

Follow-up inquiry into salmon farming in Scotland

Submission from Fisheries Management Scotland, 27 September 2024

Dear Rural Affairs and Islands Committee members,

We thank the Committee for inviting Fisheries Management Scotland to provide evidence as part of its follow up into the implementation of the [Rural Economy and Connectivity Committee's \(RECC\) session 5 report](#) recommendations for salmon farming in Scotland.

Fisheries Management Scotland (FMS) is the membership organisation for Scotland's District Salmon Fishery Boards, the River Tweed Commission, and Rivers and Fisheries Trusts who are dedicated to the conservation of salmon and freshwater fish and the protection and enhancement of fisheries.

Below we provide a detailed overview of key points relevant to progress made regarding wild and farmed fish interactions. We acknowledge other stakeholder views may differ from our own, the below is based on our experience, expertise and focus from a wild salmonid perspective.

Our key messages:

1. Salmon farming is one of several pressures that wild salmon and sea trout face. We are working to address all pressures that we can influence through the Wild Salmon Strategy and direct engagement with regulators and a range of other sectors. In the case of sea lice and escapes, we want to work with the salmon farming sector to deliver solutions that address our concerns, and we want that to be done within a fit-for-purpose regulatory framework.
2. We believe that regulation is disjointed in the way that it does not holistically assess and regulate the impacts of salmon farming resulting in policies and regulation that cause unintended consequences. It is important that any new regulation or policies are developed with a full understanding of the range of existing policies and regulations and the reality of our current environment, to ensure balanced, informed and better decisions are made. We are strongly of the view that it is possible to have thriving wild salmonid populations and a sustainable salmon farming sector, if meaningful changes are made.
3. Whilst we understand the need for all regulation to be proportionate, we need effective regulation (for sea lice and escapes) to be put in place at pace to ensure adequate protection for our endangered salmon and important populations of sea trout. We cannot wait any longer – 50 years is long enough.

Yours faithfully,

Dr Alan Wells, Chief Executive

Fisheries Management Scotland

Wild fisheries overview

Changes since the last inquiry

- In May 2020, the Salmon Interactions Working Group (SIWG) recommendations report was published.
- In September 2021, the Scottish Government published its response to SIWG and committed to advance a number of these recommendations, including a programme of work **to make fish farm containment measures and regulation more robust**, including the introduction of penalties for fish farm escapes with the aim of ring-fencing or redistributing this money to support wild salmonid conservation and research.
- In January 2022, the Wild Salmon Strategy was published, stating that **salmon are at crisis point**.
- In March 2022, the Blue Economy Vision for Scotland was published which states that 'by 2045 Scotland's shared stewardship of our marine environment supports ecosystem health, improved livelihoods, economic prosperity, social inclusion and wellbeing.' This means **marine, and inter-linked freshwater and coastal environments are restored**, adapted and resilient to climate change and sustainably managed to achieve good environmental status.
- In December 2022, the Scottish Biodiversity Strategy was published, with the purpose of tackling the nature emergency in Scotland.
- In February 2023, the Wild Salmon Strategy Implementation Plan was published, setting out a suite of actions to address the range of pressures that Scotland's wild salmon face.
- In December 2023, the IUCN status of Atlantic salmon in the UK was **reclassified to endangered**.

Value of Scottish salmonids

Salmon farming is an important contributor to Scotland's economy. However, wild fisheries are also important. The most recent report is still the work by the Public and Corporate Economic Consultants (PACEC) which was published in 2017. PACEC reported that there is approx. **£135 million** of angler expenditure, **4,300** full-time equivalent jobs, and **£79.9 million** of gross value added. This work is due to be updated this year as an output of the Wild Salmon Strategy. It is important to note that in addition to simple economic value, wild salmon and sea trout also have a huge **cultural value and importance** in Scotland.

North Atlantic Salmon Conservation Organisation (NASCO)

NASCO was established by the Convention for the Conservation of Salmon in the North Atlantic Ocean, in 1984. It enables seven Governments and the European Union to co-operate to conserve wild Atlantic salmon. Scotland has international obligations through NASCO which were jointly agreed with the International Salmon Farming Association (ISFA). The agreed international goals are:

- 100% of farms to have effective sea lice management such that there is

no increase in sea lice loads or lice-induced mortality of wild salmonids attributable to the farms

- 100% farmed fish to be retained in all production facilities

Overview of angling regulation

For decades, owners of salmon fishing rights have invested many millions of pounds in buying coastal netting rights with a view to reducing exploitation of salmon. At the same time exploitation in the rod fishery has been reduced through increased use of catch and release angling, primarily on a voluntary basis.

