 28) is an important means for us to understand the extent of any escapes in Scotland beyond those reported to the Scottish Government, as we still have reports of escaped farmed fish in areas where no escapes have been reported by farmers.

2023 was the third and final year of the West Coast Tracking Project, a partnership initiative involving the Atlantic Salmon Trust, Fisheries Management Scotland and the Marine Directorate. We are grateful to all members who were part of this exciting and ambitious project. Vast amounts of data have now been collected, and when analysis has been completed this will contribute important information to the Sea Lice Framework and inform efforts to protect wild Atlantic salmon during the early phase of their marine migration.

Farewell from Charlotte

In January, Fisheries Management Scotland sadly said farewell to Charlotte, as she heads off to pastures new in Australia. We thank her for all her time and devotion to the role.

"I have really enjoyed my time working both with the Fisheries Management Scotland team and our knowledgeable and enthusiastic members, representing the best interests of wild fish in discussions with industry and regulators. In particular, I've enjoyed working with our members and directly supporting some of the monitoring work when I've had the opportunity to do so. I've learnt a lot from this role that I'm sure will stand me in good stead for wherever my career may take me in future," she reflected.

A new arrival

Although we are sorry to bid farewell to Charlotte, we are pleased to welcome Helen as our new Aquaculture Interactions Manager. She brings extensive experience of working with the salmon farming industry, government and regulators and looks forward to applying her knowledge to benefit our membership, as well as the protection of wild fish.

Looking ahead

Key priorities going forward for 2024 will include supporting members throughout the implementation of the Sea Lice Framework and phasing out of Environmental Management Plans (EMPs). We are now working to establish the process for ongoing monitoring and the role that Fishery Boards and Trusts may play in this essential element of the framework.

In preparation, the SFCC sea lice sampling protocol is undergoing revision and will soon be completed. sWe hope to build on the work funded for several years by Scottish Government and Crown Estate Scotland and look forward to continuing to work with SEPA to ensure that the framework is delivered in a robust, transparent and enforceable manner – in line with the Salmon Interactions Working Group's recommendations.

Aquaculture pens on the west coast of Scotland

We also look to continue to enhance local relationships and engagement between the aquaculture industry and our members, for the benefit of wild salmon and sea trout, as well as exploring future opportunities for positive collaboration.

We would like to express our gratitude to Scottish Government and Crown Estate Scotland for funding the post of Aquaculture Interactions Manager and for the continuing support from Crown Estate Scotland.

Sweep netting as part of sea lice monitoring

Scottish Fisheries Coordination Centre – a year in review

Sean Robertson
Manager, Scottish Fisheries Coordination Centre (SFCC)

Over the past year the Scottish Fisheries Coordination Centre (SFCC) has delivered an annual training programme for members, consisting of electrofishing, freshwater pearl mussel surveying, fish scale reading, GIS (mapping) and others. This year we also held a workshop on using drones for fisheries management surveys, and identifying common workflows and challenges that members face.

SFCC also undertakes project work, with one of the notable projects in previous years being wild salmon pressures mapping. In 2022-2023, Crown Estate Scotland supported Phase 1 of a national fisheries management planning project, which saw the collation of data from 44 Fishery Management Plans across Scotland. The plans were formatted as online "storymaps" on an interactive webpage.

This approach has allowed for management actions to be aggregated into a national dashboard which shows key information, such as the status of actions and how large an area they affect. Phase 2 of this project was supported by Marine Fund Scotland in 2023, and seeks to compile more information on these management actions, as well as adding more contextual information to the final agreed plans.

There are also many emerging uses for these plans by members and their stakeholders and they could act as a bank of potential investments for nature finance markets and provide novel funding streams to get these actions off the ground for the benefit of wild salmon and the freshwater environment. We are very grateful to Crown Estate Scotland and Marine Fund Scotland for supporting this important project.

Following a further successful application to Marine Fund Scotland, SFCC coordinated the procurement of electrofishing equipment for local and national juvenile fish sampling programmes and improving the sector's understanding of the status of fish populations. Although no central government funding is available for the National Electrofishing Programme for Scotland in 2024, we are actively exploring alternative ways to fund this vital work in future years.

A key element of successfully securing private finance for nature restoration is to be able to measure the impact of our actions. Working alongside Paul Sizeland, SFCC has contributed to the ongoing development of metrics and methodologies to support investment into catchment restoration. This includes contributing to a water metrics and standards group, which has representation from SEPA, NatureScot, Forest Research and SRUC. This is designed to measure impacts and benefits on the aquatic environment that are directly relevant to wild fish. SFCC contributes to the Riverwoods Science Group and is also playing a key role in the development of the Riverwoods Digital Centre for Excellence, which aims to provide a central resource for local managers to showcase best practice in riparian woodland creation.

SFCC continues to maintain reporting apps and dashboards for pink salmon, escaped farmed fish, diseased fish and in-river seal sightings. These apps are vital to produce a national picture of these pressures, and have been so successful that in 2023 the pink salmon reporting app was expanded to cover England and Wales, in partnership with the Environment Agency and Natural Resources Wales. Although a smaller number of pink salmon were reported in 2023 than in previous years, the app remains a powerful tool for monitoring, alongside other techniques such as environmental DNA sampling.

Members undertaking river invertebrate sampling at an SFCC course delivered by Buglife Scotland

Candidates from one of SFCC's Team Leader Electrofishing courses run by Galloway Fisheries Trust

Planning for the future has been a vital part of this year's activity, and at the Biologist's Annual Meeting in February a strategy was agreed on for operational objectives for the year ahead, as well as objectives for the next five years. Some of the key priorities are to support delivery of the wild salmon strategy; investigate how more resources can be brought into SFCC; keep up-to-date with relevant developments in AI; development of nature finance metrics; and the creation of a Fisheries Monitoring Practitioner's Directory, to showcase the skills of member organisations and ensure that we are well placed to take advantage of opportunities to improve the health of our rivers.

A site visit to the Allt Lorgy for trainees on the Working With Rivers programme, hosted by the Spey Catchment Initiative and CBEC eco-engineering

Nature finance: putting a price on natural capital

Paul Sizeland
Director for Nature Finance, Fisheries Management Scotland

Public funding through mechanisms like the Nature Restoration Fund, Peatland Action, National Lottery Heritage Fund and agricultural and woodland support schemes will not be enough to address the nature and climate crises. Midway through 2024, I was appointed as Fisheries Management Scotland's Director for Nature Finance to explore new sources of funding. My post, facilitated by The Rivers Trust and supported by the Esmée Fairbairn Foundation and the Missing Salmon Alliance, aims to help develop the nature market to deliver and sustain improvements to rivers and associated habitats, for the long-term benefit of fisheries.

An initial piece of work in this field involved coordinating input into the review of the Forestry Grant Scheme. We all understand the benefits of "planting the right tree in the right place" which is so relevant for the health of our rivers. It was therefore good to see that, in July, Scottish Forestry introduced an uplift in grants for riparian planting and produced target maps for tree planting for riparian benefit. These incorporate data from the Scottish River Temperature Monitoring Network to identify target areas.

