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23 September 2025

Dear Finlay,

Scottish Government interim update on activities in response to the Rural Affairs and Islands Committee report on 'Salmon Farming in Scotland'

As I committed when I wrote to you on 13 March, I am providing an interim update on progress underway against the actions I set out. This represents 6 months of concentrated activity by Government, the sector and partners to plan and implement change across the wide range of opportunities and challenges explored by Committee, progress on which is vital to ensure the continued support and success of Scottish salmon.

I look forward to providing a further update to you in March 2026, one year on from the commitments I made in March 2025.

Yours sincerely,

MAIRI GOUGEON

Scottish Government Commitments

The report is structured around Annex A of the Scottish Government's response to the Committee's report, which summarises the commitments made. The full response is available here.

1. Updates to Rural Affairs and Islands Committee on external activity

- Publication of University of Glasgow report on cleanerfish, commissioned by Nature Scot
  - *NatureScot has published the report NatureScot Research Report 1207 - Assessing the implications of wrasse fishing for marine sites and features | NatureScot.*

- Publication of the Scottish Animal Welfare Commissions Report on 'Use of Cleanerfish in Salmon Farming'
  - *The Scottish Animal Welfare Commission, which is independent of Scottish Government, provides Scottish Ministers with recommendations based on scientific evidence and ethical considerations on animal welfare. It is finalising its report on the welfare of cleaner fish used in the Scottish salmon industry which will be published in the coming months.*

- Progress by SEPA on the objectives, monitoring framework and reporting requirements under SEPA's Sea Lice Risk Assessment Framework
  - *Please see the update provided under sub-heading **Environment – Discharges and Interactions with Wild Fish** below.*

- Publication of NASCO's state of the knowledge paper on sea lice and the risks to wild fish
  - *The funded study on the latest scientific knowledge on the impacts of sea lice and escaped farmed salmon on wild salmon will produce two reports going to two separate peer-reviewed journals. We are advised that both reports were due to be published this summer, however it is difficult to be definitive on expected timescales associated with the scientific peer review process which will govern the final timings.*

- Environmental Standards Scotland activity if an investigation on protections for wild salmon under SEPA's sea lice risk assessment framework is taken forward
  - *There is no change to the status reported in my March response to the Committee. Environmental Standards Scotland (ESS) continue to evaluate the representation received and we await a decision from them as to whether ESS will take any action. We will keep the Committee informed of any developments.*

- Commissioning and delivery if any projects to support potential use of eDNA monitoring work in Scotland for benthic assessment
  - *Please see the update provided under sub-heading **Science and Innovation** below.*

2. Commitments by Sub-Heading

I. Information Management and Data

- We will take forward work to explore how the presentation and accessibility of existing data collections can be improved. We acknowledge that Scotland's Aquaculture website requires modernisation and will work with partners to scope out how it can be refreshed to enhance transparency. We will take forward scoping work within **2025-26**, anticipating that implementation especially of the website will take longer

Progress update:

- *On 21 August SEPA launched an update in relation to Scotland's Aquaculture Website. The update will ensure that the website has secure infrastructure and that it is more intuitive and accessible for users. As well as a more user-friendly design and improved access to interactive maps and datasets, the refreshed site makes aquaculture data generated from regulators and the sector more accessible and meaningful, reflecting an ongoing commitment to transparency and environmental protection.*

- *SEPA have secured funding from the Scottish Government Public Sector Reform Invest to Save Fund to undertake scoping work for the design and delivery of a digital platform to support efficient, effective and transparent marine fish farm regulation, including the roll out of streamlined and integrated consenting and modernised access to comprehensive multi-agency information about aquaculture in Scotland. This project will particularly focus on the touch points between regulators and the publication of the outputs of the consenting process.*

- *SEPA are also working on the development of a new Environmental Performance Assessment Scheme. This will result in the publication of all compliance data, with all stakeholders able to track compliance on a site-by-site basis for all authorised activities, including finfish aquaculture activities. An initial consultation has just been completed, and a consultation report is planned for publication in the Autumn.*

- *Building on SEPA's recent website upgrade and with Scotland's Aquaculture Website partners, we will continue to identify updates to the website content that improve signposting and explanations in relation to a number of aquaculture datasets, enhancing useability and transparency. We will prioritise improvements on the range of publicly available farmed fish mortality datasets.*

II. Fish Health, Welfare and Cleanerfish

Mortality analysis

- We will work to analyse mortality data, exploring thresholds for 'persistently high mortality' and whether fish farms with 'persistently high mortality' exist [**2025/2026**]

Progress update:

