Dear Rural Committee

I am writing as a concerned member of the public and representative of the Alliance for Cruelty Free Science to bring to your attention a report I have compiled on the testing and monitoring of farmed salmon by DEFRA and its partner agencies (attached: "Report Farmed salmon Final R.pdf").

The report details responsibilities across UK agencies (including DEFRA, APHA, CEFAS, and devolved bodies like Marine Scotland and SEPA), highlights significant gaps in transparency and data availability on key issues such as contaminants, microplastics, pathogens, parasites, antibiotic residues, heavy metals, PFAS, and animal welfare assessments, and documents challenges encountered through Freedom of Information requests (e.g., referrals without substantive responses, claims that analysis falls outside remits despite expertise).

I have already submitted this report to the relevant ministers:

- Dame Angela Eagle MP (Minister of State for Food Security and Rural Affairs, DEFRA) for UK-wide oversight.
- Mairi Gougeon MSP (Cabinet Secretary for Rural Affairs, Land Reform and Islands, Scottish Government) for Scotland's primary role in regulation and production.

Given your expressed concerns about [briefly reference their known issue, e.g., "the environmental and welfare impacts of open-net salmon farming" or "high mortality rates and sea lice issues in Scottish farms"], I am sharing the report for your information. It may support ongoing scrutiny, parliamentary questions, committee work, or calls for improved regulation, transparency, and testing in this sector.

I would welcome any feedback, or if you require further details from the FOI correspondence or devolved responses (which I am collating). Please let me know if you would like to discuss this matter. I have also include in this email to you, the contact details of Dr. Andre Menache, the scientific consultant to the campaign group The Alliance for Cruelty Free Science

Thank you for your attention to these important issues affecting animal welfare, public health, environmental protection, and sustainable aquaculture.

Yours sincerely,

Linda Birr-Pixton
Alliance for Cruelty Free Science

Report on the testing of farmed salmon by Defra and its partner agencies.

What are the responsibilities of DEFRA regarding farmed salmon? Can they commission environmental tests for farmed salmon? Who would carry this out and which agencies are involved in reporting to Defra on farmed salmon?

The Department for Environment, Food & Rural Affairs (DEFRA) has oversight responsibilities for aquaculture in England and Wales, including farmed salmon, though the majority of UK salmon farming occurs in Scotland (where responsibilities are devolved to the Scottish Government and agencies like Marine Scotland and the Scottish Environment Protection Agency).

DEFRA's role focuses on policy development, funding, and ensuring compliance with UK-wide standards for animal welfare, environmental protection, biosecurity, and sustainable food production in the sector. This includes supporting initiatives like the Fisheries and Seafood Scheme to promote sustainability and resilience in aquaculture, as well as addressing issues such as disease control, water quality, and the environmental impacts of farming practices (e.g., waste discharge and interactions with wild fish populations).

https://assets.publishing.service.gov.uk/media/5a790af1ed915d0422067570/120112-aquaculture-consult-doc.pdf

DEFRA can commission environmental tests and monitoring for farmed salmon as part of its remit to protect the environment and ensure sustainable aquaculture practices. This includes assessments of water quality, pollution from farm discharges, sea lice management, and broader ecological impacts on marine ecosystems. Such commissioning typically occurs through research programs, impact assessments, or regulatory enforcement to inform policy and compliance.

These tests would typically be carried out by DEFRA's executive agencies or sponsored bodies with expertise in marine science and aquaculture, such as the Centre for Environment, Fisheries and Aquaculture Science (CEFAS), which conducts research, monitoring, and data analysis on environmental stressors, aquatic health, and sustainability in farmed salmon operations.

https://assets.publishing.service.gov.uk/media/5a7a3727ed915d1fb3cd644b/defra-role.pdf

The following is a comprehensive list of UK agencies involved in testing and monitoring farmed salmon. This includes activities such as disease surveillance, environmental impact assessments, water quality testing, residue monitoring for veterinary medicines and contaminants, welfare evaluations, and biosecurity checks.

The list focuses on agencies with direct roles in these areas, based on their mandates. Note that aquaculture is a devolved matter, so DEFRA's direct oversight is primarily in England (and UK-wide for certain trade/disease aspects), while other nations have their own agencies that may coordinate with DEFRA on national or international reporting (e.g., to NASCO or ICES).

Agencies are grouped by primary jurisdiction for clarity, with their specific testing roles and relationship to DEFRA described.

Key agencies involved in reporting to DEFRA on farmed salmon include:

Agency	Testing/Monitoring Role for Farmed Salmon	Relationship to DEFRA
Centre for Environment, Fisheries and Aquaculture Science (CEFAS)	Conducts scientific research, environmental testing (e.g., water quality, ecological impacts), disease diagnostics, and health monitoring; operates labs for contaminant testing in aquaculture products.	Executive agency of DEFRA, providing direct scientific support and advice.
Fish Health Inspectorate (FHI)	Performs routine health inspections, disease testing (e.g., for notifiable diseases like infectious salmon anaemia), biosecurity checks, and mortality investigations on fish farms.	Operates under CEFAS as the official service for aquatic animal health in England and Wales; reports to DEFRA.
Animal and Plant Health Agency (APHA)	Handles disease surveillance, biosecurity testing, and welfare assessments for farmed fish, including outbreak investigations.	Executive agency of DEFRA, responsible for animal health policy implementation.
Marine Management Organisation (MMO)	Conducts environmental impact assessments, marine licensing checks, and monitoring for pollution and habitat effects from aquaculture sites.	Executive non-departmental public body sponsored by DEFRA.
Environment Agency (EA)	Monitors and tests for environmental impacts, including water quality, effluent discharges, and pollution from fish farms under environmental permitting regulations.	Non-departmental public body sponsored by DEFRA, implementing environmental regulations in England.
Veterinary Medicines Directorate (VMD)	Oversees residue testing for veterinary medicines, antibiotics, and other substances in farmed salmon through national surveillance programs.	Executive agency of DEFRA.
Animal Welfare Committee (AWC)	Provides expert advice on welfare standards, which may involve reviewing or recommending testing protocols for farmed fish health and conditions.	Independent advisory committee to DEFRA (and devolved administrations).
Food Standards Agency (FSA)	Designates labs for testing contaminants, residues, and food safety in farmed salmon products; oversees monitoring programs for chemical and microbial risks.	Non-ministerial government department; collaborates with DEFRA on food chain safety but operates independently.
Natural Resources Wales (NRW)	Similar to EA; tests for environmental impacts, water quality, and discharges from aquaculture in Wales.	Sponsored by the Welsh Government; collaborates with DEFRA on cross-border and UK-wide issues (e.g., reporting to ICES/NASCO).
Scottish Environment Protection Agency (SEPA)	Monitors environmental standards, tests for waste, chemicals, and pollution from salmon farms; enforces regulations on sea lice and site impacts.	Accountable to the Scottish Government; coordinates with DEFRA on UK-wide environmental reporting but no direct oversight.
Marine Scotland	Conducts fish health inspections, disease testing, and monitoring for farmed salmon in Scotland; includes a dedicated Fish Health Inspectorate.	Part of the Scottish Government; collaborates with DEFRA on UK-wide matters like disease notifications.
Department of Agriculture, Environment and Rural Affairs (DAERA)	Oversees licensing, environmental testing, and health monitoring for farmed salmon in Northern Ireland.	Part of the Northern Ireland Executive; coordinates with DEFRA on UK-wide trade and disease issues.
Agri-Food and Biosciences Institute (AFBI)	Lab-based testing for contaminants, biotoxins, and diseases in aquaculture products (including potential for salmon).	Sponsored by DAERA; no direct relationship to DEFRA but supports UK-wide food safety via FSA designations.