A cornerstone of our work on nature finance is a project to develop the operational framework for a source-to-sea catchment restoration fund.

50p piece with Atlantic salmon © 2023 The Royal Mint Limited

This is funded through the Facility for Investment Ready Nature Scotland (FIRNS), jointly funded by NatureScot and the National Lottery Heritage Fund. We are working on this in partnership with NatureScot, Marine Directorate, Crown Estate Scotland and the Scottish Marine Environment Enhancement Fund (SMEEF).

SMEEF, which is seed funded by Scottish Government, has successfully secured corporate finance for locally developed projects in the marine environment. We are looking to improve and extend this model to river catchment restoration actions. We have engaged Finance Earth and Howell Marine Consulting, who are working with many of our members to recommend options for how this could work. We have also taken on Leah Reinfranck, as an intern, who has already been in contact with many of our members to explore how communities can benefit from this fund.

We have also been supporting our members to access FIRNS "market development" funding. The Spey Catchment Initiative is working to develop a Landscape Enterprise Network (LENs), with the close involvement of the whisky industry. In essence, a LENs is a trading system for organising the buying and selling of nature-based solutions – land management measures that deliver ecosystem functions, such as water quality management, flood risk management, resilient supply of crops, carbon, or biodiversity outcomes.

LENs allow businesses to de-risk operations that depend on ecosystem functions provided within a catchment, by paying land and water managers in the catchment to safeguard these functions. The Forth Rivers Trust has also secured a FIRNS award to develop a LENs for the Leven catchment in Fife, and Galloway Fisheries Trust has gained FIRNS funding to deliver a suite of habitat restoration projects across the Annan catchment.

As nature markets develop, investors will require reliable methods to measure and report positive biodiversity impacts resulting from their investments. We need to make sure that impact measurements are science-based and representative of the factors important for river and fish ecology. We are working with a range of national groups who are drawing up water-based metrics in relation to nature market development,

Brash from commercial forestry used for riverbank stabilisation, River Goil, Argyll

to ensure that meaningful indicators of river health are fully represented and use the science our sector is familiar with.

Engagement with others working in the sector has been vital. The Rivers Trust has been a source of solid advice in setting up our approach to nature finance, and we have continued to build a strong network of useful contacts through engagement with Esmée Fairbairn Foundation, The Missing Salmon Alliance, Atlantic Salmon Trust, Scottish Government, NatureScot, SEPA, the Scottish Nature Finance Pioneers Network, UK Green Finance Institute and members of the investment community to test some early ideas. We have also participated widely in events – including the Institute of Fisheries Management conference and the UK and Scottish Nature Finance conferences. We have also gained a seat on the Nature Finance Third Sector UK Leaders Roundtable.

Looking ahead, we want to gain a collective view of the action required to improve Scotland's rivers. We intend to use our members' fisheries management plans, supported by funding from Crown Estate Scotland and Marine Directorate, to prepare a consolidated portfolio of actions that we can use to market the investment opportunity for our rivers. We are hopeful that a subsequent FIRNS proposal will secure the necessary funding to help deliver this piece of work.

We are most grateful to the following organisations that support all our work on nature finance through funding and partnership working

Driving river habitat improvement projects in Argyll

Alan Kettlewhite
Senior Fisheries Biologist, Argyll Fisheries Trust

Utilising skills originally learnt at a short course on practical habitat improvement techniques delivered by Wild Trout Trust (WTT) in 2015, Argyll Fisheries Trust continues to deliver habitat improvement projects on the River Goil, which is located on the Cowal Peninsula, with the help of the Loch Lomond and Trossachs National Park Authority.

The area's steep-sided afforested glens, deep sandy soils and unfenced livestock grazing on the valley floor have posed a unique set of challenges to the local fish populations. Large quantities of fine sediment in the riverbed substrates severely limit in-stream cover for young fish, therefore the priority of our project is to reduce the amount and rate of bank erosion.

Initial works, in the form of stock fencing and tree planting, were quickly undermined after only a few years, so we had to find a more robust technique to stabilise the riverbanks. The short section of green bank revetment (GBR) installed during our 2015 workshop held up well and the bank has been successfully revegetating, but upscaling of this resource-hungry work was needed.

Since our first hand-built section of GBR was completed in 2020, we have continued to improve the efficiency of the GBR installation process and the length of bank treated each year, by increasing the mechanisation of the work – with the help of our now trusted contractors – by being canny with sourcing materials and by keeping project partners on board.

The GBR work has quickly begun to deliver improvements in the condition of the riverbed, with pebbles and cobbles appearing where sand previously smothered the substrate. Fish surveys and redd counts have shown us that the fish approve. We still have challenges to overcome on catchment-scale management, but we have obtained enough experience and support to expand the work to neighbouring rivers – the Ruel and the Eachaig – where similar issues are affecting the production of smolts.

Examples of green bank revetment work on watercourses on the Cowal peninsula - these will help reduce sedimentation

Keeping cool on the Nith

Debbie Parke
Senior Biologist, Nith Catchment Fishery Trust

River Nith fishery managers have long recognised the importance of habitat protection and enhancement, especially on the riparian fringes of the catchment's spawning tributaries. Habitat enhancement works started on the Nith in the mid-1990s and continue to this day. Early schemes were focused on protecting vulnerable riverbanks, providing cover for fish in root structures, increasing detritus from leaf litter and increasing the numbers of invertebrates to sustain juvenile fish.

While current habitat schemes still seek these benefits, global warming has enhanced the need for more trees to cast shade on nursery streams and cool the waters of tributaries. The Nith, like many other Scottish rivers, is experiencing increasingly frequent spikes in water temperatures, which often approach the threshold tolerated by salmonid species.

During 2023, the Nith Catchment Fishery Trust (NCFT) was fortunate to be given a new opportunity to deliver significant habitat improvement works on the Crawick Water, a valuable spawning tributary. This was achieved thanks to Extreme E – an electric, off-road racing organisation, which held a race in a disused coal mine in the upper Nith catchment in 2023.

One of the benefits of Extreme E is that they always support local environmental projects close to where they hold their events, and riparian woodland creation on the Crawick Water was considered a worthy project by their scientific panel. As part of the project, Vodafone Business provided 30 temperature monitoring devices, so the NCFT can log water and air temperatures throughout the catchment and have live access to temperature data remotely. In addition, Vodafone Business provided two remote water quality probes that can be deployed in the mainstem river and transmit data back to the office.

NCFT is now using this important information to prioritise future habitat enhancement works and we would like to thank Extreme E and Vodaphone Business for their support in assisting this project and protecting our future stocks of Atlantic salmon.

Remote land-based temperature sensor to monitor changes in air temperature as the habitat scheme matures

New 4-hectare habitat scheme on Crawick Water funded by Extreme-E

How genetic tools can inform salmon management strategies

Sunny Bradbury
Fisheries Manager, Cromarty Firth Fishery Board

Effective fishery management can benefit significantly from an understanding of both population ecology and genetics. Accordingly, there is growing interest in the use of genetic tools to assess the conservation status of Atlantic salmon in Scotland and beyond.