- *We have developed a robust analytical framework to determine whether there is 'persistently high mortality' at Scottish production sites. The framework employs*

qualified parameters for 'elevated', 'recurrent' and 'persistent' mortality to design a modelling approach that can help identify sites that potentially show 'persistent elevated mortality'. ***Annex A*** *provides further information on the approach to the analysis.*

- *Quality assurance is being undertaken on the preliminary analytical model with a view to generating initial results later this year. Where there are sites screened as having 'persistent elevated mortality' under the analytical framework, we will engage with those operators to explore what actions are already taken by producers to prevent issues causing mortality persisting from year to year.*

- *By Spring 2026 we will provide a project report the Rural Affairs and Islands Committee detailing both the finalised methods, the results of analysis, and the planned Scottish Government response to these.*

Welfare standards

- We will undertake an analysis of options, including statutory and other alternatives, to understand how welfare standards can best be supported. We expect this options appraisal to be completed ahead of the proposed September update to the Committee, and we will set out next steps at that point. [**2025/2026**]

Progress update:

- *A number of options for progressing standards of farmed fish welfare have been explored. Following this review, we intend to introduce official guidance under Section 38 of the Animal Health and Welfare (Scotland) Act 2006 as a pragmatic step in the progression of farmed fish welfare standards. The guidance will apply to all fish species farmed, and used, in Scottish finfish production and we will work in partnership with the sector and stakeholders to produce guidance which is both robust and workable. This will complement the guidance introduced in July regarding fish welfare at the time of killing.*

Cleanerfish

- We have commissioned Sea Fish Industry Authority to undertake initial scoping work to help inform our approach to non-quota species (which includes Wrasse) FMPs in Scotland. We will consider the outputs of any forthcoming advice in **2026**

- We will deliver a Fisheries Assessment (Habitat Regulation Appraisal and Appropriate Assessment) prior to May **2025 fishery** (opening of the fishery)

Progress update:

- *Our work with the Sea Fish Industry Authority (Seafish) is ongoing and we will consider the outputs of their current scoping work on non-quota Fisheries Management Plans in 2026.*

- *We completed a Fisheries Assessment prior to opening the 2025 wrasse fishery. The Fisheries Assessment and associated advice from NatureScot is published on the Scottish Government website Supporting documents - Inshore waters - regulated commercial use of traps/pots to catch wrasse: fisheries assessment - gov.scot. New spatial management measures for the fishery have been introduced, including a*

general prohibition on wrasse fishing activity within relevant Special Areas of Conservation protected for the reef feature.

III. Science and Innovation

- We will continue to engage with the Farmed Fish Health Framework Steering Group, the Marine Association for Science and Technology and the Sustainable Aquaculture Innovation Centre to provide direction and focus to ongoing research programmes [**2025/2026 and beyond**]

- We will also engage with the Chief Scientific Advisor (Marine), Professor Mark Inall, to ensure aquaculture priorities are factored into the strategic approaches to marine science under his leadership, including through implementation of our Marine Science and Innovation Strategy, and publication of an Areas of Research Interest Paper to identify and enable research priorities and knowledge transfer to key communities of interest [**2025/2026**]

Progress update:

- *Work continues embedding aquaculture priorities into our strategic approaches to marine and freshwater science. We have published an Areas of Research Interest (ARI) paper which communicates the most important research priorities in marine and freshwater science, alongside the Science, Evidence, Data and Digital Portfolio Annual Report for 2024-25 on 20 August 2025. The ARIs are intended to support collaboration and provide the evidence for policy development – a number have been developed for aquaculture which includes, but are not limited to; aquaculture production, fish health and welfare, and environmental monitoring.*

- *We will build on our aquaculture ARIs by working with the Marine Alliance for Science and Technology Scotland (MASTS), the Sustainable Aquaculture Innovation Centre (SAIC) and other interested parties to facilitate knowledge exchange in priority areas across key communities of interest. The aim is to support the development of coherent research programmes that are led by the academic and salmon producer communities.*

Marine Fund Scotland

- We will continue to support projects which deliver on our blue economy objectives, including through the Marine Fund Scotland, including projects such as work to progress eDNA benthic sampling **[ongoing]**

Progress update:

- *The Marine Fund Scotland 2025/26 closed for applications in July; there has been strong demand for funds and officials are currently assessing bids. Awards will be announced later in the autumn.*

- *There has been strong demand from the finfish sector, both for capital investment, innovation and research. This continued high demand reinforces the need for the UK Government to recognise the value and importance of Scotland's marine sectors and provide a multi-year funding settlement which reflects this and is comparable to what we would have received as an EU member.*

