

SUPPLEMENTARY BRIEFING: SALMON FARMING INQUIRY RAI SESSION – 13 NOVEMBER 2024

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Issue: Lords' amendment to the Crown Estate Bill on Salmon farming

BACKGROUND:

- On 25 July, UKG tabled the Crown Estate Bill which seeks to modernise The Crown Estate (TCE) to ensure it can operate effectively in a modern business environment and support wider policy objectives across energy security, growth and the environment. The CE Bill amends various aspects of the constitution and governance arrangements for TCE.
- The provisions of the Bill do not apply in relation to CES or the Scottish Ministers.
- Committee and Report stages in the House of Lords have concluded with the 3rd reading in Lords to follow on 18 November before moving to Commons. An amendment was introduced by Lord Forsythe at Report stage to place a duty on CE commissioners to consider the 'environmental impact, and animal welfare standards of salmon farms on the Crown Estate' and to revoke licences if the assessment is that a farm is causing environmental damage or harming animal welfare. This was not supported by UKG. Lord Forsyth noted in the debate that "the Bill does not cover the commissioners' activities north of the border because of devolution, but I am sure that if England sets the standard then others will follow".

TOP LINES:

- The Crown Estate is devolved in Scotland as Crown Estate Scotland, so this legislation will not have a direct bearing on the Scottish estate.
- In Scotland, salmon farming is strictly regulated with fish health and environmental controls which ensure the environment upon which the aquaculture sector and others rely is protected for future generations.
- Crown Estate Scotland ensures the responsible use of Scotland's seas through leasing the seabed. Local authorities and the Scottish Environment Protection Agency conduct thorough assessments of development proposals, including Environmental Impact Assessment and Habitats Regulation appraisals, with advice from consultees.
- Our Vision for Sustainable Aquaculture sets out our ambitions for the sustainable development of the aquaculture sector, operating within environmental limits, and which recognises the considerable social and economic benefits the sector delivers

Q&A

Q. Does Lord Forsythe's amendment to the Crown Estate Bill – to place a duty on CE commissioners to consider the 'environmental impact, and animal welfare standards of salmon farms on the Crown Estate' and to revoke licences if the assessment is that a farm is causing environmental damage or harming animal welfare – apply in Scotland?

- No. The Bill does not cover CE activities in Scotland. The Crown Estate is devolved in Scotland as Crown Estate Scotland, so this legislation will not have a direct bearing on the Scottish estate.

ESCAPES

Recent fish farm escapes (including publication of Scottish Government Fish Farm Production Survey 2023)

BACKGROUND:

- On 30 Oct 2024 Scottish Government published the Fish Farm Production Survey 2023. The survey shows 80,001 farmed fish (not including numbers from Aquadat database, included in the final count above) escaped in Scotland in 2023.
- On 2 October 2024 the fish farming sector gave evidence to the Rural Affairs and Islands Committee as part of their follow-up inquiry into the implementation of the Rural Economy and Connectivity Committee's session 5 report recommendations for salmon farming in Scotland, highlighting that only 1 farmed fish escaped in 2023.
- [Redacted – Regulation 10(5)(f)]
- The reason for the discrepancy relates to the setup of Scotland's Aquaculture Website (SAW). Salmon Scotland's information is based on information published on the website.

- The number of farmed fish escapes in recent years:

Year	Number of fish escaped
2013	40,754
2014	184,618
2015	18,096
2016	11,766
2017	31,161
2018	53,301
2019	70,307
2020	206,522
2021	19,738
2022	56,381
2023	80,007

TOP LINES:

- The Scottish Government is working to support fish farms towards the goal of 100% containment.
- In our response to the Salmon Interactions Working Group report (2021), we committed to strengthening the escapes regulatory regime and to work towards introducing fines for fish farm escapes, with the ultimate goal of ring-fencing fees for wild salmonid conservation and research.
- The evidence suggests a general downward trend in numbers of fish escaping, and whilst we can't infer the exact reasons for this pattern, we expect that escape incidents will have reduced overall as the sector's understanding and

implementation of best practice has evolved. This has likely been further aided through the introduction of the Record Keeping Order and the Aquaculture and Fisheries (Scotland) Act 2007 and the associated requirement for “satisfactory measures” for containment and the FHI risk-based inspection regime.