As well as routine assessment of genetic diversity within and between local river populations, genetics can also be used to estimate the total number of breeding adults contributing to any given generation. This can reflect a population's capacity to adapt to changes in the environment, and therefore its resilience to climate change.

In light of growing support for the management of salmon at the population level, and the capacity of genetic approaches to shed light on important demographic dynamics, our hope is that these tools will help to identify the most appropriate management strategy. And the specific research objective is to determine the minimum number of breeders in the population component above Meig Dam.

To assess the health of the Meig stock and identify specific issues limiting juvenile production in the upper catchment, Cromarty Firth Fishery Board have designed a project, in collaboration with The Institute for Biodiversity and Freshwater Conservation (UHI), to screen individual fish for genetic relatedness. All genetic samples will be taken during routine PIT tagging operations in Strathconon. This work will be funded by the Cromarty Firth Watershed Trust.

The Upper Meig: an extensive area of apparently excellent habitat which fails to recruit significant numbers of fish

This project is one facet of a targeted approach to identify factors limiting carrying capacity and inform upper catchment restoration and mitigation stocking exercises. Given the extensive stocking history within the Conon district, this kind of work has the potential to be very enlightening and will inform best practice for future stocking priorities.

In the current climate, it is essential that we are prepared to explore every viable option to increase the resilience of river systems in Scotland. This project highlights our commitment to ensure that management decisions are well informed and that limiting factors are identified rather than assumed.

The BioMAG laboratory at The Institute for Freshwater Biodiversity and Conservation, UHI where fish from the River Meig are to be screened for genetic variation.

Save the Spring

Lorraine Hawkins
Director, River Dee

Climate-linked changes are leading to major pressures on Atlantic salmon populations. 60% of monitoring sites in the upper Dee last year exceeded temperatures that cause thermal stress in salmon and some of our spring sub-populations are now at risk of extinction. For example, monitoring of the number of female fish returning to the Girnock burn has shown a decline from as many as 150 a year in the 1960s, to just two in 2023.

Save The Spring is a 20-year programme to restore and futureproof the upper Dee catchment, the heartland of our spring salmon. It launched late in 2023 and is a partnership between the River Dee Trust, Dee Fishery Board and Atlantic Salmon Trust.

The programme takes a two-pronged strategy: firstly a focus on landscape-scale habitat restoration of the catchment; and secondly closely monitored fish repopulation at a local scale, to immediately preserve these fish.

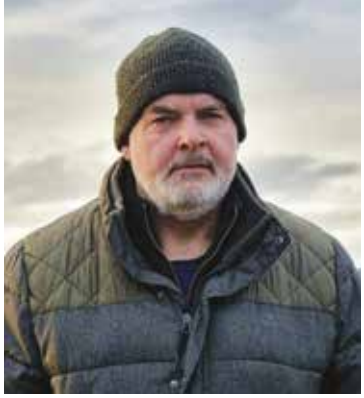
The first part of this strategy is working to reduce temperatures, control the flow of water off the land, reduce the impact of flooding, and maintain better flows through spring and summer. It also gives the fish shelter, protection from predation, more diverse habitat and more invertebrates to eat.

Habitat restoration, while essential, will not solve the crisis on its own. The second prong aims to maximise the number of adult spawners in the river. This will result in wild-hatched salmon, which have better survival rates and produce more eggs than hatchery-raised fish.

The methods being proposed to achieve this are kelt reconditioning – where fish that have spawned are kept in a special unit until they are ready to be released to spawn naturally a second time round – and smolt-to-adult supplementation, whereby wild smolts are captured, grown to adulthood in a university facility, and then released back into the river to spawn.

We are presently working with partners – including the University of Stirling, and the Scottish Government and its agencies – to develop and refine these methods, while using detailed monitoring to demonstrate the best route forward, which can then also be applied elsewhere.

Native riverbank trees planted on the River Clunie, Dee



Pump storage: a hydro gold rush

Brian Shaw
Director, Ness DSFB

After almost 40 years when no new pump storage hydro (PSH) schemes were developed in the UK, there is now a gold rush by developers seeking new sites. The switch from fossil fuels to renewables, which tend to produce power more intermittently, means more long-duration energy storage is required.

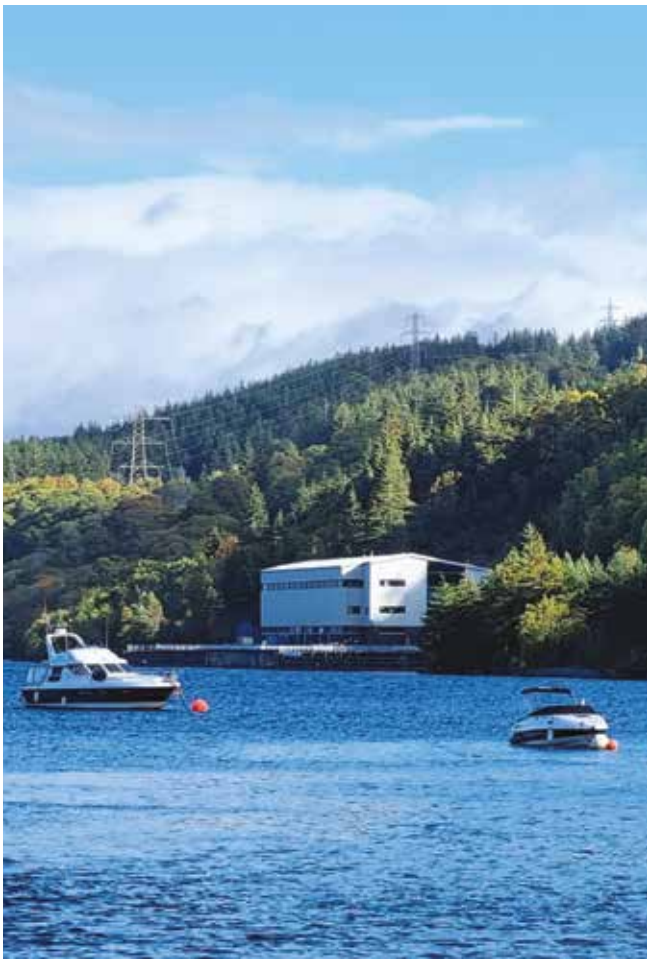
Climate change is the greatest threat to our native biodiversity, including wild salmon, and we are fully supportive of the de-carbonisation of the national grid. However, while we are not against PSH per se, we strongly believe that such projects should be located where the environmental risks are lowest.

The Loch Ness catchment is a hotspot for PSH schemes. Foyers PSH was commissioned in 1974; the Red John PSH scheme, near Dores, was granted planning permission in 2021; and, in November 2023, the planning application for the proposed Loch Kemp scheme was submitted. Of particular concern is the cumulative impact of these multiple schemes on the ecology of Loch Ness.