To protect spring stocks, which are particularly vulnerable, statutory conservation measures were introduced in 2015 to ensure that no salmon are taken before 1 April each year.

Since 2016, further conservation measures have been in place which prohibit the retention of salmon in coastal waters and require mandatory catch and release of salmon in areas that are deemed to be in poor conservation status, following an annual assessment. Currently mandatory catch and release covers 112 rivers, out of a total of 173.

In addition to voluntary adoption of conservation measures the angling sector is now at the point where 96% of all salmon caught by rod and line and 99% of the spring fish (caught before 1 May) are released back into the river. This is the highest level of catch and release of any signatory to the North Atlantic Salmon Conservation Organisation.

In addition to angling regulation our organisation and members are involved in a wide range of workstreams to address other pressures and restore habitat across Scotland. We are happy to provide an overview of this work at request of the Committee. Anglers and fishery managers are clearly doing their part, but Scotland must do much more to better manage and address the wide range of pressures that wild salmon face.

Sea lice

Salmon farming in the Scottish context

We do not believe that salmon farming is solely responsible for the decline of wild salmonids in Scotland. We recognise that sea lice and escapes are two of a number of pressures that contribute to the decline. Whilst it is true that there have been declines in salmon populations in areas of Scotland with no salmon farming, this does not indicate that salmon farming is not an issue in the areas where it operates. **It is abundantly clear that presence or absence of salmon farming is not the only difference between Scotland's coastlines.** East coast rivers face a totally different range and extent of pressures than West coast rivers and are entirely different in their geography and size. In certain West coast rivers, fish farming is the most significant human pressure.

Impact of sea lice

It is important to emphasise that **sea lice are primarily a concern for migrating wild salmonid smolts as they move from the river through sea**

lochs and out to the high seas. These juvenile wild fish are much smaller than adult farmed salmon and cannot tolerate the same sea lice pressure. Wild salmonids must pass through coastal areas where a significant number of farms are present. Due to the high number of fish contained within these farms, they can host large numbers of sea lice which then disperse off and around the fish farms, resulting in higher numbers of lice in the natural environment than would otherwise be there. The wild smolts must pass through these areas and where there are elevated sea lice concentrations this can lead to smolts being infested with large numbers of lice. In some cases, this lice burden exceeds the threshold tolerable to these juvenile wild fish resulting in early mortality. This is the basis for SEPA's sea lice regulatory framework **which has the purpose of managing the risk to wild salmonids from sea lice from fish farms.**

Sea lice data trends (wild fish)

In 2021 Scottish Government published a summary of science on the impacts of lice from fish farms on wild salmonids. It found:

- Salmon farms are a much more important contributor than wild fish to the total number of sea lice in the Scottish coastal zone.
- Concentrations of larval lice sampled in areas near farms relate to the local farm lice loads.

This year Scottish Government released another paper in which they used wild fish monitoring data to examine association between lice on farms and lice on wild fish. They found:

- A significant positive association between sea lice abundance on farms and sea lice abundance on wild trout. This is consistent with a causal relationship in which increases in the number of sea lice on farmed fish cause an increase of sea lice abundance on wild sea trout.
- Varying levels of sea lice infestation pressure on wild smolts from no risk to high-risk likelihood of lice induced mortality. This is what we would expect to find as different farms pose a different level of risk, based on a number of factors such as, number of farms in the area, local climatology, salmon migratory routes, dispersal of lice etc.

Sea lice data trends (farmed fish)

The average reported number of lice per fish on farms seems to have reduced significantly over recent years. From a wild fish perspective there is context missing from this which is that although the average number of lice may have gone down for some farms, the number of fish being farmed has increased. It is the total number of lice dispersing into the surrounding environment that we are concerned about - that is the average number of lice per fish multiplied by the number of fish on the farm. There is no public information available on fish numbers per farm and therefore the total number of lice in the environment cannot be assessed.