- We remain committed to working with the sector to reduce the risk that fish escape from fish farms with a new Technical Standard for Scottish Finfish Aquaculture.
- In 2021 Scottish Government published a Code of Practice for containment to manage the interactions with marine mammals.

Q&A

Q: Why were details of the escape of 80,000 fish not published on Scotland’s Aquaculture Website?

- A breach of containment for aquaculture animals is disappointing.
- This escape incident relates to a loss of fish from a wellboat during transport.
- Farmed fish escapes are normally registered to fish farms in our Aquadat database system, and information is subsequently published on Scotland’s Aquaculture Website.
- This gap has occurred due to the source of escape and we will consider the issue of reporting and transparency further.

Q: What legal obligations exist for transporters to notify of farmed fish escapes?

- It is not currently a legal requirement for farmed fish transporters to report farmed fish escapes. However in this instance, the operator has followed best practice and made a notification.
- The existing regulatory framework requires the circumstances which give rise to a significant risk of escape or escape of fish on, or in the vicinity of a fish farm to be reported (Aquatic Animal Health Regulations (Scotland) 2009 as amended).
- Reported escapes from wellboats are a rare occurrence, however wellboats are commonly used in Scotland to transport fish. This incident, involving 100g fish, is not expected to have impacted the environment.
- We will consider this incident and our reporting requirements further.

[Redacted – Regulation 10(4)(e)]

TOP LINES

- I have made it clear that I expect mortality to be driven down.
- The lower levels of fish surviving to harvest are not acceptable either to Government or salmon producers, and we are working closely with the sector to ensure challenges to survival can be mitigated via research, innovation, and improved farming practices.
- I understand the challenges and we need to consider how regulators and government can best support the sector in doing so.

Q&A

Q: Is mortality too high in Scotland?

- The survival to harvest of the 2021 year class, as published in the 2023 Fish Farm Production Survey is too low, but in statistical terms cannot be considered a trend. Over the period 2003 to 2023 fish survival to harvest has remained relatively constant at 75%. Other data sources suggest this year's high figure might come down in later years. That does not mean action should not be taken, and producers have already acted to invest in mitigations for key challenges they have identified.
- Sector intelligence via the Fish Health Inspectorate indicates that these figures are impacted by micro jellyfish and algal blooms moving up the west coast of Scotland which were not within anyone's control.
- However, you have heard how the sector has focused its efforts on deployment of novel techniques to develop mitigation for the future. For example, we have contributed to this by funding a preliminary project on Harmful Algal Blooms - this has been built upon by successive projects funded by the Sustainable Aquaculture Innovation Centre which have introduced training, standardised reporting and progress towards prediction and response.
- I expect we may see a decrease in levels of mortality associated with these issues in future years as changes in husbandry and investment in innovation begins to show results; I know in their evidence to you the sector indicated they are forecasting such declines in mortality for their own business planning.

FISH FARM MORTALITY AT DUNSTAFFNAGE: SCOTTISH SEAFARMS

BACKGROUND

- It was widely reported (26 Sep) by media outlets that ‘tons of dead salmon’ were removed from a Scottish Sea Farms salmon farm in advance of a visit by Rural Affairs and Islands Committee MSPs, who were visiting the Dunstaffnage site as part of their follow-up enquiry on 23 September 2024.
- The criticism was launched by Animal Equality, which had been recording the farm in the days preceding the visit.
- On 27 September 2024 the Fish Health Inspectorate (FHI) wrote to the RAI Committee to respond to questions raised by the Committee following their visit to Dunstaffnage fish farm on 23 September.
- The FHI provided recent mortality levels for the site, and noted that they did not have concerns with the routine mortality removal procedure being undertaken in the video footage, and added that they would consider that this procedure would be consistent with the mortality removal procedures on Scottish aquaculture farm sites, recognising that procedures may differ between sites.
- [Redacted – Regulation 10(4)(e)]
- 1,082kg of biomass was reportedly removed from Pen 1, which was filmed.
- Mortality at the site on the day of the site visits (0.1% of total stock held), and the three weeks preceding the visit were at levels not requiring reporting to FHI.
- The issue was discussed extensively when the sector gave evidence on October 3, clarifying it was a routine procedure and that losses were due to an earlier handling event due to freshwater treatment.