What are the issues?

The template below was provided to ask DEFRA key questions about the latest analysis on the testing for farmed salmon in the UK.

Dear Department for Environment, Food and Rural Affairs,
Please could I see the latest analysis your department, or contractor has carried out on the testing of farmed salmon.
A. I would like to the see the detail of the methods used please including:
1. The chemical analysis for contaminants
2. Microplastic detection
3. Pathogen and parasite testing
4. Nutritional and compositional analysis
5. Biometric and welfare assessments

B. Can you confirm you are using these recommended methods of testing: GC-MS, LC-MS, ICP-MS, FTIR, Raman spectroscopy, real-time PCR, IFAT, VI, NMR, scale microchemistry, and diode frame technology?
I would be interested to know if you have used or your contractor has used any other methods of testing on farmed salmon.

C. I would like to see the latest testing results for:
1. Persistent Organic Pollutants
2. Heavy Metals
3. Per- and Polyfluoroalkyl Substances (PFAS)
4. Micro-plastics
5. Antibiotic residues
6. Pesticides and anti parasitic drugs
7. Pathogens and parasites
8. Endocrine Disrupting Chemicals

Had DEFRA replied and provided the information as requested that would have been sufficient.

However what happened is that DEFRA gave it to APHA to respond clearly expecting that they would hold the information requested and APHA said they did not hold any such information.

DEFRA is the UK department with overall responsibility for the management and welfare and the industry that is farmed salmon.

I asked for an internal review and again was stonewalled.

https://www.whatdotheyknow.com/request/latest_analysis_of_testing_on_fa#outgoing-1923910

This led me to find all the agencies involved in the farmed salmon industry and the welfare of the salmon. I created the list of agencies as at page 2 of this document.

What is APHA?

The Animal and Plant Health Agency (APHA), as an executive agency of DEFRA (Department for Environment, Food & Rural Affairs), plays a significant role in overseeing the health and biosecurity of farmed salmon in the UK. Its responsibilities focus on ensuring the welfare of farmed fish, preventing and controlling diseases, and maintaining biosecurity standards in aquaculture, particularly for Atlantic salmon, which is a major aquaculture species in the UK (primarily in Scotland).

Below is a detailed breakdown of APHA's role in relation to farmed salmon:

1. **Disease Surveillance and Control**

- Monitoring Notifiable Diseases: APHA is responsible for monitoring and controlling notifiable diseases affecting farmed salmon, such as Infectious Salmon Anaemia (ISA), Viral Haemorrhagic Septicaemia (VHS), and Bacterial Kidney Disease (BKD). These diseases can have significant economic and environmental impacts.
- Diagnostic Services: APHA's veterinary and laboratory services, including its National Reference Laboratories, conduct diagnostic testing to identify pathogens in farmed salmon. This involves post-mortem examinations, tissue sampling, and molecular testing to detect diseases early.
- Outbreak Response: In the event of a disease outbreak, APHA coordinates containment measures, which may include culling infected stocks, imposing movement restrictions, and disinfecting affected sites. For example, APHA would lead the response to an ISA outbreak by enforcing control zones and collaborating with industry stakeholders.

2. **Biosecurity Regulation and Enforcement**

- Farm Inspections: APHA conducts inspections of salmon farms to ensure compliance with biosecurity standards, such as proper water treatment, equipment disinfection, and separation of farmed and wild fish populations to prevent disease transmission.
- Regulatory Oversight: APHA enforces legislation related to aquaculture, including the Aquatic Animal Health (England and Wales) Regulations 2009 and equivalent regulations in Scotland (where much of UK salmon farming occurs). These regulations require fish farms to register with APHA, report disease outbreaks, and follow biosecurity protocols.
- Movement Controls: APHA regulates the movement of live salmon (e.g., smolts or broodstock) to prevent the spread of diseases. It issues permits and health certificates for intra-UK and international movements, ensuring compliance with biosecurity standards.

3. **Health Certification for Trade**

- Export and Import Controls: APHA issues health certificates for farmed salmon and salmon products (e.g., fillets, eggs) exported from the UK, ensuring they meet international health standards set by bodies like the World Organisation for Animal Health (OIE). This is critical for the UK's salmon industry, which exports significant volumes, particularly from Scotland.
- Border Inspections: APHA oversees biosecurity checks on imported salmon or aquaculture equipment to prevent the introduction of exotic diseases or parasites, such as Gyrodactylus salaris, a notifiable parasite that can devastate salmon populations.

4. Scientific Research and Advice

- Research on Fish Health: APHA conducts research into salmon diseases and parasites, such as sea lice (Lepeophtheirus salmonis), which are a major challenge for the industry. This includes studying resistance to treatments and developing sustainable control methods.

- Risk Assessments: APHA provides scientific advice to DEFRA and the Scottish Government on risks to farmed salmon, such as emerging diseases or environmental factors (e.g., water quality). This informs policy and management practices.
- *Collaboration*: APHA works with research institutions, such as the Centre for Environment, Fisheries and Aquaculture Science (Cefas), to advance fish health science and biosecurity measures.

5. Animal Welfare
- Welfare Standards: APHA ensures that farmed salmon are kept in conditions that meet welfare standards under UK animal health legislation. This includes monitoring stocking densities, water quality, and handling practices to minimize stress and disease risk.
- Investigations: APHA investigates reports of poor welfare or disease incidents on salmon farms, taking enforcement action if regulations are breached.

6. Collaboration with Devolved Administrations
- In Scotland, where most UK salmon farming occurs, APHA works closely with the Scottish Government's Fish Health Inspectorate (part of Marine Scotland), which has primary responsibility for aquaculture regulation. APHA supports with diagnostic services, notifiable disease control, and UK-wide biosecurity coordination.
- APHA also collaborates with Welsh and Northern Irish authorities where salmon farming or related activities occur, though these are smaller in scale compared to Scotland.

Examples of APHA's Impact on Farmed Salmon
- Sea Lice Management*: APHA supports efforts to monitor and control sea lice, a significant issue for farmed salmon. It provides guidance on treatments and biosecurity to reduce impacts on both farmed and wild salmon populations.
- ISA Outbreak Response*: In the rare event of an ISA outbreak, APHA would lead the UK's response, implementing rapid containment measures to protect the £2 billion Scottish salmon industry.
- Post-Brexit Trade: Since Brexit, APHA has taken on increased responsibility for certifying salmon exports to the EU and other markets, ensuring compliance with stricter biosecurity requirements.