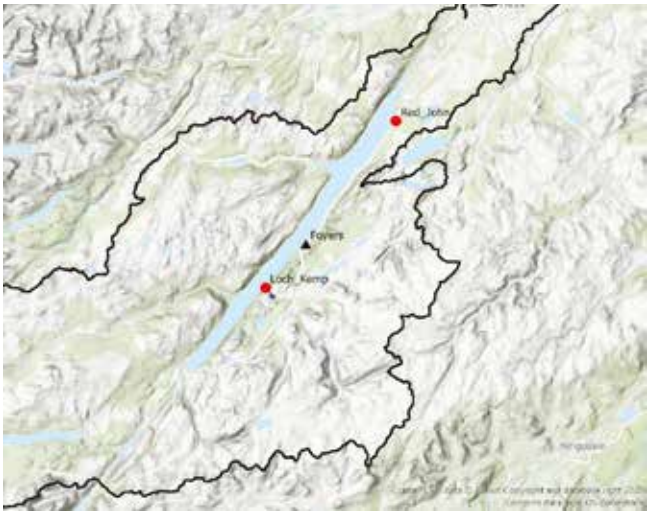
Our concerns relate to PSH's impact on salmon smolt migration through lochs, which is a huge knowledge gap, and on the temperature and hydrology of Loch Ness. We are also concerned about the impact that significant, rapid water level changes (up to 73 cm on a daily basis, according to the Kemp planning documents) can have on shoreline ecology and River Ness flows; as well as the wider ecosystem impacts.

As a result, we commissioned the Norwegian Institute for Nature Research (NINA) to produce a report on PSH's impact on Loch Ness. This was received in August 2023 and now guides the board's response to PSH.

We are actively campaigning against any further PSH schemes on Loch Ness, until further research is completed and the PSH sector can prove that its activities are as environmentally benign as claimed. In the meantime, we are asking the Scottish Government to produce clear guidance to ensure that the sector only develops in the most appropriate and least damaging locations.



Foyers pump storage power house on the shore of Loch Ness



Existing and proposed pump storage schemes on Loch Ness

Changing times on the Forth

Jonathan Louis and Amelia Heath
Co-Directors, Forth Rivers Trust

2023 has been a time of change on the Forth. Our previous Director, Alison Baker, stepped down after 10 years of championing river conservation across the catchment, having shaped the Forth Rivers Trust into what it is today.

With Alison's departure, a new chapter opened, paving the way for a new, shared leadership model and the opportunity to continue building on what the trust has achieved. We were appointed as Co-Directors, to continue to champion the catchment's rivers, wildlife and communities.

With a change in leadership came a change in outlook. Working with our trustees, staff and volunteers, we have updated the trust's vision for 2040. It states that: "the rivers and wildlife of the Forth will be healthy and vibrant. Our rivers will be naturally functioning, unrestricted by barriers, free from pollution, and filled with the widest possible range of native species, benefiting the environment and local communities".

We are already delivering this through several projects. In 2023, the trust planted over 3,000 riparian trees; removed one very large weir on the Linhouse Water, West Lothian, by hand; engaged nearly 300 school children with a project on the life cycle of brown trout and their local river; and supported over 200 volunteers to get involved with protecting and enhancing habitats.

We have also installed leaky dams for natural flood management purposes, weaved over 300 metres of willow to help protect riverbanks, and created wetlands to improve water quality, support biodiversity and create priority habitats for wading birds. Change is exciting; it provides new opportunities and helps inspire us to deliver for the environment, wildlife and communities.

We look forward to continuing work with our fellow trusts and partners across Scotland to halt the biodiversity crisis, reduce declining salmon numbers and help communities to enjoy their local rivers, while delivering landscape-scale restoration.

The River Balvaig near Balquhidder in Loch Lomond & The Trossachs National Park winds its way East across the valley floor. Credit Jonathan Louis

Catch and release: improving fish welfare

Brian Davidson
Director of Communications and Administration,
Fisheries Management Scotland

Water temperature has a fundamental influence on the health of Atlantic salmon populations. We are facing a crisis from the changing climate, with nine of the ten warmest years occurring since 2002, and seven of the ten wettest since 1998. Climate change could see summers in Scotland becoming up to 4.8 °C warmer and 40% drier. These increasingly regular extremes will have direct consequences for our fish and will have increasing impact on anglers. The Scottish River Temperature Monitoring Network data show that, during the summer of 2018, 69% of Scottish rivers experienced temperatures that cause thermal stress for salmon on one or more days.

We know that different species are also more vulnerable to warm water/low oxygen levels than others, for example cyprinids are better able to cope with elevated water temperature and reduced oxygen levels, whereas salmonids are particularly vulnerable in these conditions. In 2023, the Wild Salmon Strategy Science and Evidence Board developed advice on angling in warm rivers, which was circulated to all rivers in June.

But what more can anglers do? Catch and release of salmon is now universally practised, and anglers play a significant role in the conservation of the species. We also know that poor fish handling and air exposure can contribute to higher mortality rates of released fish. Fisheries Management Scotland will be working with our partners to provide updated guidance on catch and release best practice to reflect our expanding knowledge of factors that can impact fish welfare and survival. We know that as more anglers return more fish, taking a photo can be an increasingly important part of the process, but it can also compromise the survival of the fish. Our guidance will not only include advice on handling fish during release but will also consider other elements to optimise the best chance of successful release, including guidance on hooks and lures, taking photos of fish and fishing during high water temperatures.

Invasive species and diseases kill fish and block waterways

Don't spread them on your kit

Invasive plants can rapidly cover the water surface, interfering with fishing and reducing oxygen levels in the water

Aggressive invasive shrimps attack and kill native species including fish eggs

Diseases and parasites such as *Gyrodactylus salaris* kill fish and can close fisheries

Crayfish burrow into river banks causing severe bank erosion

Protect the environment and the fishing you enjoy by following these simple steps. It's even more important when you visit a new waterbody, whether at home or abroad:

CHECK

Check your equipment, clothing and footwear when you leave the water. Remove any mud or plant material and leave it at the site.

CLEAN

Clean everything thoroughly as soon as you can. Use hot water if possible.

DRY

Dry everything thoroughly for as long as you can before using it elsewhere, ideally for 48 hours.