SEPA's sea lice regulatory framework

In October 2021, the Scottish Government response to the Salmon Interactions Working Group recommendations identified that SEPA would become the lead

body responsible for managing the interaction between sea lice from fish farms and wild salmon and sea trout. Between October 2021 and December 2023 SEPA carried out engagement and consultation work, resulting in the regulatory framework that is now being implemented.

Positives of the framework:

- Should steer new developments away from areas of high risk.
- Will introduce additional reporting requirements on the number of farmed fish and lice, increasing transparency and enabling a better understanding of total lice number.
- The framework recognises that it is the total number of infective stage lice in the environment that is important to wild fish, not just the average number of lice per farmed fish.
- SEPA has taken a very collaborative approach towards development of its monitoring programme.

Issues with the framework:

- Does not take a cumulative approach, e.g., the impact of fish travelling through multiple wild salmon protection zones.
- Does not apply wild salmon protection zones in all relevant areas, and some of the wild salmon protection zones do not make intuitive sense to us based on expert knowledge of local fish populations and behaviour. For example, there are no wild salmon protection zones adjacent to rivers which previously held wild salmonid populations.
- The relative risk assessed by SEPA is based on data that only extends back a few years. It is important to note that SEPA's assessment is based on everything working as it should and seems to assume that past performance over a limited period of time indicates future performance in an ever-changing environment. Whilst we recognise that SEPA can only use the data that is available to them we believe this provides a justification for a degree of **precaution** in the lice limits that are set.
- Monitoring required to determine whether sea lice limits are appropriate or not will likely take a minimum of 5 years to collect, meaning some farms that may be causing an impact will be allowed to continue doing so for at least 5 more years. This does not seem to be in alignment with the **Prevention Principle** (Preventative action should be taken to avoid environmental damage).
- At present the framework does not adequately deal specifically with sea trout, however we are aware SEPA plan to undertake work to address this.

The level of complexity in regulating fish farming in a highly dynamic and changeable environment is different from just about anything else that SEPA regulates. The framework is designed to fit within SEPA's current regulatory approach, but this may not be the best way to manage the highly complex and variable interactions between wild and farmed fish, particularly in the light of the

recent reclassification of UK Atlantic salmon by the IUCN to endangered.

Sea lice reporting

We were pleased to see that the sea lice reporting order has helped to increase transparency. We understand that SEPA will introduce lice reporting conditions, and we hope to see a streamlined and simplified process that increases transparency by requiring operators to collect data once, and for that data to be used for multiple purposes - both for farmed fish health and wild fish conservation.

It is widely acknowledged that there is a trust issue between stakeholders and the salmon farming sector and until that trust has been rebuilt, there needs to be a level of assurance. A degree of audit monitoring would help the salmon farming sector, SEPA and wider stakeholders to rebuild trust in the new regulatory system. We recognise that it is not realistic to have regulators perform all sea lice counts every week for every farm. However, some salmon farming companies understand this issue and are being proactive by inviting Fishery Trust Biologists to audit sea lice counts. This is helping to rebuild trust, but also helps to establish a common understanding and productive relationship between the two sectors, it may be a positive initiative for other operators to take forward.

Environmental Management Plans

Since the last inquiry Scottish Government officially created a policy introducing Environmental Management Plans (EMPs), although EMPs were being applied by some planning authorities before 2019. The plans primarily focus on monitoring work to assess potential interactions with wild fish and detail how this monitoring information will feed back to farm management practices.

This policy has increased the level of dialogue between the wild fisheries and salmon farming sectors which we believe both sectors feel has been a good outcome. Apart from this benefit, the data collected through these EMPs has rarely resulted in any meaningful actions by farmers to apply better management practices to address sea lice impacts on wild salmonids. The policy has been felt by many as a sticking plaster until regulation was introduced, resulting in a missed opportunity for some meaningful progress to be made. Despite Scottish Government requesting EMPs through their statutory role in planning, support wasn't put in place to ensure planning authorities had the resources to ensure that EMPs delivered the policy requirements. SEPA plan to phase EMPs out as they implement their sea lice regulatory framework.

Escapes

Impact of escapes

Escaped farmed fish can breed with wild salmonids resulting in offspring with genes from farmed strains of salmon (genetic introgression). Such interbreeding impacts the fitness of wild salmon resulting in significant negative pressure on the viability of wild populations.