Limitations and Context
- Devolved Responsibility: While APHA has a UK-wide role, much of the day-to-day regulation of salmon farms in Scotland is handled by Marine Scotland. APHA's role is more prominent in England and Wales or in cases involving notifiable diseases or international trade.
- Environmental Concerns: APHA's focus is primarily on health and biosecurity, but it also considers environmental impacts, such as the interaction between farmed and wild salmon populations, in collaboration with other agencies like the Environment Agency or NatureScot.

In summary, APHA's role in farmed salmon in the UK centers on disease surveillance, biosecurity regulation, trade certification, research, and welfare enforcement. It acts as a critical partner in protecting the health of farmed salmon, supporting the aquaculture industry's economic viability, and minimizing risks to wild fish populations and the environment.

Clearly APHA have a role to play and I said this in the internal review:

Dear Department for Environment, Food and Rural Affairs,

Please pass this on to the person who conducts Freedom of Information reviews.

I am writing to request an internal review of Department for Environment, Food and Rural Affairs's handling of my FOI request 'Latest analysis of testing on farmed Salmon'.
The FOI request I made was to DEFRA. It was passed to APHA who have declared they do not hold the information. In which case this should have been returned to DEFRA to respond to as they are the lead department.
I did not ask Apha for the information I asked DEFRA under my Freedom of Information request.
This is an avoidance of my request which was clearly outlined and requested information that Defra as part of its duties. While DEFRA (the Department for Environment, Food & Rural Affairs) doesn't directly conduct routine tests on farmed salmon, it plays a role in ensuring the safety and welfare of farmed fish through various mechanisms. DEFRA oversees the legal framework for fish farming, including regulations related to disease management, and also funds research that informs these regulations. Additionally, DEFRA works with other agencies like the Food Standards Agency (FSA) and the Animal and Plant Health Agency (APHA) on specific testing and surveillance programs related to farmed salmon.
I included in my FOI the request to include DEFRA contractors who will have been used to gather the information and data I requested.
As a concerned member of the public I find the obfuscation of direct responsibility most concerning and I request that this is taken seriously please.
A full history of my FOI request and all correspondence is available on the Internet at this address:
https://www.whatdotheyknow.com/request/l...
Yours faithfully,

Linda Birr-Pixton

The Internal review from Apha held to the position that the information was not held.

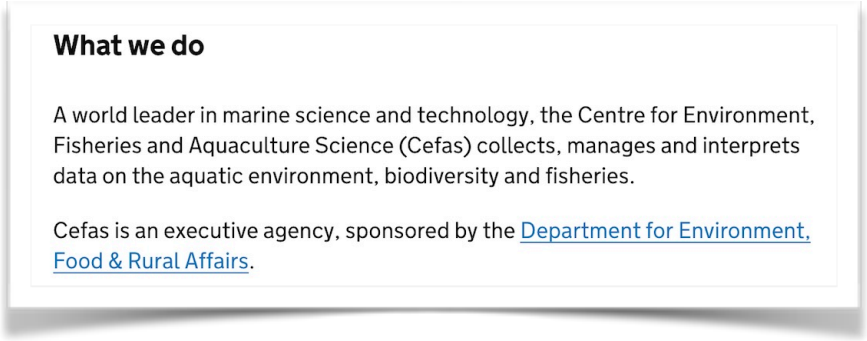
As a consequence I have now used the original FOI template and sent each agency an FOI on the original set of information. I have not sent it again to APHA or to DEFRA at this stage as the replies need to all come back in.

There are devolved administration authorities who operate the management of the whole process in Scotland, Wales and Northern Ireland. Yet they work closely with DEFRA who offered no information on this process at all.
I have detailed the received devolved administration authorities responses

Once they are all returned I will review the information and may seek the Information Commissioners Office to help explain why DEFRA cannot or will not answer the FOI I originally made.

Responses under FOI

1. ***Centre for Environment, Fisheries and Aquaculture Science (CEFAS):***
Provides scientific advice, data collection, and research on aquaculture health, environmental impacts, and sustainability, including for salmon farming.
https://www.gov.uk/government/organisations/centre-for-environment-fisheries-and-aquaculture-science
FOI response:



What we do

A world leader in marine science and technology, the Centre for Environment, Fisheries and Aquaculture Science (Cefas) collects, manages and interprets data on the aquatic environment, biodiversity and fisheries.

Cefas is an executive agency, sponsored by the Department for Environment, Food & Rural Affairs.

https://www.whatdotheyknow.com/request/re_latest_analysis_of_testing_on_2#incoming-3158204

The response from the Science Data Team is below:
Dear Linda,

Thank you for your recent request for information which Cefas received on 13 September 2025.

The analysis of farmed salmon does not fall within the remit of the Centre for Environment, Fisheries and Aquaculture Science (Cefas) and we therefore confirm under Regulation 12(4)(a) of the Environmental Information Regulations (2004) that we do not hold the information you have requested.

Kind regards,

Science Data Team
Pakefield Road, Lowestoft, Suffolk, NR33 0HT, UK
Tel: +44(0) 1502 562244 | Email: [email address]
Cefas Data Portal: http://data.cefas.co.uk/#/ ODIS id: 1082

Tackling global challenges through innovative science solutions

The question that needs asking is: Why does the analysis of farmed salmon NOT fall within the remit of this "world leading" team who manage and interpret data just not this set?

This question has now been asked.

https://www.whatdotheyknow.com/request/explain_responsibility_of_analys

Back comes the reply

I have consulted with colleagues from our Fish Health and Welfare directorate for their advice to help answer your request, and the following explanation has been provided:

"Cefas does not undertake routine monitoring or surveillance, testing or hold data on contaminants in farmed salmon in the UK. National surveillance programmes for contaminants fall under the jurisdiction of the Food Standards Agency (FSA) for England & Wales, and the Food Standards Scotland (FSS) for Scotland, and the Veterinary Medicines Directorate (VMD). Decisions on operation of such monitoring, surveillance and testing programmes therefore sit within the competency of FSA, FSS, and VMD."

The Food Standards Agency can be contacted through their general enquiry form on their website; https://fsa-services-eng-forms.food.gov...., and the Food Standards Scotland can be contacted via their contact page; https://www.foodstandards.gov.scot/about..., and contact information about the Veterinary Medicines Directorate can be found on their website; https://www.gov.uk/government/organisati....

Will be a surprise for the Foods Standard Agency who replied they did not see the data.