Find out more about invasive plants and animals and how you can help to stop the spread at:

nonnativespecies.org/checkcleandry

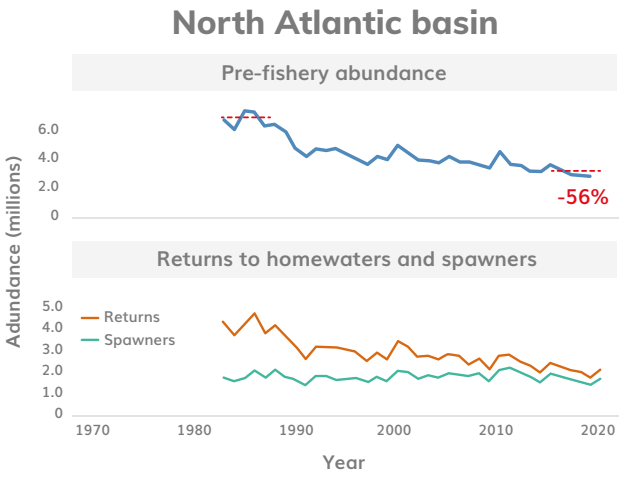
Department for Environment Food & Rural Affairs

ANGLING TRUST

Wild Salmon Connections: Stimulating Solutions

Dr Wendy Kenyon
Wild Salmon Connections Programme Manager,
Missing Salmon Alliance

Wild salmon are in crisis. The International Union for Conservation of Nature (IUCN) has classified British populations as "endangered", having calculated that they have declined by 30-50% since 2006, while global populations have declined by 23%. We know that abundance, returners and spawners are all on the decline.



Source: J Gillson and N Hanson (2022) The status of Atlantic salmon (Salmo salar) in the North Atlantic, IYS Synthesis Symposium 2022. Available at: 02a_Gillson-Hanson-Synthesis-Status-of-Atlantic-salmon-vMonday-1.pdf (yearofthesalmon.org)

As a keystone species and an indicator of ecosystem health, the status of wild salmon is inextricably linked with the twin crises of climate change and biodiversity loss. At the time of writing, headlines tell us that – for the first time – global warming has exceeded 1.5°C across an entire year. Meanwhile the State of Nature Report published last year showed that the species studied had, on average, declined by 19% in the UK since monitoring began in 1970.

There is, however, hope. We know that restoration projects can have clear benefits for nature, people and the climate. We know that some healthy populations of wild salmon remain and we know that they can recover. Evidence shows that connecting stakeholders, formulating a plan and executing it, can lead to conservation success. For example, in 2021, the IUCN changed their assessment of Eastern Atlantic bluefin tuna from "endangered" to "least concern", reflecting the improving state of the stock.

For wild salmon, an urgent, renewed international focus is now required.

The Missing Salmon Alliance (MSA) is connecting wild salmon communities across the Northern Hemisphere to kickstart this renewed focus.

With a vision of thriving populations of wild salmon at the heart of healthy, biodiverse ecosystems, MSA is working with friends across the globe to safeguard wild salmon for the future. This international initiative is called Wild Salmon Connections and the purpose is:

- To inspire current generations to take action to ensure a thriving future for wild salmon. To strengthen and align concrete action to restore wild salmon at pace and scale.
- To demonstrate readiness for investment in habitat restoration, delivering multiple ecosystem benefits.

We have three pillars: policy, practice and partnerships.

Stimulating policy solutions

A multitude of policy commitments seek to address the wild salmon crisis, at international and national level. Internationally, the UK Government is a signatory to the Convention for the Conservation of Salmon in the North Atlantic Ocean.

Nationally, the Scottish Wild Salmon Strategy and the accompanying Implementation Plan set out action for government (as well as business and charitable sectors) to conserve wild salmon.

Working with our colleagues internationally, we want to better hold policy makers to their commitments. We will maintain the policy focus by clearly showing the state of wild salmon, their habitats and the pressures they face.

Stimulating practical solutions

We all know that, in order to thrive, wild salmon need access to cold, clean water in free-flowing rivers. There are more and more exciting river restorations projects taking shape across the north Atlantic, not least right here in Scotland. Connecting these initiatives will allow successful solutions to be rolled out further and faster, creating multiple benefits.

FMS is a core member of Wild Salmon Connections. Through this initiative, we will put the work of FMS members into an international context, sharing our own good practice and learning about what works best. Working better together we can accelerate the implementation of effective practical solutions to restore Atlantic salmon throughout their range.

Stimulating partnership solutions

The Kunming-Montreal Global Biodiversity Framework is a historic agreement that commits nations to halt and reverse nature loss by 2030. Target 19 aims to mobilise $200 billion per year for biodiversity, including $30 billion from international finance.

This target is about "leveraging private finance, promoting blended finance, implementing strategies for raising new and additional resources, and encouraging the private sector to invest in biodiversity, including through impact funds and other instruments". Wild Salmon Connections is exploring such levers to benefit wild salmon, while providing multiple biodiversity and climate benefits at the same time.

There are many such partnerships and investments already, including here is Scotland. Wild Salmon Connections seeks to increase such partnerships and investment in order to contribute to saving the species.

Wild Salmon Connections will be working in these areas over the coming months. We will assemble in London in January 2025 to demonstrate progress and commit to this urgent, renewed international focus, and accelerate action to save wild salmon for future generations.

Bay of Fundy, 2023. These rivers once held a robust salmon population before it was extirpated when a causeway was built in the 1960s. A recovery began after the causeway was partially opened 20 years ago and fully opened just last year. It is also a story of local people, First Nations and many others working together to remove barriers and help salmon to recover.

Riverwoods: a Scotland-wide blueprint for scaling up riparian woodland creation and restoration

Mike Thornton
Riverwoods Project Manager

Only 17% of Scotland's riverside habitat is in good condition*. The rest is degraded, with little or no tree cover. Given the special significance of riparian woodlands in providing cool, clean water for wild salmon, our current situation is highly concerning.

Formed in 2019 to combat this pressing challenge, Riverwoods is a broad partnership initiative, led by the Scottish Wildlife Trust, which is collaboratively working towards ecosystem recovery through the restoration and creation of riparian woodlands.

Riverwoods is structured around four key working groups, tackling woodland restoration from all angles: science, delivery, finance and advocacy.

Right now, the Riverwoods Blueprint Project lies at the core of partnership activities. On confirmation of a funding package, over the next four years, the Riverwoods Blueprint Project aims to deliver:

Trees in the ground: creating and restoring 100 hectares of river woodland in three areas that demonstrate strong collaborative efforts across the partnership and with communities.

New funding mechanisms: establishing a new development grant scheme specifically targeting river woodland creation and restoration projects across different stages of scoping, design and funding.

Heightened collaboration: developing a digital centre for excellence that serves as a space for knowledge and data sharing, best practice guidance, and centralised resources, including financial and advisory opportunities.

Standardised measuring and monitoring: devising a comprehensive measuring and monitoring framework of surveying and monitoring protocols to support the evaluation of Riverwoods projects over time.

Community engagement: reconnecting communities across Scotland to their river woodlands and help them shape a vision for the protection and restoration of these special places.

The result - a practical blueprint for river woodland creation and restoration across Scotland that can serve as a model and act as a catalyst for wider uptake of projects.

Fisheries Management Scotland and Riverwoods

Fisheries Management Scotland (FMS) is a pivotal partner in Riverwoods, with Chief Executive, Alan Wells chairing the Riverwoods Advocacy Group and providing guidance on work in the demonstration areas. Sean Robertson, SFCC Manager, is spearheading the delivery of a Riverwoods digital hub.