TOP LINES

I noted the coverage of the Rural Affairs and Islands Committee’s visit to a fish farm near Dunstaffnage

- This committee rightly took the time to visit a fish farm and spend time with the sector as part of this follow-up inquiry into salmon farming in Scotland, gaining firsthand understanding of Scottish fish farming in practice.
- Whilst I completely understand public concern regarding fish health and mortality on Scottish fish farms, the sort of misinformation spread in these stories is unhelpful, and showed a lack of understanding of fish farm operations.

We have robust legislation, policies, and operational practices in place to ensure fish farmers are meeting statutory requirements on sea lice reporting and management, mortality reporting and listed disease surveillance.

- Scottish Sea Farms who operate the site is routinely compliant with voluntary mortality reporting regimes in place as part of listed disease surveillance.
- The Fish Health Inspectorate wrote to you on 27 September to confirm that they were not investigating any mortality issues at the farm and the mortality levels did not require formal reporting and no disease outbreaks were being investigated
- It is important to reiterate the point made that regular removal of fallen stock is a legal requirement, and dead fish are removed from collection systems following inspection – this is a vital part of good biosecurity practice to prevent an unacceptable risk of disease spread.

- The sector also clarified when they provided evidence to the committee last month that the daily removal of mortality is a legal requirement and part of good husbandry during the evidence session last month

Q: Do you think that this volume of fish being removed on a daily basis is acceptable?

- Mortality occurs in all livestock farming, it is unfortunate and losses of any size are in no one's interest.
- The mortality on the day in question was 0.1% and far from the reportable threshold for mortality of a maximum of 1% per week, or a rolling average of a maximum of 4% over a five-week period.
- We understand concern concerns around morality, and we expect producers to reduce mortality to the lowest possible levels.

WHITESHORE COCKLES LTD: BURIAL OF DEAD FISH AFTER DEROGATION BACKGROUND

- STV reported (2 Oct 2024) on footage filmed by activists showing Whiteshore Cockles Ltd (North Uist) dumping fish waste without authorisation.
- Scottish Government banned the burial of fish waste in 2016 following a European Commission conclusion that the aquaculture industry could not take advantage of a remote area derogation in the Animal By-Products (Enforcement) (Scotland) Regulations 2013 that allows fallen stock to be buried on site.
- An exception was granted to Whiteshore Cockles Ltd as they were in the process of building a legally compliant and sustainable disposal route for salmon mortalities. Whiteshore Cockles Ltd expected their fish waste dryer to be operational in the summer of 2016 - but this was delayed.
- the derogation authorised by Scottish Ministers to dispose of this waste via burial ended in January 2024, when a fish waste dryer was made operational. The waste drier project received grants from Highlands and Island's Enterprise.
- Enforcement of the Animal By-Products (Enforcement) (Scotland) Regulations 2013 is carried out by local authorities. The Animal and Plant Health Agency are responsible for the approval and inspection process for premises that receive, use, handle or dispose of animal by-products.
- The burial of fish waste was allowed under the supervision of Comhairle Nan Eilean Siar (CnES). A Method Statement was agreed between CnES and Whiteshore Cockles Ltd which sets the conditions for safe working conditions, methods and practices used for the collection and disposal of fish mortalities.
- Whiteshore Cockles Ltd also have a Pollution Prevention and Control (PPC) Part A Permit under the Pollution Prevention and Control (Scotland) Regulations 2012, for highest risk industrial activities. The site is subject to SEPA inspections.

Top lines

I am aware of the reports of fish waste being illegally disposed of in the Western Isles

- The question of enforcement is for Western Isles Council and not Scottish Government – under Enforcement of the Animal By-Products (Enforcements) (Scotland) Regulations 2013.
- It would not be appropriate to comment further while this is being investigated.