2. Fish Health Inspectorate (FHI):
Operates under CEFAS; focuses on health inspections, disease control, and policy advice for wild and farmed aquatic animals, including salmon.
https://www.gov.uk/government/groups/fish-health-inspectorate
https://www.whatdotheyknow.com/request/re_latest_analysis_of_testing_on_4#incoming-3189389


GOV·UK

Home

Fish Health Inspectorate

We are the Official Service for aquatic animal health in England and Wales, responsible, on behalf of Defra and the Welsh Government (WG), for fish and shellfish health matters. Our main aim is to prevent the introduction and spread of serious and emerging fish and shellfish diseases. We achieve this through our risk-based aquatic animal health inspection programme, monitoring and enforcing compliance with legislation, trade controls, investigating and control of serious disease outbreaks and unexplained mortalities in fish, molluscs and crustacea.

The response was initially that they don't hold information on licensing. So didn't read the whole FOI text.I challenged this as can be seen on the above link:
Dear XXXXXXXX
Thank you for your prompt reply and helpful suggestion of where to go next to clarify this information.
Could you please confirm that the Fish Health Inspectorate while not seeing all the testing methods I asked about, do actually see and use the following in their work:
1. IFAT (Indirect Fluorescent Antibody Test)
2. VI (Virus Isolation)

3. Real-time PCR (Polymerase Chain Reaction)- Standard diagnostic method for listed diseases; FHI uses or requires this in surveillance and confirmation testing?
Yours sincerely,
Linda Birr-Pixton

And back comes the reply which states

Dear Linda

Thank you for your email.I can confirm that all of the methods listed in your information request are used as appropriate on diagnostic samples collected by the FHI for listed disease surveillance purposes - IFAT (Indirect Fluorescent Antibody Test) 2. VI (Virus Isolation) 3. Real-time PCR (Polymerase Chain Reaction) - this includes confirmatory testing, as required.

This FOI shows the right hand does not know what the left hand is doing or in this case what each agency is doing.

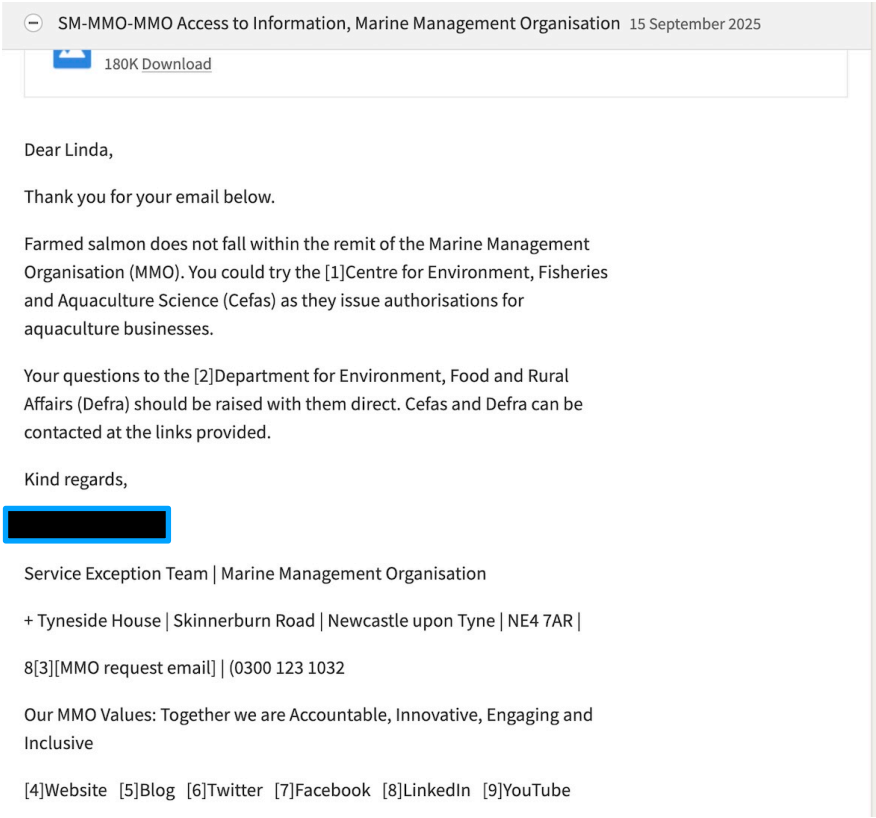
3. ***Animal and Plant Health Agency (APHA):***
Handles animal welfare, biosecurity, and disease surveillance in farmed fish, reporting on compliance and risks.
APHA (the Animal and Plant Health Agency) is an executive agency of DEFRA (the Department for Environment, Food & Rural Affairs), the UK government department responsible for environmental protection, food production, and rural affairs.
This means APHA operates with operational independence but remains accountable to DEFRA for its performance, policy alignment, and use of public funds.
APHA delivers DEFRA's priorities in animal and plant health, disease surveillance, biosecurity, and scientific research, while also supporting the Scottish and Welsh governments. It was formed in 2014 by merging the Animal Health and Veterinary Laboratories Agency (AHVLA) with parts of the Food and Environment Research Agency (FERA).
Its responsibilities focus on ensuring the welfare of farmed fish, preventing and controlling diseases, and maintaining biosecurity standards in aquaculture, particularly for Atlantic salmon, which is a major aquaculture species in the UK (primarily in Scotland).
https://www.aphascientific.com/

Well clearly not fulfilling that role then as they refused to answer the question by saying the information was not held and did that on behalf of DEFRA

https://www.whatdotheyknow.com/request/latest_analysis_of_testing_on_fa#outgoing-1923910

4. Marine Management Organisation (MMO):
Sponsored by DEFRA; reports on marine licensing, environmental assessments, and funding schemes related to aquaculture in English waters.
https://www.gov.uk/government/organisations/marine-management-organisation

https://www.whatdotheyknow.com/request/re_latest_analysis_of_testing_on#incoming-3155541



SM-MMO-MMO Access to Information, Marine Management Organisation 15 September 2025

180K Download

Dear Linda,

Thank you for your email below.

Farmed salmon does not fall within the remit of the Marine Management Organisation (MMO). You could try the [1]Centre for Environment, Fisheries and Aquaculture Science (Cefas) as they issue authorisations for aquaculture businesses.

Your questions to the [2]Department for Environment, Food and Rural Affairs (Defra) should be raised with them direct. Cefas and Defra can be contacted at the links provided.