Robbie Douglas Miller fly fishing on the river Shin. Summer 2023

Atlantic salmon leaping up waterfall on migration.
Cairngorms National Park, Scotland

Achievements this year

Advocacy

Our collaboration with the Scottish Government, led to the successful roll-out of a riparian woodland uplift grant under the Forestry Grant Scheme (FGS) for projects that fall within a Woodlands for Riparian Benefits target area map.

Ahead of World Rivers Day, we engaged with Members of the Scottish Parliament, contributing to the parliamentary debate and raising awareness about our initiatives.

The Riverwoods Advocacy Group developed a strategy for a unified partnership approach to advocacy and developed position papers on Future Grant Support for Forestry, Strategic Framework for Biodiversity, and Managing Deer for Climate and Nature to guide consultation responses from the Riverwoods partnership.

Delivery

FMS played a crucial role in the selection process of three demonstration areas for on-the-ground delivery of river woodland creation and river restoration. Nine out of the 23 submissions were FMS network members. We are proud to announce that Kyle of Sutherland Fisheries Trust was chosen to be one of the three demonstration area delivery partners.

Finance

Riverwoods partner Tweed Forum has been contracted to develop a Riverwoods Development Grant. Filling a gap in current funding models, this innovative grant will support the costs associated with scoping, designing and funding riparian woodland creation and restoration schemes. The grantee will be funded to write a Development Plan for their proposed action area, ideally at a catchment scale, that identifies the need for restoration, as well as the current opportunities and barriers to implementation. Depending on funding, this grant is expected to be rolled out at the end of 2024.

Communications

Following a rigorous consultation process with stakeholders determining how a digital platform can add value to the river restoration space, we have finalised the design of a robust Riverwoods Digital Centre of Excellence. This digital hub will offer tools to practitioners, farmers, landowners and community groups through all stages of their restoration journeys, including planning, funding, delivering and monitoring. Going forward, FMS will – alongside the Scottish Wildlife Trust – bring this digital centre to life.

Another major achievement has been the launch of the Riverwoods Showcase. Scotland: The Big Picture has been working in partnership with the Riverwoods initiative – backed by funding from the Fishmongers' Company's Charitable Trust – to produce a collection of short films and stories. These showcase the work of the many people – including FMS network members – committed to restoring the health of Scotland's threatened rivers, through a range of practical interventions. These case studies feature landowners, gamekeepers and fisheries experts carrying out work, such as expanding river woodlands, restoring degraded peatlands, and reconnecting water courses with their natural flood plains.

Explore the Riverwoods Showcase!
Riverwoods.org.uk/showcase

* Martinez et al., "Survey of Riparian Vegetation Quality" (2015/2016), conducted for the Scottish Environment Protection Agency



Have more virulent Saprolegnia isolates been introduced to Scottish salmon rivers over the last decade?

Vasileios Kyparissis
(PhD student, University of Aberdeen)

Dr Debbie McLaggan
(Program Manager, University of Aberdeen)

Prof Pieter van West
(Chair in Mycology, University of Aberdeen)

Several rivers in Scotland seemed to have suffered more in recent years from lethal saprolegniosis outbreaks than they have done a few decades ago. In some rivers mortalities of 80-90% have been recorded for returning Atlantic salmon.
To investigate why this is happening, several river trusts and boards have funded a PhD research project at the University of Aberdeen.

Saprolegniosis is caused by members of the genus Saprolegnia, which belong to the group of organisms commonly known as oomycetes or water moulds. The disease is only prevalent in freshwater, where it particularly effects salmon and trout. These oomycete pathogens can infect young and/or adult fish, usually manifested by skin lesions. Some rivers – such as the Forss, Berriedale, Langwell, North Esk, Whiteadder and Findhorn – have been recording much higher fish mortalities than others.

At least four of the Saprolegnia species – namely Saprolegnia parasitica, Saprolegnia diclina, Saprolegnia australis and Saprolegnia ferax – are known to cause skin disease in wild salmon which will ultimately lead to their demise. These water moulds are endemic to all freshwater habitats around the world, and can be found in any water body, from rivers, lakes and ponds to holes in the ground that are filled with rainwater.

During infection, Saprolegnia form specialised structures that facilitate the translocation of specifically excreted proteins (effector proteins) into the host cells. These proteins disrupt the defence mechanism of the host. It has been found that more than 1,000 effector proteins are formed by the pathogen and may help with the infection.

Environmental factors, such as temperature and UV exposure, are potential drivers of stress for fish. Therefore, amidst climate change and increases in global temperature, stressed fish may be more susceptible to saprolegniosis and similar diseases.

An increasingly common sight: an adult salmon lying dead in the river North Esk; skin lesions/red marks are visible throughout the whole body of the fish.

Rigorous phylogenetic studies carried out by the Aberdeen Oomycete Laboratory, have revealed at least six taxonomically distinct S. parasitica strains and during outbreaks of the disease, only one strain (which we call phylotype 2) seems to be more prevalent. This strain is very aggressive and is able to kill 100% of salmon during laboratory challenge trials. With this rate of mortality, and the ease with which the oomycete can spread (due to the spores possessing flagella, so being able to swim), saprolegniosis has the potential to threaten the sustainability of salmon populations in Scotland and around the world.

Healthy looking young salmon and trout from the Beltie burn (Aberdeenshire) at the river and wetland restoration site

We hypothesise that the increase in mortality of Atlantic salmon in Scottish rivers is possibly due to the introduction of a more virulent strain over the past decade. Other abiotic factors, such as changes in water temperatures, have also been linked to increased salmon deaths, since warm(er) rivers are likely to induce more stress in the fish, which we know is the biggest risk factor for saprolegniosis.

This research project will sequence the genomes of up to five representative Saprolegnia isolates collected from infected fish from rivers across the country. To do this, we will collect Saprolegnia isolates during a one-year sampling period of 39 rivers in Scotland. These isolates will be pure cultured and the DNA isolated. We will select five representative isolates and sequence their genomes, as well as perform comparative analyses with all known genomes of Saprolegnia parasitica, including isolates from fish farms. Therefore, the focus for the first year is to isolate Saprolegnia strains and species, analyse their DNA, and place them in a phylogenetical tree, to identify how related these isolates are to each other. This can give us an idea of where the isolates may have originated from. We can also identify the isolates which are more pathogenic and may be responsible for the increased fatalities. We will examine the genomes of these more pathogenic isolates in greater detail to identify virulence factors i.e. genes responsible for attacking the salmon.