Whiteshore Cockles Ltd were previously authorised a derogation from the disposal requirements in the Animal By-Products Regulations, to bury fish waste at their site in North Uist, which ended on 31 January 2024

- The company have installed a fish waste dryer as a pragmatic and sustainable solution for disposal of salmon mortalities in the Western Isles.
- The fish waste dryer has the appropriate Pollution Prevention and Control authorisations from the Scottish Environment Protection Agency, and it is working towards approval under animal by-product regulations; when this is achieved the dryer will be fully operational.

- We expect Whiteshore Cockles Ltd to work constructively with the Animal and Plant Health Agency for the fish waste dryer to gain approval under the Animal By-Products (Enforcement) (Scotland) Regulations 2013.

The Scottish Government is committed to moving towards a circular economy, delivering an approach where we value materials and keep them in use.

- We welcome approaches which adopt the principles of a circular economy and sustainable use of resources.
- Whiteshore Cockles Ltd previously received funding from Highlands and Islands Enterprise in 2016 and 2021 as a project demonstrating the potential to create such a circular economy approach for Scottish Aquaculture.

Q&A

Q: With illegal dumping of dead fish reported in North Uist by Whiteshore Cockles, surely the review of mortality disposal should be done to fulfil recommendation 14 (2018 enquiry)?

- The Scottish Government believe that the regulatory framework currently in place is sufficient to ensure that the transportation and disposal of dead fish is safe if carried out in compliance with the legal requirements.
- Enforcement of the Animal By-Products (Enforcements) (Scotland) Regulations 2013 is the responsibility of local authorities, not Scottish Government.
- Western Isles Council / Comhairle nan Eilean Siar are aware and investigating the matter, and working with the Scottish Environment Protection Agency to understand respective regulatory roles and action to be taken
- All businesses handling animal by-products, including the transportation and disposal of fish waste, are subject to risk based inspections from the Animal and Plant Health Agency.

Economy questions

Bakkafrost Western Isles – on 11 July Bakkafrost announced temporary closure of harvesting and processing facilities at Arnish and Marybank in Stornoway, risking 77 jobs.

- Bakkafrost is the third largest producer of farmed salmon in Scotland. The company employs c.540 FTEs in Scotland over 60 sites – significant employer on the West Coast and in the Hebrides across 26 sites. In 2023, following a restructure, 60 staff left the business (49 of these were redundancies).
- [Redacted – Regulation 10(4)(e)]
- **12 July:** The Minister for Employment and Investment met Bakkafrost Scotland. [Redacted – Regulation 10(4)(e)]
- [Redacted – Regulation 10(4)(e)]
- **30 August:** The Cabinet Secretary for Rural Affairs, Land Reform and Islands met with Bakkafrost’s Faroese Chief Executive and Chair. Discussions were positive and the Cabinet Secretary committed to ongoing engagement with the Bakkafrost board to facilitate progress on their concerns and address blockers to investment.
- Following the visit to the Faroes, SG officials have further engaged with senior Bakkafrost staff to understand more about the nature of their concerns around the consenting system and the operation of the SEPA sea lice risk assessment framework, with a view to supporting further discussions around. SDI and HIE officials continue to engage with Bakkafrost around their investments in Scotland.
- To support the affected staff, Bakkafrost and the local authority used the PACE (Partnership Action for Continuing Employment process), which led to around 15% of the affected staff being retained within the wider Bakkafrost business and around a further large proportion of the staff already offered alternative employment by mid-September.

TOP LINES

- I recognise the significant and wide-ranging impacts of the decision by Bakkafrost to temporarily close its Arnish Harvest Station and Marybank Processing Facility in Stornoway. This will obviously be a very worrying time for the staff and their families.
- The Minister for Employment and Investment met with representatives of Bakkafrost Scotland on 12 July and highlighted the impacts on jobs, local communities and supply chains and stressed the importance of the aquaculture sector to the islands.
- I met with Bakkafrost’s Chief Executive and Chair in the Faro Islands in August and provided reassurance that the Scottish Government values and supports Bakkafrost’s significant investment in sustainable aquaculture in Scotland.
- The visit was characterised by positive conversations, and Bakkafrost indicated they remain ambitious for a long-term future in Scotland, and would welcome further engagement with Government, enterprise agencies, local authorities and other partners to achieve their aims.
- The Scottish Government’s Partnership Action for Continuing Employment (PACE) organised a group meeting, CV/Employability workshops and a Jobs Fair for affected staff in the Western Isles in August, which were all positively received.