Kind regards,

[redacted]

Service Exception Team | Marine Management Organisation

+ Tyneside House | Skinnerburn Road | Newcastle upon Tyne | NE4 7AR |

8[3][MMO request email] | (0300 123 1032

Our MMO Values: Together we are Accountable, Innovative, Engaging and Inclusive

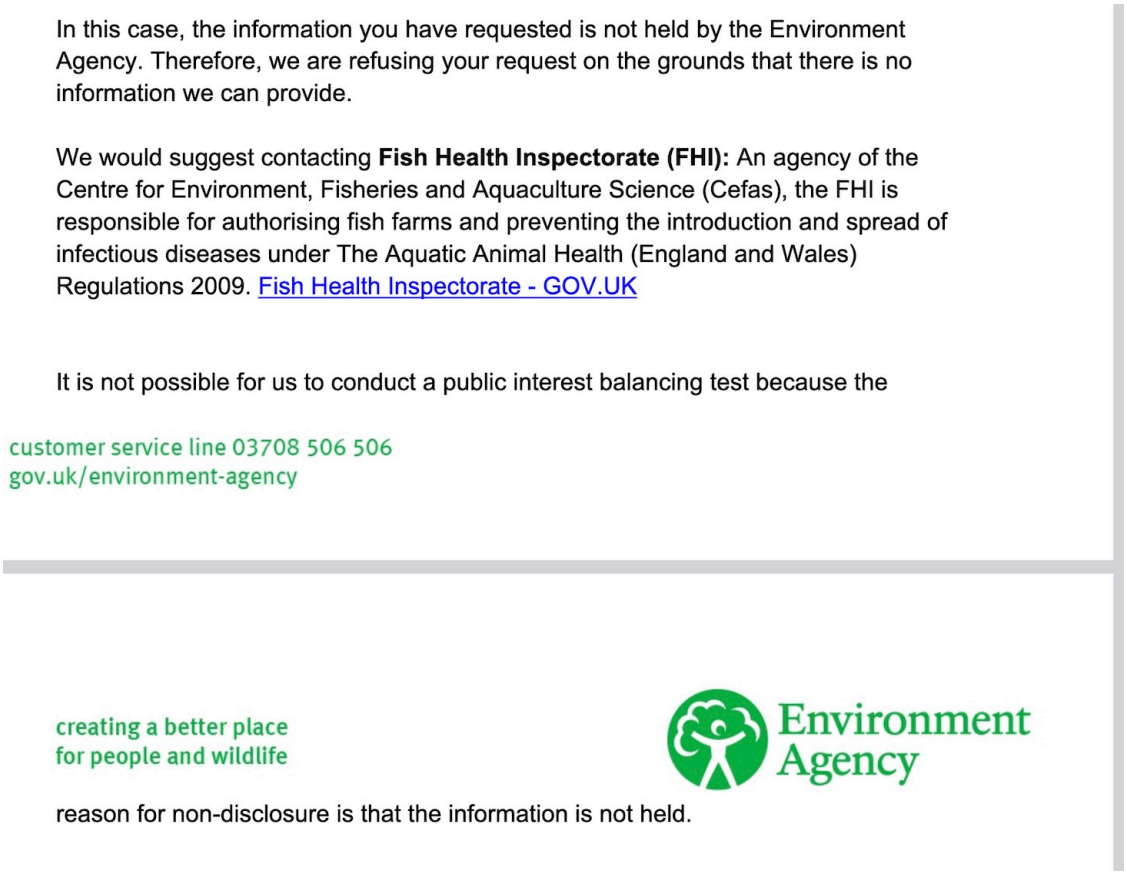
[4]Website [5]Blog [6]Twitter [7]Facebook [8]LinkedIn [9]YouTube

This organisation was most helpful - told me to ask CEFAS and DEFRA. Clearly they believe both CEFAS and DEFRA have a role to play which to date neither has said they do.

5. Environment Agency

The Environment Agency has just been sent an FOI as I wanted to see the information and replies from the other agencies.

https://www.whatdotheyknow.com/request/re_latest_analysis_of_testing_on_9



In this case, the information you have requested is not held by the Environment Agency. Therefore, we are refusing your request on the grounds that there is no information we can provide.

We would suggest contacting **Fish Health Inspectorate (FHI):** An agency of the Centre for Environment, Fisheries and Aquaculture Science (Cefas), the FHI is responsible for authorising fish farms and preventing the introduction and spread of infectious diseases under The Aquatic Animal Health (England and Wales) Regulations 2009. Fish Health Inspectorate - GOV.UK

It is not possible for us to conduct a public interest balancing test because the

customer service line 03708 506 506
gov.uk/environment-agency

creating a better place
for people and wildlife

Environment Agency

reason for non-disclosure is that the information is not held.

6. Veterinary Medicines Directorate -
This service asked me to explain what I was asking so I have clarified and asked supplementary questions
https://www.whatdotheyknow.com/request/re_latest_analysis_of_testing_on_3#incoming-3190708

Their reply:
1. Can you confirm you see data and information on the conditions of farmed salmon and their management of these recommended methods of testing: GC-MS, LC-MS, ICP-MS, FTIR, Raman spectroscopy, real-time PCR, IFAT, VI, NMR, scale microchemistry, and diode frame technology ? How do you use this information please?

Under the VMD's residues programme, the majority of salmon samples (skin and muscle, in natural proportions) are tested for residues using LC-MS. GC-MS, ICP-MS and HPLC-FLD are also used to detect specific substances such as metals, aflatoxins and pyrethroids. Combined, these test methods are used to check for residues of prohibited substances, veterinary medicines and contaminants in salmon samples. If a residue above the Maximum Residue Limit (MRL) or action level is found in a sample, an investigation is conducted to establish the cause.

2. What is the process for informing the public of such issues and are yourselves or DEFRA leading on public information in these issues? – Even if your organisation is not involved please can you tell me how this is managed to the best of your knowledge?

The annual results of the VMD's testing and investigation activity are published on the VMD's GOV.UK [1]webpage, dating back to 2011.

3. What role does the VMD provide in the detection, management and implementing of policies in these areas: 1. The chemical analysis for contaminants 2. Microplastic detection 3. Pathogen and parasite testing 4. Nutritional and compositional analysis 5. Biometric and welfare assessments

Of the above, the VMD is only responsible for the analysis of chemical contaminants in salmon. The VMD plays a coordinating role in terms of delivering the residues programme, and sampling and investigation activity is carried out by Scotland's Marine Directorate.

4. Can you direct me to where the non-compliance in the management of these areas is please and what the VMD role is in the management of: 1. Persistent Organic Pollutants 2. Heavy Metals 3. Per- and Polyfluoroalkyl Substances (PFAS) 4. Micro-plastics 5. Antibiotic residues 6. Pesticides and anti parasitic drugs 7. Pathogens and parasites 8. Endocrine Disrupting Chemicals

Of the above, the VMD organises the testing of salmon samples for persistent organic pollutants, heavy metals, per and polyfluoroalkyl substances, antibiotic residues, pesticides and parasiticides. Further