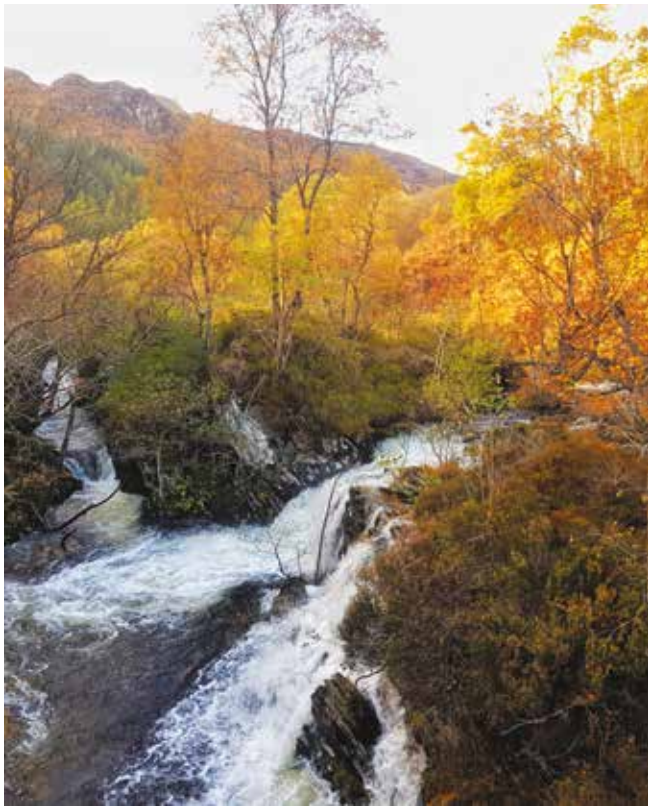
Ultimately the goal is to identify factors that may help alleviate the impact that Saprolegnia has on salmon in freshwater, in the hope that we can design and implement mitigation strategies.

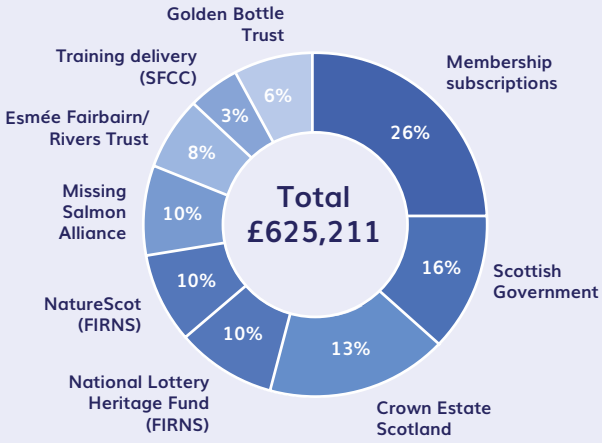
Our funding

As a representative body, the funding for our core activities comes from our members - Scotland's District Salmon Fishery Boards, the River Tweed Commission and Rivers and Fisheries Trusts. Grant funding for specific projects is received from Scottish Government, Marine Fund Scotland, Crown Estate Scotland, NatureScot and the National Heritage Lottery Fund. We also grateful to the Missing Salmon Alliance, Esmée Fairbairn Foundation and The Golden Bottle Trust for supporting key aspects of our work. The graphic to the right is provisional, subject to approval of our annual accounts for 2023-24. We receive no funding from industry.

The strength of Fisheries Management Scotland is thanks to our members, who work collectively to conserve Scotland's wild salmon and native freshwater fish and the environment on which they depend. In addition to the income highlighted above, approximately £1.14 million was distributed directly to our members in 2023/24 – this arises from grant funding (see above).

The majority of our expenditure relates to our staff, who are dedicated to advocating for our iconic migratory and freshwater fish and the freshwater environment. Our latest accounts can be viewed at **www.fms.scot**





Funding received in 2023/24

Aquaculture and wild fish interactions
(Crown Estate Scotland)

Scottish Fisheries Coordination Centre
(Marine Scotland)

Nature Finance
(National Lottery Heritage Fund, NatureScot, Golden Bottle Trust, Esmée Fairbairn Trust and The Rivers Trust)

Salmon Interactions - sea lice monitoring programme
(Marine Directorate - distributed to members)

National Electrofishing Programme for Scotland
(Marine Directorate - distributed to members)

National Adult Salmon Sampling Project
(Marine Scotland - distributed to members)

Pink salmon eDNA and management project
(Marine Fund Scotland - distributed to members)

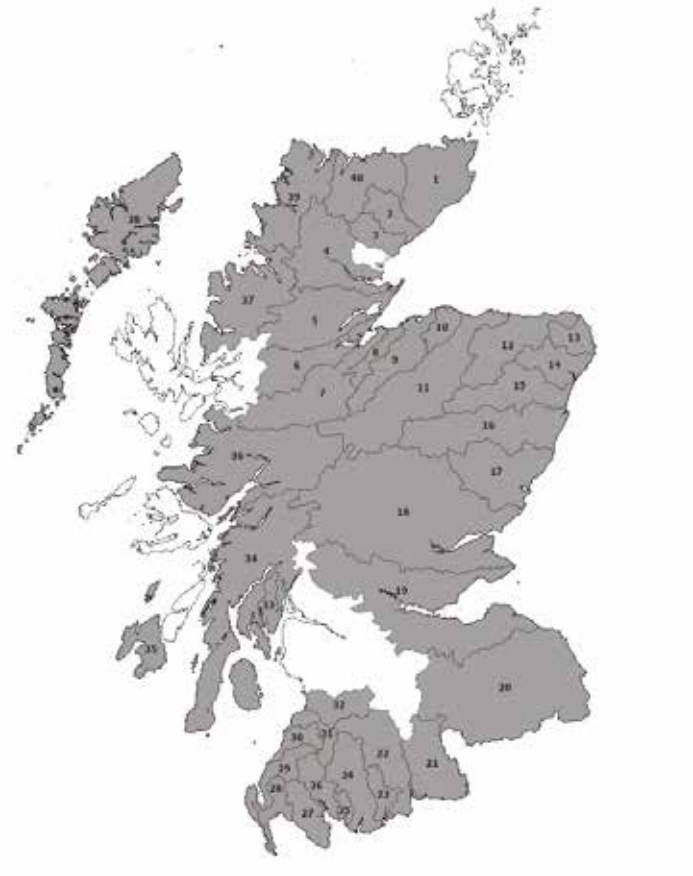
Fisheries Management Planning
(Marine Fund Scotland - distributed to members)

Purchase of electrofishing equipment
(Marine Fund Scotland - equipment distributed to members)

Purchase of seal deterrent equipment
(Marine Fund Scotland - equipment distributed to members)

District Salmon Fishery Boards

1. Caithness
2. Helmsdale
3. Brora
4. Kyle of Sutherland
5. Cromarty
6. Beauly
7. Ness
8. Nairn
9. Findhorn
10. Lossie
11. Spey
12. Deveron
13. Ugie
14. Ythan
15. Don
16. Dee (Aberdeenshire)
17. Esk
18. Tay
19. Forth
20. Tweed
21. Annan
22. Nith
23. Urr
24. Dee (Kirkcudbright)
25. Fleet (Kirkcudbright)
26. Cree
27. Bladnoch
28. Luce
29. Stinchar
30. Girvan
31. Doon
32. Ayr
33. Eachaig
34. Argyll
35. Laggan & Sorn
36. Lochaber
37. Wester Ross
38. Western Isles
39. North & West
40. Northern



Sources:

Source: SFD / DSFB boundaries, SEPA (2009) & SG MS (2020) Some features of this map are based on digital spatial data licensed from Centre for Ecology and Hydrology, © NERC. © Crown copyright and database rights (2021) OS (100024655). Projection: British National Grid.