- I understand a significant number of those staff have already successfully secured alternative employment.
- Officials in SG and the enterprise agencies continue to engage with Bakkafrøst to support their ongoing ambitions and address challenges as they arise, to support them to make their Scottish business as effective as their Faroese operation.

Job Security

Q: How can you say that this industry is supporting high quality jobs across Scotland, when they turn out to be so vulnerable to changes of heart from large multinational businesses?

- While the loss of any job – and the impact on families and communities – is a huge challenge, I know from my conversations with Bakkafrøst in Scotland and in the Faroes that the company remains committed to their Scottish operation and did not take the decision to mothball their processing facility lightly.
- Bakkafrøst have worked hard with local partners to support affected workers, and we understand a majority have been able to find alternative employment. With their Faroese background, Bakkafrøst are particularly well attuned to their impact in small island communities and are keen to retain their presence in the Western Isles.
- I and my officials continue to engage with Bakkafrøst, to support their ambitions for their Scottish operation within the limits of our high standards for sustainability.
- The Scottish fish farm production survey 2023, published on 30 October, indicates that 1480 staff were employed in marine salmon production, and the sector estimates the industry supports around 12,000 jobs across the whole supply chain.

Industry profitability

Q: Major producers' profits are much reduced. How is this a successful industry?

- Profitability naturally varies year to year. You heard the sector acknowledge that 2023 was a challenging year for many reasons, many of which were not predictable and not within the control of producers.
- You also heard that the sector is modelling lower levels of mortality in the coming years, which will support improved profitability. I would note that the Fish Farm Production survey also predicts and increase in production for the next year, forecasting an uptick of over 20%. This isn't definitive, but is based on how many fish are currently in the water.

Price fixing

Q: what do you think of legal action alleging the major salmon producers have been systematically fixing the price of salmon to the detriment of consumers.

- It would not be appropriate for me to comment on ongoing court actions.

FISH MORTALITY: 1 Million mortalities at MOWI's Seaforth site

Background

- The Guardian & the Sun report on an analysis of published Fish Health Inspectorate mortality data by anti-salmon farming groups, showing over a production cycle at a MOWI Scotland site (Seaforth), over 1 million fish died.
- The approximate number of fish highlighted is consistent with FHI mortality reports for the production cycle in question.
- The FHI visited the site in November 2023, March 2024 and June 2024, due to increases in mortality, diagnostic samples were collected with results showing gill health issues each time, along with a mix of bacterial infections.
- The underlying cause was environmental- at the time the sector suffered widespread jelly fish issues which exacerbated gill health issues and leading to infection risk.
- Written evidence submitted to the committee also highlights this mortality as an example of poor welfare- the site is accredited by RSPCA assured but was not penalised as the conditions that led mortality were beyond the control of farmers.

Lines to take

Mortality occurs in all livestock farming including salmon farming, and levels as high as this are in no one's interest

- We have robust regulation and policies and operational practices in place to ensure fish farmers are meeting statutory requirements related to the environment, sustainability and welfare
- However, we are clear in our expectations of producers to drive mortality to the lowest possible levels.

Q: This is an example of poor welfare and farm practice

- We acknowledge an apparent rise in recent mortality figures driven by challenging environmental conditions beyond farmers' control, as is the case here.
- Mortality is not necessarily indicative of poor welfare – it is possible for good welfare standards to be applied throughout production but for an unforeseen disease outbreak or environmental challenge to cause mortality of well cared-for animals.

RESPONSE TO FURTHER EVIDENCE SUBMITTED TO COMMITTEE FROM STAKEHOLDERS

ISSUE:

4 new submissions have been made to the Committee since the main briefing pack was submitted. These were from Animal Equality, WildFish, Coastal Communities Network Scotland and Roddie Macpherson. The majority of the issues raised are already picked up in the pack, however some specific additional Q&A is provided below to improve our responses to issues raised.

An additional summary of these letters is provided below; Q&A follows.