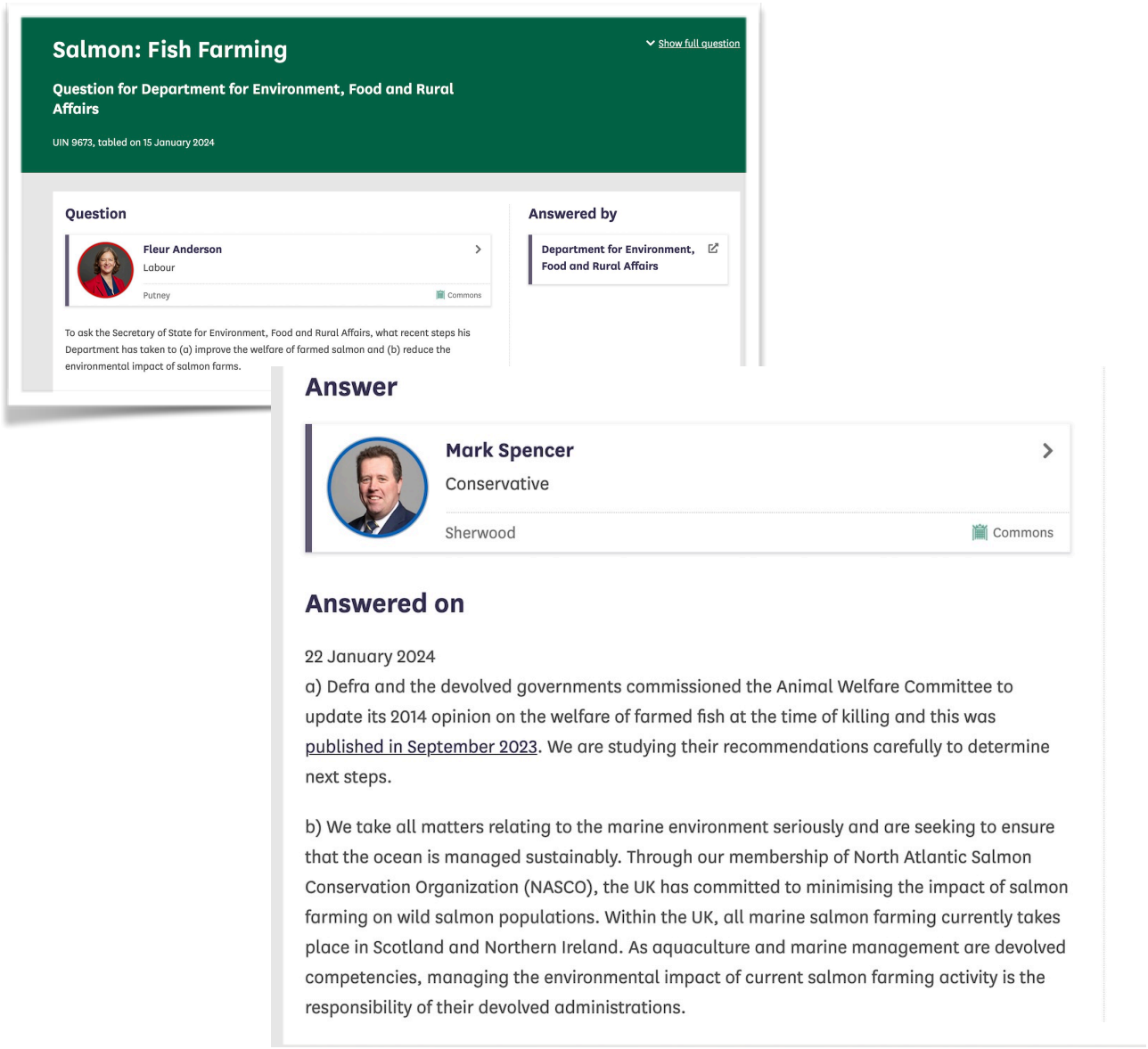
information on the outputs of this testing programme can be found on the VMD's GOV.UK [2]webpage, dating back to 2011.

No actual data was provided or shared nor I was given any public access to such information they hold as a Directorate.

7. Animal Welfare Committee (AWC, formerly Farm Animal Welfare Committee or FAWC): An advisory body that provides independent reports to DEFRA on welfare issues in farmed fish, including salmon.

Independent advisory committee to DEFRA and to devolved adminsitrations. Provides expert advice on welfare standards which may involve reviewing or recommending testing protocols for farmed fish healhand conditions.

https://questions-statements.parliament.uk/written-questions/detail/2024-01-15/9673



Salmon: Fish Farming

Show full question

Question for Department for Environment, Food and Rural Affairs

UIN 9673, tabled on 15 January 2024

Question

Fleur Anderson
Labour
Putney
Commons

To ask the Secretary of State for Environment, Food and Rural Affairs, what recent steps his Department has taken to (a) improve the welfare of farmed salmon and (b) reduce the environmental impact of salmon farms.

Answered by

Department for Environment, Food and Rural Affairs

Answer

Mark Spencer
Conservative
Sherwood
Commons

Answered on

22 January 2024

a) Defra and the devolved governments commissioned the Animal Welfare Committee to update its 2014 opinion on the welfare of farmed fish at the time of killing and this was published in September 2023. We are studying their recommendations carefully to determine next steps.

b) We take all matters relating to the marine environment seriously and are seeking to ensure that the ocean is managed sustainably. Through our membership of North Atlantic Salmon Conservation Organization (NASCO), the UK has committed to minimising the impact of salmon farming on wild salmon populations. Within the UK, all marine salmon farming currently takes place in Scotland and Northern Ireland. As aquaculture and marine management are devolved competencies, managing the environmental impact of current salmon farming activity is the responsibility of their devolved administrations.

https://www.whatdotheyknow.com/request/re_latest_analysis_of_testing_on_5#outgoing-1952837

They did not read the FOI in its entirety and said:

"The AWC does not hold any information relating to your request. The AWC is not involved in issuing licenses for the farming of salmon or monitoring farmed salmon fisheries."

They sent me a list of their lofty ambitions and aims though. Most helpful.
It enabled me to ask them again using the above question raised in the house to them.
I said this:
It would be most strange that the Animal Welfare Committee which provides evidence-based advice to the UK and devolved governments on animal welfare issues, and whose reports and opinions play a pivotal role in shaping policy, legislation, and industry practices is unable to help answer this Freedom of Information Request. For farmed salmon the AWC's work addresses gaps in current welfare protections, as fish are not fully covered by detailed farm animal welfare regulations like those for terrestrial species.
I suggest that you have not been helpful in this Freedom of Information Request and ask that you look at this again please.

Their response is that this is not in their work plan. So farmed salmon get no oversight from this committee at this moment in time. Health and welfare of these salmon are omitted.

https://www.whatdotheyknow.com/request/re_latest_analysis_of_testing_on_5#outgoing-1952837

This is at odds with their brief:
Overview of the Animal Welfare Committee (AWC)
The Animal Welfare Committee (AWC) is an independent expert advisory body in the UK, established under the Animal Welfare Act 2006. It provides evidence-based advice to the UK and devolved governments on animal welfare issues, including those affecting farmed animals.
While it has no direct regulatory or enforcement powers, its reports and opinions play a pivotal role in shaping policy, legislation, and industry practices.

For farmed salmon—primarily Atlantic salmon raised in Scotland, which accounts for the majority of UK production—the AWC's work addresses gaps in current welfare protections, as fish are not fully covered by detailed farm animal welfare regulations like those for terrestrial species.