Rivers and Fisheries Trusts

1. Kyle of Sutherland Fisheries Trust
2. Cromarty Firth Fisheries Trust
3. Ness & Beauly Fisheries Trust
4. Findhorn, Nairn & Lossie Rivers Trust
5. Spey Foundation
6. Deveron, Bogie & Isla Rivers Charitable Trust
7. River Ythan Trust
8. River Don Trust
9. River Dee Trust
10. The Esk Rivers Fisheries Trust
11. Tay Rivers Trust
12. Forth Rivers Trust
13. Tweed Foundation
14. River Annan Trust
15. Nith Catchment Fisheries Trust
16. Galloway Fisheries Trust
17. Ayrshire Rivers Trust
18. Clyde River Foundation
19. Loch Lomond Fisheries Trust
20. Argyll Fisheries Trust
21. Lochaber Fisheries Trust
22. Outer Hebrides Fisheries Trust
23. Skye & Lochalsh Rivers Trust
24. Wester Ross Fisheries Trust
25. West Sutherland Fisheries Trust
26. Flow Countries Rivers Trust

Sources:

Source: Fisheries Trust Boundaries, SEPA (2009) & SG MS (2021) Some features of this map are based on digital spatial data licensed from Centre for Ecology and Hydrology, © NERC. Crown copyright and database rights (2021) OS (100024655). Projection: British National Gr
GIS Ref: gji1197

We need your help!

Our wild salmon face a range of pressures and we need to understand when and where these pressures are taking place. Non-native pink salmon, outbreaks of fish disease, seal predation and escaped farmed fish in Scotland's rivers can cause serious problems for our native wild Atlantic salmon and freshwater fish. In order to fully understand the extent and severity of these issues across Scotland, we need your help to report problems using our online apps.

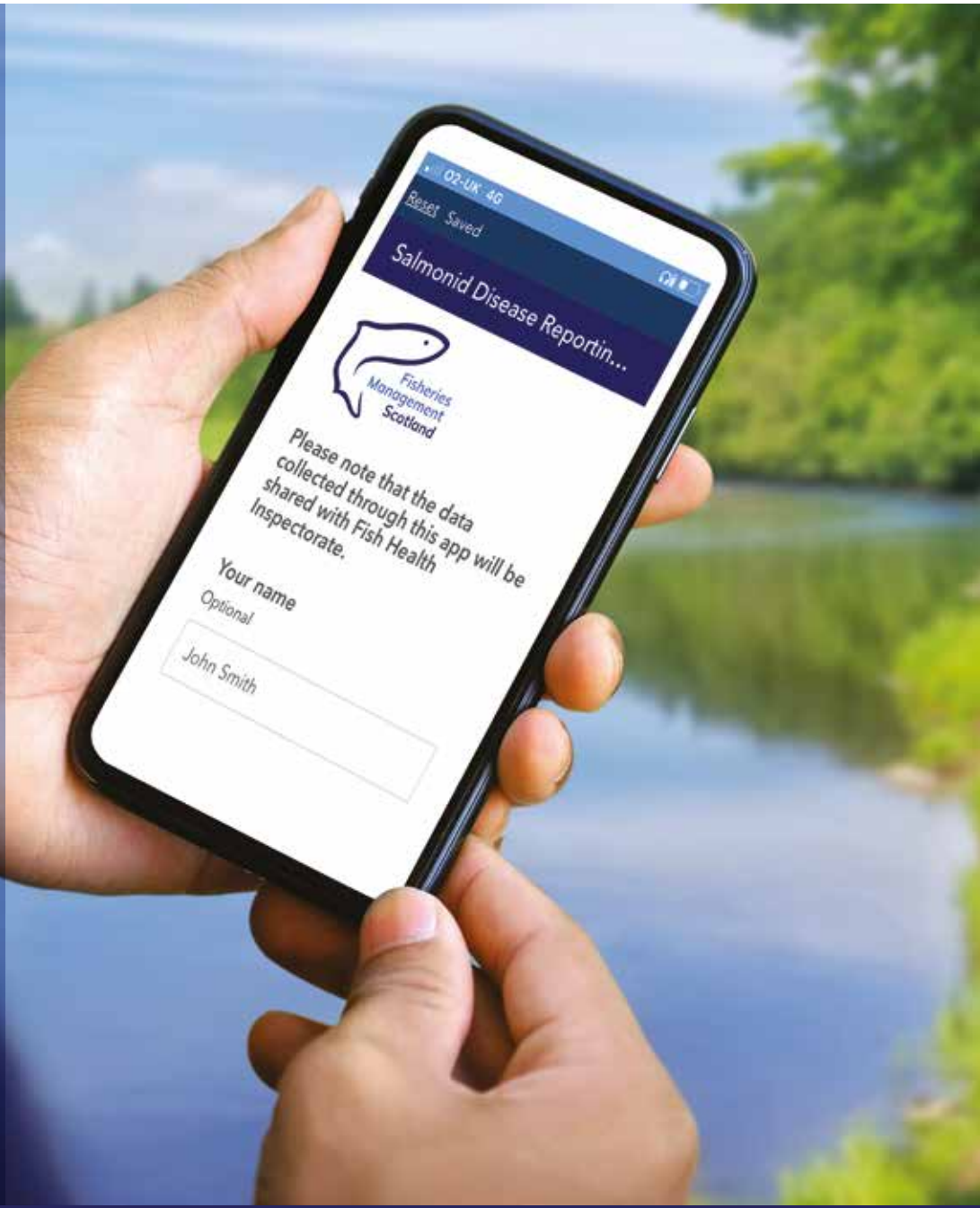
Please download and use these apps to help us address the range of pressures which our wild salmon and freshwater fish face. Find out more at www.fms.scot/fish-reporting-apps-2/

Report fish disease

Report pink salmon

Report farmed fish escapes

Report in-river seal sightings



Find out more on our apps page
https:/ /fms.scot/fish-reporting-apps-2/

Fisheries Management Scotland Directors

Richard Sankey - Kyle of Sutherland (Chairman)
Alison Baker - Forth (Jan 2018 to 30 Nov 2023)
Roger Brook - Argyll (Jan 2018 to 30 Nov 2023)
Lorraine Hawkins - Dee
Alasdair Laing - Findhorn
Peter Landale - Nith
Alexa MacAuslan - Northern
Richard Miller - Deveron
Jamie Ribbens - Galloway
Alexander Scott - Spey
Melanie Smith - Skye & Lochalsh
Jamie Stewart - Tweed
David Summers - Tay (Jan 2018 to 30 Nov 2023)
Robert Younger - Argyll

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Fisheries Management Scotland is grateful to the following organisations for their valuable support.

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