Title of letter	Letter sent from	Letter sent to	Date of letter	Summary of content of letter
Letter from Roddie Macpherson	Individual	Rural Affairs and Island Committee	8 November 2024	Concerns raised on: The use of cleaner fish. How farmed fish welfare is assured. Transparency of data on farmed fish mortality. “Regulation is not a priority for the government.” “Animal welfare system not fit for purpose.” “On what scientific evidence is the Atlantic salmon a suitable fish for intensive food production?”
Letter from Coastal Communities Network		Rural Affairs and Islands Committee	11 November 2024	The group’s view is “there has been little change from the status quo.” <u>Environmental impacts</u> Lack of pace on SEPA finfish regulatory framework and sea lice risk assessment framework. Call to instruct SEPA to set a timeline for reducing, then ending the discharge of toxic chemical pollution from fish farms. Spatial planning has been “abandoned”.

				<p>No progress on fines for fish farm escapes.</p> <p>Better fish farm data reporting.</p> <p>Fisheries management measures “are inadequate”, and the use of wrasse as cleaner fish “should be halted.”</p> <p><u>Animal welfare</u></p> <p>“Government has failed to bring [salmon] mortality down.”</p> <p>Calls for transparency in mortality reporting.</p> <p>Requests a formal review to understand “why the Animal and Plant Health Agency inspects so few farms.”</p> <p>Pause expansion until action has been taken to improve welfare and greatly reduce mortality.</p> <p><u>Economic and social benefit</u></p> <p>Assess the costs of salmon farming to other users of the sea.</p> <p>“The industry is losing its social licence”.</p> <p>Publicly funded grants made to finfish aquaculture companies.</p>
Open Letter	Rachel Mulrenan WildFish Scotland Around 50 orgs and individuals, including eNGOs, vets/ scientists, fishers, chefs/ restaurants,	Copy correspondence to Cabinet Secretary for Rural Affairs, Land Reform and Islands; also sent to the RAI Committee;	12 November 2024	<p>Ask to re-evaluate policy on the open-net salmon farming; and</p> <p>Commission an independent Cost-Benefit Analysis of Scotland’s salmon farming industry.</p>

	community orgs	and The Herald		
Animal Equity	Abigail Penny Animal Equity UK	Cabinet Secretary for Rural Affairs, Land Reform and Islands	12 November 2024	Requesting a meeting and outlining concerns in relation to: <ul style="list-style-type: none"> • Falling production and increased mortality • Profitability and jobs • Animal welfare and disease • Impacts on wild fish • Reputational risks

Data Transparency

Q: There should be a comprehensive and accessible data portal for aquaculture data and the sector should fund it via a levy

- The Scottish Government Marine Directorate has already has a range of reporting contributions to Scotland’s Aquaculture Website including fish escapes, sea lice information, and finfish species farms and shellfish aquaculture sites authorised as aquaculture production businesses.
- Further enhancements to the website, and the preparation of wider data sets, would come at a significant cost to the public purse, and may not be considered a priority at this time.
- I will consider further enhancements to Scotland's Aquaculture Website as part of the delivery of the regulatory review of aquaculture and in discussion with the Scottish Aquaculture Council.

Q: Marine Directorate should produce annual fish health report, like Norway

- A range of fish health data is now publicly available include information on farmed fish survival, sea lice infestation and treatments used.
- Through the Farmed Fish Health Framework we identified and standardised the main causes of mortality into ten overarching categories- Salmon Scotland is now publishing monthly mortality data, by percentage and cause, this level of transparency is leading amongst farming sectors.
- The Farmed Fish Health Framework regularly considers the key fish health challenges being reported by the sector and are already published
- Better coordination of information may be more helpful, drawing on published information, rather than a production of new publication.
- For example, sector fish survival and mortality is collected and published by a number of different organisations and we recognise this can sometimes cause confusion – we intend to publish an explainer topic sheet to help harmonise this information in the near future.

Welfare

Q: SG should introduce official guidance and seek a legal definition of unnecessary suffering of farmed fish, similar to other farmed animals to enhance welfare?