Data and evidence summary

Scottish Government released the following publication in 2021: '*A national*

assessment of the influence of farmed salmon escapes on the genetic integrity of wild Scottish Atlantic salmon populations'

Main findings:

- Signs of introgression were concentrated in areas of marine aquaculture production and freshwater smolt rearing. Outside these areas, little to no genetic changes were detected.
- Genetic material from Norwegian farm salmon strains has altered the genetic composition of some populations within rivers near marine aquaculture production.
- The Shetland Isles, Hebrides and mainland west coast as far south as the Clyde were notably affected.
- This study provides evidence that escapes of juvenile farmed salmon from freshwater smolt rearing facilities can also affect the genetic status of local salmon populations. Three systems were identified as having notable genetic changes in areas with no marine aquaculture. Two of these (Shin and Ness) contain freshwater smolt production.

Examples of poor progress / use of conditions / regulation since the RECC report

Planning compliance

We believe when evidence-based conditions are implemented in line with the principles of better regulation that assurance is provided that impacts will be managed. Worryingly, what we have experienced are conditions for the protection of wild salmonids which are not followed through. For example, on Loch Shin in the Kyle of Sutherland where a farm has been in breach of a planning condition for more than 6 years. The planning condition in question is designed to assess and ultimately address risks to local wild fish populations resulting from escaped farmed salmon. It is extremely concerning that still no action has been taken, despite evidence of escapes of farmed fish occurring on an annual basis.

This is a prime example of why concern about salmon farming and lack of trust has developed. There are too many instances where conditions are either not targeted, not transparent, not proportionate or have no accountability built into them whatsoever.

Escapes reporting

The data that the salmon farming sector self-reports on escape incidences would tell you that the number of escape incidences and the number of escaped fish has reduced markedly over the years. We operate a reporting app for suspected fish farm escapees, and of the last 55 reports submitted, 52 were made by District Salmon Fishery Boards and Rivers / Fisheries Trusts. With freshwater escapes there can be no ambiguity towards correctly identifying an escaped fish as all farmed fish have a vaccination mark on their belly which a wild fish would not have. With that in mind, the self-reported data that the Fish Health Inspectorate (FHI) collects indicates that there have been no freshwater escapes since 2021 (based on final date of escape). This is not the case, as we have evidence from 19 reports where escaped juveniles have been identified between 2022 and as recently as 25th September 2024 in Loch Ness.

There is a severe need for more to be done to ensure all escapes are reported and followed up by the FHI. To provide one example, in August 2022 the Ness District Salmon Fishery Board reported approximately 28 escaped juveniles to FHI, this reflects an unknown proportion of the total number of escapees as these fish are only the ones that happened to be caught. The FHI did not conduct a farm visit until November 2022. FHI closed this case in May 2024, stating *'Recommendations in relation to the above case were made for implementation by 20 June 2023. Following discussion and sharing of the required documentation, evidence has now been provided to the Fish Health Inspectorate to demonstrate that the recommendations have been implemented'*. Despite the FHI's recommendations being implemented by the farm, escaped farmed fish were reported again in August 2023 and on the 25th September 2024. This is incredibly frustrating for fishery managers who can see year on year escaped farmed salmon and no meaningful action to stop or sanction them.

We acknowledge that in some instances, particularly on freshwater farms that farmers may not be aware that they have had an escape, going forward this can no longer be an acceptable excuse, neither can no meaningful action once they have been made aware.

Escape management

The way escapes are regulated, or not regulated as the case may be, is discussed as if escapes are inevitable and are an acceptable outcome for the environment. On the contrary, it is our position that it is reasonable to expect zero escapes, in line with Scotland's international commitments under NASCO. There is no clear position across Scottish Government regarding how they view the issue of escapes.

FHI have powers to ensure that farmers are taking the appropriate measures to prevent escapes **yet escapes still occur**.

Planning authorities often scope fish escapes into EIA's and farmers talk about how they will manage this risk as part of their planning consent approval, **yet fish escapes still occur**.

There is a Scottish Technical Standard for containment of farmed fish, **yet fish escapes still occur**.

It is clear that the above processes are not working as escapes are still recorded. **Is it Scotland's position that escapes are inevitable and acceptable?**

We know farmers do not want to lose their fish. It is difficult to understand what the processes applied in FHI and EIA do if we know already that these measures do not prevent escapes.

