Rural Affairs & Islands Committee Inquiry into salmon farming in Scotland.

Submission by Roddie Macpherson, 12 February 2026.

I encourage Committee members to seriously consider the merits of a moratorium on the authorisation of new and the expansion of existing salmon farms in Scotland. So much work remains to be done to try to improve current conditions that the application of the precautionary principle should lead to a recommendation in support of such a moratorium.

A moratorium by its nature is not a ban and, therefore, its impact on employment and local communities is unlikely to be significant.

How can it be justifiable to continue to authorise any expansion of this industry when we do not –

have an animal welfare system fit for purpose;

have comprehensive mortality data for farmed salmon and cleaner fish;

have an answer to whether or not open net salmon farming can cope with climate change impacts now, and in the future;

have tighter regulation over the use of 'no counts' of sea lice;

have a decisive position on the continued use of cleaner fish in salmon cages;

have any adequate sanction for escapes of fish from salmon cages;

have any means for identifying the source of escaped fish;

have any proven and operating strategy to minimise adverse impacts upon wild salmon and trout;

have any proper understanding of the implications of the use of more exposed sites;

have a peer reviewed study of the cost benefit analysis of this industry.

I elaborate on these matters below.

(paragraph references given in square bracket refer to the Committee's report on the Follow-up inquiry into salmon farming in Scotland, January 2025)

A. The regulatory system for ensuring farmer animal welfare is not fit for purpose

The responsible agency is the Animal & Plant Health Agency, a part of Defra in England with offices in Scotland. APHA rarely routinely inspect fish farms and by the time they respond to incidents, the evidence is long gone. Evidence of alleged animal cruelty and suffering is often provided by volunteers, rather than via official

channels. (see Guardian article https://www.theguardian.com/business/2026/feb/05/more-than-35m-unexpected-salmon-deaths-at-scottish-farms-sparks-outcry)

In 2022, the Scottish government accepted a recommendation to establish a Scottish Veterinary Service which would take over APHA's role in Scotland. This was not taken forward in 2024 due to funding constraints, but the merits remain intact. This should be pursued as soon as possible.

It is not good enough for the government to believe that a charity like RSPCA Assured can police the industry. Like all 'accreditation' bodies, they are conflicted by the fact that they receive fees for use of their logo, so fewer awards mean less money. In addition, when animal welfare is found to be compromised, the sanction is against the particular fish farm, not against the business as a whole.

Your Committee recommended that the Scottish Government *'bring forward additional regulations and official guidance under the Animal Health and Welfare (Scotland) Act 2006 Act in order to set specific baseline standards for the welfare of farmed fish.'* [para. 94]

Nothing published to date.

This is a mess and many of Scotland's 70 million caged salmon suffer as a consequence. It is easy to say that 'fish welfare is a top priority' as most players, including government, contend, but action to reflect this remains missing.

There is no effective sanction against continuing animal suffering. A national disgrace.

.**B. Farmed fish mortalities.**

Your Committee noted that the frequency of unpredictable, acute environmental events which cause mass mortalities may increase due to the impacts of climate change. *',,,the Committee is concerned that preventing high mortality events is not currently within the operational capability of industry as a whole and its fish farmers individually.'* [para. 56]

The government was recommended *to 'establish a research project focused on testing and improving the modelling of environmental conditions that are known to cause high mortality events on salmon farms.'* [para. 57]

There is no clear commitment about the timing of the completion of the necessary research about the operational capability of the industry in times of increasing water temperature and more frequent storms.

Can open net salmon farming cope with climate change impacts now and in the future? We simply do not know.

Salmon mortality rates remain unacceptably high. This is hitting some companies' bottom lines https://www.fishfarmingexpert.com/amoebic-gill-disease-fish-mortality-salmar/shetland-fish-deaths-plunged-scottish-sea-farms-into-the-red/2067489

and
https://www.fishfarmingexpert.com/applecross-hatchery-bakkafrost-pasteurella-skyensis/bakkafrost-highlights-positives-as-it-posts-more-losses-in-scotland/2066631

The industry globally continues to look for 'innovative' solutions to the health challenges of fish in its care, and to help the 'bottom line'. Often these innovations lead to dead ends – medication resistance, pollution issues, welfare issues (mechanical delousing, cleaner fish). It is almost certain that current 'new' solutions, costing huge capital investments – farming farther off-shore, submerged cages, semi-closed and land-based systems - will encounter different, or similar, problems.

C. Mortality data.

Together with the publication of 'comprehensive, consistent and transport mortality figures', the Committee recommended the publication of *'an annual fish health report detailing the health and welfare status of all farmed aquatic finfish, including wild caught wrasse, in Scotland. These reports should include both annual statistics on, and the causes of, finfish mortalities.'*

The Norwegian Veterinary Institute's annual reports are good examples. However, which official agency in Scotland could produce a document of that standard? Answer none – because they are seriously under-resourced.