- *SEPA, in collaboration with the finfish sector and others, have developed and adopted an initial DNA approach to assess seabed impacts. This is in place and is being used as an initial screening approach in terms of verifying/ auditing compliance. A further research project in terms of DNA is now complete, and the output is currently being reviewed for adoption. This will develop a more refined/improved method which would be more widely applicable.*

Innovation

- Deliver a new coordination structure for aquaculture innovation in Scotland beyond the Sustainable Aquaculture Innovation Centre transition period **[2026]**, taking further discussion on innovation sites with the sector and others when this innovation vehicle is ready **[2027/2028]**

Progress update:

- *We have made significant progress on developing a new coordination structure for aquaculture innovation to continue over the long term the work of the Sustainable Aquaculture Innovation Centre. We are working with stakeholders to agree details for a new, independent entity to operate from April 2026 and we expect to announce these new arrangements in the near future.*

Use of biomarkers

- Officials will engage with the salmon farming sector to determine whether sector led voluntary biomarker databases are appropriate for Scotland **[2026/27]**

Progress update:

- *Ongoing and will be explored further in 2026/2027.*

IV. Environment – Discharges and Interactions with Wild Fish

Emamectin Benzoate

- SEPA will introduce the new Environmental Quality Standard for Emamectin Benzoate by **June 2028**

Progress update:

- *SEPA have taken account of the most up to date science and have had an interim standard in place since 2019. All new and significant changes to emamectin benzoate discharges since then have been permitted in accordance with the interim position. In response to the Scottish Government direction to adopt the new emamectin benzoate standard, SEPA are committed to review all permits for existing operations to ensure that all sites are required to operate under the new standard by June 2028.*

SEPA Sea Lice Risk Assessment Framework

- Scottish Government will continue to work with SEPA and the sector to support development of the monitoring strategy underpinning SEPA's Sea Lice Risk Assessment Framework (including introduction of sentinel cage monitoring in **2025**)

and to manage the transition of governance of this issue under existing local authority Environmental Management Plans by **the end of 2025**. Scottish Government will publish updated working arrangements guidance for fish farm developments by the **end of 2025**

Progress update:

- *SEPA has carried out a risk-assessment across all sites and varied the permits for all existing marine pen fish farm operations. These variations include conditions relating to impacts of sea lice on wild fish requiring monitoring across all operations and "standstill" conditions in terms of sea lice numbers on those sites that have been identified as having the highest relative risk. As noted in my March response, these variations have been appealed by the operators and will not come into force until the appeals[1] process is complete.*

- *The finfish aquaculture sector in collaboration with SEPA have completed the first set of pilots for monitoring sentinel pens to test sea lice dispersions models (Spring 2025). The results from the monitoring are currently being collated and assessed.*

- *SEPA has consulted on and now adopted a new charging scheme in relation to monitoring impacts of sea lice from marine pen fish farms. This has allowed the development and implementation of an initial programme of sea trout monitoring on the west coast, Western Isles and Orkney in 2025.*

- *SEPA are in the process of developing a larger ongoing national programme of monitoring that will commence in 2026. This will replace the requirements for operators to monitor wild fish impacts from sea lice from farmed fish under the Environmental Management Plans (EMPs) set out under the relevant planning conditions. SEPA will work with Local Authorities over the coming months to ensure that wild fish monitoring EMPs relating to impacts from sea lice from farmed fish are phased out, as that wider ongoing plan comes in to effect in 2026.*

- *Work is ongoing to review and update the working arrangements guidance for fish farm developments.*

Fish farm escapes

- We will prioritise progress on financial penalties for fish farm escapes in **2026/2027**, and a revised technical standard for finfish escapes in **2027/2028**

Progress update:

- *We have committed to prioritise progress on penalties for fish farm escapes in 2026/2027, however some initial scoping work has commenced to consider options for the introduction of penalties.*

[1] The Scottish Government Planning and Environmental Appeals Division has received 260 appeals relating to SEPA's sea lice risk assessment framework.