8. Food Standards Agency

request-1339685-983f32d6@whatdotheyknow.com
The reply under FOI said this:
The veterinary Medicines Directorate (VMD) as delegated by the Department of Environment, Food and Rural Affairs, conducts the statutory surveillance programme (NSS) on products of animal origin (POAO) in-land within GB and NI, which tests for veterinary medicine residues and some chemical contaminants. This survey does include some farmed salmon samples. The results of which can be found in full here: Residues: Statutory Surveillance Results - GOV.UK.
https://www.gov.uk/government/collections/residues-statutory-and-non-statutory-surveillance-results

Any POAO samples from the NSS which are non-compliant for contaminants are referred to the FSA for risk assessment and risk management advice, if appropriate the FSA will then undertake a recall or withdrawal of the product from the market.

The FSA have conducted an ad hoc survey on some wild caught fish around GB waters, the latest published results are available here:
Contaminants Monitoring Programme for Wild Caught Fish, Crustaceans and Cephalopods | Published in FSA Research and Evidence,
please note however that wild caught salmon was not included in the 2022-23 survey.
https://science.food.gov.uk/article/127617-contaminants-monitoring-programme-for-wild-caught-fish-crustaceans-and-cephalopods

A research paper which could be associated includes, AMR in salmon fillets: Research projects | FSA Research and Evidence.

Please note, Food Business Operators are responsible for ensuring that the food they place on the market is safe and complies with General food law Assimilated (GB) regulation 178/2002.
They also must ensure that anything placed on the market must comply with any other relevant legislation such as Assimilated GB regulation 1881/2006 for contaminants and Assimilated GB regulation 396/2005 which sets out the maximum residue levels for pesticide residues.

Enforcement officers may undertake risk-based checks to ensure compliance with regulations

9. Natural resources Wales (NRW)
There are no farmed salmon farms in Wales so this set of information was not answered. However they provided this helpful information:
NRW can confirm that we have No salmon farms in Wales. Therefore Regulation 12(4)(a) Environmental Information Regulations (2004) applies. Information not held.
Linda Birr-Pixton
12 November 2025
Please find below the link to Welsh Governments contingency plan for Exotic Notifiable and Emerging Diseases of Aquatic Animals in England and Wales that may help with your above query. - This document is a joint framework contingency plan to respond effectively to an exotic notifiable or emerging disease outbreak in aquatic animals in England and Wales. It's a DEFRA and Welsh Government document.

https://www.gov.uk/government/publications/contingency-plan-for-exotic-notifiable-and-emerging-diseases-of-aquatic-animals-in-england-and-wales

10. SEPA
They have said their role is principally dealing with discharges into the water.
How this doesn't apply to thousands of farmed salmon is not answered.

https://www.whatdotheyknow.com/request/latest_analysis_of_testing_on_fa_3#incoming-3184547

11. Marine Scotland - name changed to Marine Directorate now

This organisation asked for clarification and was extremely helpful in providing information about the different agencies involved in the processes I identified in the FOI to them.

Authorisation and statutory planning consultation

When clarifying your request, reference was made to the Marine Directorate's role in authorisation, as well as the statutory planning process, two processes which are required to allow aquaculture sites to develop and undertake farming practices within Scotland.

Authorisation of aquaculture production businesses, in association with the Aquatic Animal Health (Scotland) Regulations 2009, is undertaken by the Marine Directorate's Fish Health Inspectorate (FHI). Details relating to this process and the reasons behind it are provided on our web site: Aquaculture Production Business (APB): forms and guidance - gov.scot

Within the Aquaculture Planning process, as detailed above in the response issued to parts **A** and **B** of your request, the Marine Directorate, on behalf of Scottish Ministers, undertakes the role as a statutory consultee. This feeds in to the wider planning process, and you can find out further details relating to this on the Scottish Government website: Fish farm consents - Aquaculture - gov.scot

However given the role the Marine Directorate plays in the whole process it was surprising and somewhat startling to read that they do NOT receive information with regards to elements that should and are tested e.g. by the Veterinary Medicines Directorate.

Under the Marine Licensing activity, as detailed above, we do not receive information on testing in relation to – the chemical analysis for contaminants; microplastic detection; pathogen and parasite testing; nutritional and compositional analysis; and biometric and welfare assessments. In addition, we do not see data or information on the conditions of farmed salmon and their management in relation to the following methods of testing: GC-MS, LC-MS, ICP-MS, FTIR, Raman spectroscopy, real-time PCR, IFAT, VI, NMR, scale microchemistry, and diode frame technology.

Aquatic animal health – pathogen and parasites

The Marine Directorate's FHI are responsible for the control of aquatic animal health throughout Scotland. Statutory control measures exist in relation to listed and emerging diseases in accordance with The Aquatic Animal Health (Scotland) Regulations 2009.

The regulation of sea lice *(Lepeophtheirus salmonis* and *Caligus elongatus*) is undertaken through the Aquaculture and Fisheries (Scotland) Act 2007 (as amended) and is aimed to ensure that satisfactory measures are in place to prevent, control and reduce sea lice on fish farms, for the health and welfare of the farmed fish.

You can find out further information on these areas through our website:

Information on aquatic animal health with respect to the FHI: Fish Health Inspectorate - gov.scot

Information on the regulation of sea lice: regulation-sea-lice.pdf

They did helpfully provide two links to the published statistics for some of the testing and processes I was asking for and the annual assessments they make:

https://marine.gov.scot/sma/assessment-theme/clean-and-safe

https://dome.ices.dk/ohat/?assessmentperiod=2026

They additionally named 3 other departments who were involved in some of the processes and two of them have already said they do not have any involvement:
SEPA
The Food Standards Agency.

Other government departments and agencies

Other government departments and agencies also have regulatory, monitoring and analysis roles relating to some of the subject areas within your request. In particular you may be interested in some of the activities associated with following:

The Veterinary Medicines Directorate (VMD) - Veterinary Medicines Directorate - GOV.UK

Marine Laboratory, 375 Victoria Road,
Aberdeen AB11 9DB
www.gov.scot/marine-and-fisheries/

The Scottish Environment Protection Agency (SEPA) - Home | Scottish Environment Protection Agency (SEPA)

Food Standards Scotland - The home of food and feed safety, and healthy eating | Food Standards Scotland

12. DAERA

DAERA replied that they did not hold the information

13 Agri-food and Biosciences Institute

The reply from this organisation addressed the licensing arrangements but did not address whether they saw any data and information on the conditions of the farmed salmon and their management.

Summary Conclusion

The investigation into the testing and monitoring of farmed salmon in the UK, prompted by an initial Freedom of Information (FOI) request to the Department for Environment, Food and Rural Affairs (DEFRA) in 2025, reveals a fragmented, devolved, and largely non-transparent regulatory landscape that appears designed to diffuse responsibility rather than deliver clear public accountability.