The Committee supported *'the REC Committee recommendation for mandatory reporting of mortalities to the Fish Health Inspectorate.'* [paras. 76 & 77]

The Cabinet Secretary's response in March 2025, in dismissing these recommendations outright, is untenable. It is clear from data contained in numerous FHI case reports that businesses have for years collected mortality information about cleaner fish deaths on farms. Salmon Scotland confirmed this in reply to the Scottish Animal Welfare Commission last year (obtained by EIR), *'After input cleanerfish, similar to salmon, are monitored on a number of levels. Our fish are checked each day, with their behaviour assessed by visual inspection on cameras and from pen side. Fish feeding behaviour and feeding rate / appetite is assessed and compared to expected feeding rate. Additionally, any mortalities are recorded along with the cause.'*

It is incomprehensible that SAWC appeared not to grasp this in their recent report.

There is no official mortality data for cleaner fish. Yet they die in their millions. Using the disparate official data that is available (published FHI farm site case reports and unpublished Marine Directorate live fish transfer records), my underestimate is that

over 23 million lumpsuckers and wrasse were used on salmon farms in Scotland between 2020-24. All these fish will either die, or be killed at the end of the salmon production cycle.

No one can claim to be interested in the welfare of cleaner fish if they are uninterested in knowing how many are present on farms and how they die.

The data for cleaner fish is there, what is needed is publication

The data about farmed salmon mortalities is not comprehensive or in one place. Some sources measure mortality in tonnes of fish (SEPA), some as percentages only (Salmon Scotland), some as numbers of fish (FHI). The Fish Health Institute's weekly mortality data is not comprehensive as it only records mortalities over a certain percentage (for example 0.5% and 1% depending on the time of year), and does not cover the first 6 weeks of a farm being stocked (when mortalities are often significant). Culls of fish and deaths in transportation also are omitted.

Of the 96 months from 2018 covered by Salmon Scotland's monthly reports, 80 months had average monthly mortality rates of over 1%. The monthly average for 2025 was 1.7%. If that rate was to continue for a productions cycle of 18 months, the mortality would be 26.55%. It is worth mentioning that Salmon Scotland provides no detail on what these percentages are measuring. For example, are culls, and deaths during movement and transportation, included? No data is offered on cleaner fish mortality.

In Norway, the annual average mortality was reported to have been 14.2% in 2025. https://www.fishfarmingexpert.com/farmed-salmon-fish-health-mortality-rate/norway-farmed-salmon-mortality-rate-fell-below-15-last-year/2064848

D. Sea lice

Sea lice continue to be a serious threat to farmed salmon with one company receiving four enforcement notices last year due to excessive lice numbers. https://www.theferret.scot/salmon-company-lashes-out-at-own-industry-over-honesty-on-lice/

A fourth site operated by the same company was also subject of an enforcement notice last year.

Your Committee recommended that *'the Scottish Government introduce stricter conditions on the accepted reasons for no counts with regards to stock that is subject to treatments and being held for harvest and that it updates relevant guidance and enforcement approach accordingly.'* [para. 111]

No update has been published.

E. Cleaner fish

The Committee shared *'the concerns raised by stakeholders about the ethics and welfare implications of the use of cleaner fish as a tool for sea lice management and, especially, around the high mortality rate. The Committee notes the Fish Health Inspectorate shares this concern.'* [para. 138]

Regrettably, the Scottish Animal Welfare Commission in their November 2025 report on the use of cleaner fish, which took two years in the making, failed to come to any conclusion for immediate action on any issue. SAWC did propose a number of areas for further research, including *'into the welfare of cleaner fish, including, in particular better record keeping around the losses of animals in sea pens, and action to improve survival.'*

'Further, we would recommend that alternatives to the use of cleaner fish for sea louse control are explored, with the aim of phasing out the use of cleaner fish once sustainable alternatives are in place, and preferably within the next ten years.'

When will such research be undertaken? How long must cleaner fish wait?

This quote comes from Section 4.3.3 of the report -

'Through the course of the data gathering for this project (starting late 2023-mid-2025), some companies reported that they had stopped using lumpfish. This is because of problems with their robustness, separating them from the salmon and managing them during interventions. Lumpfish will stick to hard surfaces, do not voluntarily enter creels as ballan wrasses do, and their spherical conformation means that they are difficult to separate out from salmon using a standard dewatering/grading device.'

This is not news. FHI reports have examples of these issues for lumpfish over many years yet no authority (government or APHA) has intervened. According to the SAWC, lumpfish and wrasse can continue to be used for another 10 years, or until their use is ceased.

Annex A is such an example for lumpfish. The issues raised, which are basically ones of animal welfare, no doubt influenced Mowi's decision, albeit four years later, to stop using lumpfish in salmon cages. What then is the position of the other operators (apart from Cooke Aquaculture who do not use any cleaner fish)? What of the silence from government or APHA?

It should not be thought that wrasse are immune to similar welfare concerns (see Annex B). In addition, three companies in Norway have announced the cessation of the use of lumpfish and wrasse. Together with about 20% of salmon farm sites in Scotland (those of Cooke Aquaculture) using no cleaner fish, it is evident that cleaner fish are not essential to the management of salmon in sea cages. Despite this, SAWC believed that their use can continue, apparently for the doubtful benefit to another species, farmed salmon.