What we do know, thanks to the Scottish Government's 2021 report on introgression, is that in all areas where fish farming occurs genetic introgression has been identified. **Is it also Scotland's position that the evidenced impact of escapes on wild salmonids is also acceptable?**

It would seem at present that the Scottish Government do accept and allow the continued impact of escapes on our endangered wild salmonid populations.

SIWG recommendation

It was agreed in the Salmon Interactions Working Group that appropriate fines, proportionate to the incident and scale of escape, should apply to escapes of farmed fish and that enforcement sanctions should have a mechanism to allow monies to be invested into wild salmonid conservation work. **It is extremely disappointing that no work has occurred to progress this action.** We believe that it is vital that Scottish Government prioritises action to address escapes, placing a focus on environmental outcomes, rather than process. This should be a much higher priority than updating the Scottish Technical Standard for Containment (which is based on process, rather than environmental outcome).

Barriers to progress in the future

1. Holistic assessment

We believe that regulation is disjointed in the way that it does not holistically assess and regulate the impacts of salmon farming resulting in policies and regulation that cause unintended consequences. It is important that any new regulation or policies are developed with a full understanding of the range of existing policies and regulations and the reality of our current environment, to ensure balanced, informed and better decisions are made.

Example of poor holistic

assessment Salmon Interactions

Working Group (SIWG)

We believe that this process was an excellent example of collaboration between the wild fisheries and salmon farming sectors. The right people got around the table with a shared determination to come up with recommendations designed to improve the situation. We are strongly of the view that, once delivered, those recommendations would have moved the situation on greatly.

Much like the recommendations from the last inquiry the ambition within the recommendations from SIWG was that they would be delivered as a complete package. The Government has failed to realise the full potential of the recommendations that were drafted by delivering a select few of the actions.

These recommendations included calls for a holistic review of sea lice controls to ensure protection of the wider environment and wild and farmed fish health and welfare. This has not occurred, and we are seeing impacts as a result of this. On the contrary, SEPA consulted on the new Environmental Quality Standard (EQS) for emamectin benzoate an in-feed medicine given to farmed salmon as a preventative control for sea lice. The new EQS results generally in a reduction of a farmer's access to this treatment method. Whilst we in no way condone any environmental impact that may be caused by the use of medicines in fish farming, the isolated review of this one treatment in the absence of alternative sea lice

management measures (enforced or voluntary – the sea lice regulatory framework was not out for consultation at this stage) left the protection of wild salmonids in more jeopardy.

This for us is a clear example of where there appears to be a lack of holistic thinking when it comes to farmed salmon regulation and consenting, with unintended consequences for the protection of wild salmonids.

There was also a recommendation for the consenting regime to be amended to enable relocation of farms that have an adverse impact on wild salmonids. This piece of work should have occurred in parallel with the sea lice regulatory framework to deliver options for salmon farmers to relocate high risk farms. Instead, we now have to wait up to five years before SEPA will have enough evidence to demonstrate whether existing farms are continuing to cause an impact. Five more years where endangered wild salmonids may continue to be impacted by certain farms before any change will occur. If this work to incentivise relocation of problematic farms had occurred, the minute SEPA screened farms for their risk to wild salmonids we could have had a mechanism in place to relocate those farms to less problematic locations.

There has been no progress on the recommendations to address escapes made in SIWG, including the recommendation that there should be a single regulator with responsibility for interactions between wild and farmed fish. Whilst SEPA have been given responsibility for sea lice interactions, they do not have a remit for escapes.

2. Lack of trust

Lack of trust is a key barrier to progress, as the committee has already heard, this can be exacerbated by the lack of robust regulation on wild-farmed interactions. There are too many instances where conditions are either not targeted, not transparent, not proportionate or have no accountability built into them whatsoever. We have provided examples of this throughout our submission.

We believe in part that wild fish interests, and indeed the salmon farming sector, have been let down by a regulatory framework that does not help to build public confidence or trust.

Conditions only work if they are rigorously applied and adhered to. Without a regulatory system that meets the principles that the REC Committee set out, it is difficult for stakeholders to have any faith in the system. That alone is a significant barrier to rebuilding trust and allowing wild fisheries managers to move on more positively with the salmon farming sector.