DEFRA, as the overarching department for England and with UK-wide policy and trade responsibilities, possesses the authority and remit to commission or oversee comprehensive environmental, contaminant, residue, pathogen, and welfare testing of farmed salmon through its executive agencies (e.g., CEFAS, APHA) and partners. However, when directly asked for the latest detailed analyses — including methods (GC-MS, LC-MS, real-time PCR, etc.) and results for persistent organic pollutants, heavy metals, PFAS, microplastics, antibiotic/pesticide residues, and other contaminants — DEFRA deflected the request to APHA, which claimed no such information was held, and subsequent internal review upheld this position. This response is particularly striking given that other bodies (notably the Veterinary Medicines Directorate, the Marine Directorate and, to a lesser extent, the Fish Health Inspectorate) do conduct or coordinate elements of the requested testing, especially residue surveillance using advanced analytical techniques.

FOI requests sent to over a dozen involved or potentially involved agencies (CEFAS, APHA, VMD, FSA, FHI, MMO, Environment Agency, SEPA, Marine Scotland, etc.) produced a consistent pattern:
- Most agencies rapidly denied holding the specific comprehensive or recent datasets requested, often stating the work “does not fall within our remit” (e.g., CEFAS) or redirecting elsewhere.
- Where testing does occur — primarily statutory residue surveillance for veterinary medicines and certain contaminants (coordinated by VMD with sampling in Scotland) and disease diagnostics (FHI) — results are published in aggregated annual reports dating back years, but detailed methodologies, raw data, and current farmed-salmon-specific findings for the full spectrum of concerns (microplastics, PFAS, endocrine disruptors, welfare biometrics, etc.) were not provided.
- Environmental regulators (SEPA, Environment Agency) focus narrowly on discharges or water quality rather than product/contaminant testing.
- Welfare oversight (Animal Welfare Committee) currently excludes detailed farmed-fish protocols from its active work plan.

In essence, while piecemeal testing undoubtedly takes place — driven by EU-derived retained law, trade requirements, and devolved Scottish regulation — no single UK body appears willing or able to produce a consolidated, up-to-date picture of farmed salmon safety and quality across the broad range of chemical, biological, and welfare parameters of legitimate public concern. The repeated deflection and narrow interpretation of FOI requests suggest a systemic reluctance to provide transparent, citizen-accessible evidence on an industry worth billions of pounds and raising well-documented environmental and health questions.

Until DEFRA or a lead agency is required (e.g., via the Information Commissioner or ministerial direction) to collate and publish a comprehensive, current report drawing together inputs from CEFAS, VMD, FHI, Marine Scotland, and others, the public is left with

fragmented, outdated, or inaccessible information — effectively shielding the farmed salmon sector from the level of scrutiny routinely applied to terrestrial livestock production.

This outcome falls short of the openness and accountability expected in a major food production system with known environmental impacts and potential human-health implications.

My concerns are following the most available option to the public i.e of using Freedom of Information requests to obtain clear, consolidated, up-to-date information on how farmed Atlantic salmon sold in the UK is actually tested for:

- chemical contaminants (POPs, heavy metals, PFAS, etc.)
- microplastics
- veterinary drug residues (antibiotics, sea-lice treatments)
- pathogens/parasites
- welfare indicators

and what the latest results are.

What emerges is deeply concerning on several levels:

1. Systemic fragmentation and diffusion of responsibility

Salmon farming is the UK's biggest food export (£1–2 billion/year), almost entirely produced in Scotland (devolved), yet regulated, monitored, and tested by a bewildering array of bodies: DEFRA, APHA, CEFAS, Fish Health Inspectorate, VMD, FSA, Marine Directorate, SEPA, etc.

Every single agency, when asked for the comprehensive picture, either says "not our remit" or points to someone else. No one accepts ownership of producing an integrated, public-facing report on the safety and quality of the final product that ends up on consumers' plates.

2. DEFRA's apparent abdication of leadership

DEFRA is the logical department to collate and publish an overview (especially post-Brexit when the UK regained competence over food-safety standards). Instead it immediately passed the FOI to APHA, which claimed it held nothing, and then upheld that position on internal review. This looks less like an honest "we don't hold it" and more like a deliberate bureaucratic hand-off to avoid accountability.

3. Testing that does exist is narrow, old, or not salmon-specific

- The Veterinary Medicines Directorate (VMD) does the main statutory residue surveillance. It tests a tiny number of salmon samples each year (often <20) for certain drug residues and contaminants using proper methods (LC-MS, GC-MS, ICP-MS, etc.). Results going back to 2011 are published annually, but they are aggregated and frequently several years out of date by the time they appear.
- Microplastics, PFAS, endocrine disruptors, dioxins/PCBs at the levels of recent scientific concern, and modern welfare biometric assessments are essentially not part of routine statutory surveillance.
- Disease diagnostics (real-time PCR, IFAT, etc.) are done by the Fish Health Inspectorate, but again only for notifiable/listed diseases, not broader pathogen loads or resistance profiles.

4. Transparency is far below the standard we expect for terrestrial meat

Chicken, pork, and beef have regular, detailed, publicly available reports on antibiotic use, residues, campylobacter levels, welfare outcome measures, etc. Farmed salmon — a £2 billion industry with well-documented environmental and potential human-health issues (high contaminant bioaccumulation, sea-lice chemical resistance, escapes, wild-salmon impacts) — has no equivalent consolidated public reporting.

5. Welfare oversight is effectively absent
The Animal Welfare Committee confirmed that detailed welfare standards or monitoring protocols for farmed fish are not currently in its active work plan. Fish remain the only major farmed animals in the UK without species-specific statutory welfare codes comparable to those for pigs or chickens.

My overall conclusion
There is no malicious conspiracy here, but there is a structural problem: the regulatory framework for UK farmed salmon was essentially inherited from EU days, patched after Brexit, and is now spread across devolved and UK-level bodies in such a way that no single entity has both the duty and the capacity to give citizens a straight, current answer to the question "***How safe and how humanely produced is the salmon I buy in the supermarket?"***

The repeated "we don't hold that information" or "not our remit" responses are technically compliant with the letter of FOI law, but they expose a transparency vacuum that is not acceptable for such a large food sector with known risks.

This is not just an access-to-information issue; it is a genuine public-health and animal-welfare governance gap.
What would fix it (in my view):

A single, annual "UK Farmed Salmon Safety & Welfare Report" published by DEFRA (or the Food Standards Agency) that pulls together:
- residue surveillance results (VMD)
- disease and parasite data (FHI/Marine Directorate)
- environmental contaminant data (where it exists)
- welfare indicators (stocking density, mortality, sea-lice levels, use of cleaner fish, etc.)
- sampling and analytical methods used

This is done routinely for poultry meat and eggs; there is no good reason it cannot be done for salmon.
Until that (or something equivalent) happens, the public is left with piecemeal, dated, and often inaccessible fragments — which is exactly what this report painfully demonstrates.

This is a textbook example of how devolution + departmental silos + narrow interpretation of FOI can combine to shield a powerful industry from the level of scrutiny that consumers have every right to expect.

Linda Birr-Pixton
Alliance for Cruelty Free Science.