- I believe the totality of the provisions, which include robust legislation, policies, and operational practices, are sufficient to safeguard the health and welfare of farmed fish.
- The Animal Health and Welfare (Scotland) Act 2006 already places a duty of care on fish farmers to meet the needs of animals for which they are responsible in line with Section 24 of the 2006 Act, as well as making it an offence to cause or permit unnecessary suffering to any vertebrate animal kept by man, including farmed fish.
- We expect all producers to comply with animal welfare legislation and industry standards. The Animal and Plant Health Agency are responsible for investigating potential breaches in welfare law, including farmed fish.
- There are no immediate plans to introduce specific additional guidance for the fish farming industry generally through the provisions made in the 2006 Act or make regulatory changes in relation to fish welfare.
- We are however exploring potential Scottish Government Guidance on welfare at slaughter for farmed fish.

[Redacted – Regulation 10(4)(e)]

Q: There should be an independent inquiry which looks into the welfare of farmed salmon, including how the APHA assesses the welfare of farmed fish and its interpretation of the 2006 Animal Health and Welfare Act

- [Redacted – Regulation 10(4)(e)]
- We have robust government policy in place for the management of sea lice for fish health and welfare purposes.
- We have already strengthened this, lowering the sea lice levels at which FHI take escalating action, and we have introduced mandatory reporting of sea lice levels.
- Our Vision for Sustainable Aquaculture makes clear that we expect improvement to mortality and it also includes outcomes on cleaner fish practices, including a Code of Practice
- Our Fish Health Inspectorate works alongside APHA on issues of fish welfare and I am content to consider I am content to consider how we can strengthen the role of APHA in protecting fish welfare Scotland.

Q. What does your Vision for Sustainable Aquaculture say about cleaner fish?

- Our Vision for Sustainable Aquaculture calls for continued research into the use of cleaner fish in aquaculture and the development of a Code of Good Practice (CoGP) to support improved cleaner fish health, welfare and performance.
- The Scottish Animal Welfare Commission is currently looking at welfare aspects of cleaner fish in salmon production and we expect them to publish their findings later this year.
- We will consider their recommendations and engage with stakeholders on any next steps, including realising our Vision outcomes.

Use of Chemicals and Medicines

Q: The Scottish Government should instruct SEPA to set a timeline for reducing, then ending the discharge of chemicals from fish farms.

- Fish farm operators use medicines and chemicals for a variety of applications, mainly to ensure the health and welfare of farmed fish.
- SEPA regulates discharges of organic matter, medicine and chemicals through its regulatory framework for managing discharges (which may affect the water environment and seabed).
- This framework has been applied to all new farms and expansion of existing farms since June 2019. The transfer of all active farms is due to be completed by the end of 2024.
- SEPA sets permit conditions developed from strict Environmental Standards, applicable in Scotland, which limit the impacts associated with fish farms by ensuring that operators comply with these conditions.

Climate change

Background

[Redacted – Regulation 10(4)(e)]

- [Redacted – Regulation 10(4)(e)]The sector and the wider academic community are in the early stages of understanding the impact of climate change on aquaculture – we will continue to engage with stakeholders as the science develops.

Fish Feed Sustainability

The journal Science Advances published an article entitled ‘Feeding Global Aquaculture’ on 16 October 2024. This covers all forms of aquaculture, and its key conclusion is:

The expanded view of feeding global aquaculture offered here suggests that common sustainability accounting methods have been too narrow, overconfident in their precision, and overly optimistic. Both marine and terrestrial impacts are still highly uncertain, but these revised estimates suggest that the environmental impacts of this sector, in its current form and structure, are sufficiently large that directives to expand this sector on sustainability grounds should be reconsidered.

- Assumptions made by the article’s authors are based on international production models and extensive use is made by the authors of Norwegian and Chilean data for feed conversion rates and inclusion of fish meal and fish oil.
- While the the article highlights an opportunity for further study it does not reflect specific practice within Scotland.
- Scottish salmon typically achieves a feed conversion rate of 1:1.1 which is superior to the figures used in the article.
- Ingredients used in Scottish feed come from sustainable sources and are accredited by a range of third-party schemes.
- The Scottish sector continues to develop the use of trimmings in sourcing fish oil and fish meal and is working to use algal oils as a replacement.

- Previous studies (2022 [Maximising sustainable nutrient production from coupled fisheries-aquaculture systems | PLOS Sustainability and Transformation](#)) have advocated for the inputting of wild caught fish used in salmon feed directly into the human food chain, but subsequent analysis has shown this is less achievable than argued due to human smell and taste preferences, geographical constraints and a range of supply chain issues.