3. Behaviours

Another important barrier to progress is behaviours at senior levels in the salmon farming sector. It is clear that the salmon farming sector has made progress on sea lice and escapes, but they have done so whilst, at least at a national level, maintaining a position that there is no evidence of impact, and in certain instances even denying that a risk exists. This means that the salmon farming sector probably has not received credit for the progress that they have made (e.g., investment and innovation in treatment technologies). We remain confused regarding the salmon farming sector's current position and understanding of the risk

and impact sea lice and escapes pose to wild salmonids. Salmon Scotland in their correspondence to committee appear to acknowledge that when sea lice are uncontrolled, they do affect wild salmonids *'Salmon farmers are able to remove sea lice from their salmon, safely and permanently removing them from the marine environment meaning they can no longer affect wild or farm-raised salmon'*.

This situation is quite different to our experience of dealing with a range of other industries with the potential to impact wild fish, including new industries such as the renewables sector.

The decades of unwillingness to sit down and **properly listen** to our concerns as key stakeholders and collaborate on solutions to address these issues has contributed to these ongoing challenges. **However, at a local level there are incredible people from both sectors who are willing to roll up their sleeves to try and make things better.**

Additional issues

Scottish Government's consideration of wild salmonids

We are currently participating in the Government's update to the working arrangements document for marine finfish farm developments - that conveys the roles and responsibilities of statutory consultees during the consenting process. Whilst we welcome the initiative by Government to update this document in light of recent regulatory changes such as the sea lice regulatory framework, it has presented several concerns regarding the Government's approach to consenting, these mainly being:

- The lack of strategic thought that has occurred in relation to how SEPA's new remit will affect the consenting process at planning.
- The lack of understanding of current Government policies addressing interactions such as Environmental Management Plans.
- The lack of consideration on how the proposed changes between planning and SEPA in relation to sea lice would affect the measures taken to consider the impact of escapes.

We as stakeholders concerned about an endangered species which is in continuing decline feel this issue is not being taken seriously enough by the Scottish Government or considered fully regarding the management of salmon farming pressures on wild salmon.

Consenting Task Group

Even though District Salmon Fishery Boards (DSFB) are statutory consultees, neither Fisheries Management Scotland nor any DSFB were involved in this process.

At the time of writing this document two trials have occurred, but neither were tested in an area where a District Salmon Fishery Board exists. This is despite this issue being flagged on several occasions, including at the Scottish Aquaculture Council. In one area a Fisheries Trust was contacted about an application, however it wasn't obvious to them that the application was part of a trial.

It is important that District Salmon Fishery Boards are given the opportunity to participate, learn from, and contribute to this process. We believe that the process should not be finalised until Board's have been meaningfully consulted about, and have contributed to, the proposed changes.

Salmon Scotland Sustainability Charter

We were pleased to be invited by Salmon Scotland to attend its blueprint workshop for creating the salmon farming sector's sustainability charter. We have had no engagement with Salmon Scotland since the launch of its charter on the actions relevant to wild fish, and as such do not have any information on how or if they have been progressed. If the actions relevant to wild salmonids are to be progressed in the future, we would welcome further discussion on these.

Salmon Scotland Wild Fisheries Fund

We welcome the principle that the salmon farming sector is contributing towards projects that may benefit wild salmonids. However, despite the original fund being developed in a collaborative manner, with a funding panel including representatives from both sectors and an independent body responsible for funding decisions, Salmon Scotland have now taken a different approach. We feel that this change is a missed opportunity to work in a more collaborative way with wider involvement from our sector. We would be delighted to work more collaboratively with the salmon farming sector to help ensure that funding is awarded to projects that will give the greatest benefit to wild salmonids.

Application of the precautionary principle

Although in 2023, the Scottish Government published statutory guidance on the Environmental guiding principles. This guidance and for example guidance produced by Scottish Government on SEPA's General Purpose still cause confusion and are interpreted in different ways by different stakeholders.

Scotland is facing a biodiversity crisis, and the decline of wild salmonids is one part of that. It is our view that the precautionary principle is not being applied in a manner that gives great enough weight to the needs of an endangered species and in those circumstances a different balance is required with a greater emphasis on protecting the environment. We want to be quite clear, that this is not unique to the regulation of fish farming. We are in a **nature-loss crisis**, and Scotland needs to respond accordingly.