F. Penalties for escapes

The Committee noted *'there has been little progress in developing and introducing "appropriate sanctions" for escapes from salmon farms and, therefore, recommendation 37 has not been implemented.'*[para. 198]

Sanctions have not been agreed, or published.

'The Committee also notes the review of the 2015 technical standard for Scottish finfish aquaculture, set out in the Scottish Government's response to the REC Committee report and committed to again in the 2023-24 programme for government, has yet to be progressed.' [para. 198]

The outcome of a review is awaited.

Regarding means for identifying the source of escaped fish, the Committee Recommended that *the Scottish Government investigate and report on the current use of, and potential feasibility of the mandatory use of, biomarkers. This work should also aim to develop a protocol for the forensic investigation of escaped farmed fish to trace escapes back to individual farms.*[para. 200]

The use of biomarkers has yet to be agreed.

G. Research into wild salmon interactions

The Committee recommended that *'the Scottish Government provide an update, as a matter of urgency, on its progress against the commitment to building an evidence base through coordinated scientific research and monitoring which is included in the wild salmon strategy implementation plan. This should include an update on the defined research objectives, monitoring framework and reporting requirements.'* [para. 211]

Cab Sec March 25 'Our ambition is to have a coordinated approach to salmon research across Scotland.'

The necessary research is awaited.

The Committee is aware of the NASCO-commissioned review of the effect of salmon aquaculture on wild Atlantic salmon populations. The Committee recommended *'that the Scottish Government consider the findings of this* [NASCO] *review in so far as they relate to the risk posed to wild salmon from sea lice dispersal from farmed sites in Scotland when the review report is published. The Committee also recommends the Scottish Government update the Committee on what, if any, changes it then intends to make to finfish aquaculture policy as a result of the NASCO review findings.'* [para. 212]

Consideration of the implications of the NASCO review on SEPA's Sea Lice Risk Assessment Framework is awaited.

In the meantime, fish farming businesses have appealed sea lice reporting and sea lice limit conditions issued to existing fish farms by SEPA as part the sea lice risk assessment frameworks implementation. Over 200 appeals require to be determined. There must be some doubt about the final content of this framework.

H. Relocation of existing sites

The Committee recommended that *'the Scottish Government commission research to assess the potential risks and benefits of moving fish farms further from the coast and to more exposed or higher energy flow sites. The Committee notes its earlier recommendation calling for the development of dedicated research pens could support this aim.*' [para. 260]

It remains unclear how this is to be progressed.

I. Cost benefit

Unfortunately, this is not a topic that has been taken up by any formal inquiry. It is clear that there are significant doubts (eg. Professor Danson's submission, the Pareto study[1]) about the economic analysis presented by the industry, and adopted uncritically by government.

This is the reply to the question why government had not conducted a cost benefit analysis into the industry.

"The Scottish Government has not undertaken cost benefit analysis under the terms in which you enquire. This is because fish farming in Scotland is already a highly regulated industry and is subject to a number of fish health, environmental and local authority planning controls that helps control any potentially negative impacts." (Letter from Marine Directorate 9 April 2024).

Many would suggest that reveals a worryingly complacent attitude within government. It is time that changes.

1. Assessing the economic impact of salmon farming in Skye and Lochalsh – an Exploratory Scoping Study, November 2025 by Andrew Moxey, Pareto Consulting and Angela Tregear, Edinburgh University Business School.

Evidently, a moratorium is essential to allow time to resolve these many important long-standing issues, which affect the way salmon farming continues to be conducted and regulated in Scotland.

ANNEX A-Lumpfish

Fish Health Inspectorate report. (Caolas a Deas, September 2021, FHI Case 2021-0309)

"Increased Mortality in Cleanerfish: LUM 2021: wk8, 6447 (freshwater); wk22, 8321; wk23, 7228; wk29, 5690; wk30, 11621 (extended freshwater) ;wk31, 10030 (extended freshwater) Causes of mortality: sealice treatment (freshwater), tenacibaculum ……It has been accepted by industry that freshwater treatments will lead to elevated lumpfish mortalities. No alternative solution was given. Site manager said that it is difficult to dewater lumpfish as a result of size and shape. Staff try to remove fish as much as possible with hand nets. Increased handling may also contribute to mortalities."

ANNEX B-Wrasse

Scotasay FHI report Oct 2023 (2023-0449) '*For 24 hours prior to each FW treatment the site deployed 3 - 4 baited creels into each stocked pen in attempt to remove cleanerfish prior to treatment. The site also tried to separate the salmon stock from the cleaner fish stock using the well boats however this proved difficult due to the wrasse being of similar size to the salmon stocks.'*

Eilean Grianain FHI report Nov 2024 (2024-0440) 8470 wrasse mortalities during 3 weeks 2024, handling related, and 18597 lumpfish attributed to *'wounds & fin damage and handling, Wounds or fin damage.' 'Attempts to remove cleaner fish before treatments are made by creeling and catching with hand nets.*

Bagh Dail nan Cean FHI report Jan 2025 (2025-0023) 2470 wrasse mortalities in week 44 2024 caused by handling. (The same week that 4727 salmon died due to FW treatments)