Q: Is it not more efficient and thus sustainable to utilise wild caught fish currently used in farmed fish feed for direct human consumption?

The species used in feed are typically small, prone to breaking down, and are high in oils which oxidise rapidly. This makes their use in the human food chain without processing extremely difficult. Freezing is inefficient, canning was explored very thoroughly and unsuccessfully by the Peruvian government and dehydrating can lead to strong tastes and odours which are unattractive to consumers. Use in farmed fish feed is thus an effective and efficient way to get that nutrition into the human supply chain via an efficient farm animal.

Q: Is the Scottish Government concerned forage fish are at times being imported from South America in order to provide feed for Scottish Farmed salmon?

The Scottish salmon sector ensures sustainability by purchasing fishmeal and fish oil through MSC, Marine Trust or certified Fisheries Improvement Program (FIP) suppliers for 100% of their feed production. Fisheries must be maintained and regulated within their maximum sustainable yield to avoid detrimental impacts and source traceability is ensured through Certificates of Analysis or Traceability and 3rd-Party certifications. The Peruvian anchovy fishery is the world's largest single stock fishery and accounts for 20% of global fishmeal production in most years. Krill is the most sustainably managed fishery in the world according to the Sustainable Fisheries Partnership, with the quota representing only 1% of the total biomass available. While there is always an opportunity to improve in any system, we are satisfied that the Scottish salmon sector sources feed ingredients in a sustainable manner. The GHG emissions profile of farmed salmon remains lower than many other terrestrial sources of protein.

Q: We've heard from representatives, and in a recent open letter to you published in the Herald, that salmon farming can come at the expense of opportunities for others or with outsized environmental impact. How do we ensure this is not the case? Should the Scottish Government conduct a cost benefit analysis?

- The economic and social benefits of salmon farming are clear. We are discussing the UK's number 1 food export, a sector with global reach, which supports around 12,000 jobs in Scotland across its supply chain and which provides a steady stream of revenue to Scotland's coastal communities and which embeds itself in those communities.
- Salmon farming provides well-paid secure employment, particularly in coastal and island communities. These jobs can materially enhance the sustainability of often small communities.

- In Shetland, for example, aquaculture (fish and shellfish) is Shetland's largest private sector employer, accounting for an estimate 20% of the economy and 5% of all jobs (Seafood Shetland and Salmon Scotland estimates).
- A study by Cooke Aquaculture Scotland in Orkney found that their permanent, skilled jobs were paying on average 24.8% more than the average Orkney wage and 8.6% above the average for Scotland.
- The planning system ultimately delivers a cost benefit analysis of every development proposal: The planning system carefully considers the economic, social and environmental impacts of fish farms, including environmental impact assessment, carefully and experienced local authority planners are charged with making decisions in the best interest of their communities, in consideration of social and economic impact and in line with the statutory development plan.
- The planning system must consider the environmental impacts of salmon farming and ensure that they are mitigated to an appropriate level.
- Further to that – SEPA will not permit significant environmental impacts; farms would not achieve a licence if they were guilty of significant impact in the way suggested.
- National Planning Framework 4 is an integrated strategy to bring together cross-cutting priorities and achieve sustainable development. NPF4's policy on aquaculture seeks to ensure that new aquaculture development is in locations that reflect industry needs and considers environmental impacts, and that producers contribute to communities and local economies.
- We are also now working to deliver a new National Marine Plan 2 to meet Scotland's future needs.
- Wider regulatory frameworks already capture some elements of the aquaculture supply chain, such as fisheries management measures in relation to the wrasse fishery (for cleaner fish) and blue whiting (related to feed).
- The physical footprint of salmon farming in Scottish waters is estimated to be 4,000 hectares, about the same size as Colonsay; it is a small proportion of our territorial waters. The sector itself gave evidence to the Committee that it is more interested in expanding its value than expanding its physical size; with Ben Hadfield noting that production has 'flatlined' at around 180,000 tons for some time. That means making better use of existing quantity of biomass, including by moving farms to better locations where required.