V. Spatial Planning, Consenting and Community Benefit

Consenting Process Streamlining

- Following consideration of the independent evaluation (expected **April 2025**), deliver improvements to the fish farm consenting process through our Consenting Task Group, including prioritising discussion and coordination of regulatory activities and resources which could support the salmon farming sector to consolidate and relocate biomass [in phases, **2025/ 2026** and **2026/2027**]

- Beyond updates to reflect SEPA's role as the lead body responsible for managing the risk to wild salmonids from sea lice (**by end of 2025**), we will support ongoing review and updates to our working arrangements guidance to reflect, for example, implementation of improvements to consenting delivered by the Consenting Task Group and consideration of the inclusion of precautionary principles consenting case studies **[aim for first CTG related updates by Spring 2026, with ongoing review and update thereafter]**

Progress update:

- *The independent evaluation of the fish farm consenting pre-application pilots was published on 29 July 2025. The report identified the benefits of the aligned approach to pre-application introduced by the pilot process, but outlined ten recommendations to further improve the efficiency and transparency.*

- *Work is now underway to take forward the recommendations of the evaluation report. Our developing work plan will also incorporate two priority areas previously identified by the Consenting Task Group. This includes (i) considering the opportunities to coordinate the formal application process, with businesses, regulators and statutory consultees, and progressing on the outputs of a workshop on this which was held on 11 June 2025, and (ii) consideration of Environmental Impact Assessment (EIA) and Habitats Regulations Appraisal (HRA) processes, again seeking to identify potential opportunities to streamline those aspects of the consenting process.*

- *We plan to develop the coordinated pre-application process further and broaden out testing to additional local authority areas. We are currently considering the different kinds of support and coordination which might be suitable for different projects across the entirety of the consenting process. Ambitious and innovative projects, in line with our Vision for Sustainable Aquaculture, are a priority.*

- *Following the recommendations of the independent evaluation report and the lessons learned this year, we're now working to consider what a broader offering beyond these activities might look like, including how requests might be prioritised and the resource required to do so.*

- *To inform our approach, officials have been liaising with fish farming businesses to better understand likely development plans across Scotland over the medium term to help identify where additional support to coordinate consenting activities may be of benefit.*

- *Our intention remains that Scottish Government's working arrangements guidance should be regularly reviewed and updated to recognise the latest consenting arrangements, for example, introduced for 3-12 nautical miles or processes*

developed by the Consenting Task Group as they are agreed and implemented. We will consider the potential inclusion of case studies showing practical case studies of the precautionary principle in action in the second half of this year.

3-12 Nautical Mile Consenting

- To support the sector's development in more exposed and 'offshore' waters, we will respond to the recent planning consultation [April 2025] which sought views on extending local authority planning controls and the relevant marine planning zones to 12 nm and we will take forward work to clarify the broader regulatory framework in 2025/2026

Progress update:

- *The Town and Country Planning (Marine Fish Farming) (Scotland) Amendment Order 2025 was introduced on 18 June 2025. This ensures a consistency in approach to aquaculture planning regulations across the 0-12 nautical mile zone, by identifying relevant local planning authorities as the responsible body for assessing and determining fish and shellfish farm planning applications out to 12 nautical miles.*

- *As members will be aware, the Order resolved a gap in aquaculture planning regulations, where development between 3-12 nautical miles requires local authority planning consent, but marine planning zones previously only extended to 3 nautical miles. By aligning marine planning zone boundaries with the definition of 'development' for fish farming under The Town and Country Planning (Scotland) 1997 Act, applications for development of fish and shellfish farms located between 3 and 12 nautical miles will be able to be submitted to a relevant planning authority for assessment and decision.*

- *The extension to marine planning zones will also ensure consistency in planning requirements for fish farm developments within the 0-12 nautical mile zone across Scotland, continuing local authorities' role in the consenting process and enabling input into the planning process from a wide range of stakeholders.*

- *Work is now underway to clarify the responsible authority for fish farm environmental discharges between 3-12 nautical miles. A public consultation on proposals to identify SEPA as the responsible authority for this activity is due be launched in September 2025.*

Spatial Planning

- We will explore, through the development of National Marine Plan 2, a commitment to bring the range of management measures and spatial constraints data for salmon farming into one place beyond the expected adoption of the plan in **2027**, in addition to continued progress of our Regional Marine Plan programme. Further, we will explore support for 'relocation' of salmon farms through the development of NMP 2 and how it can work to underpin adaptive management approaches

Progress update:

- *Aquaculture policy officials are in regular engagement with NMP2 policy leads regarding aquaculture polices within NMP2.*

- *We are taking time to consider the helpful and varied feedback received during the NMP2 Planning Position Statement (PPS) consultation, which closed in the Spring. Only by listening to the people who use or rely on Scotland's seas can we better understand their needs and create a new plan that works well for the people of Scotland.*

- *We have made the decision to postpone the upcoming consultation on a draft NMP2 to allow for further consideration of the feedback received during the Planning Position Statement (PPS) consultation and our approach to NMP2. An update on anticipated timing will be communicated in due course.*

- *The policy development and statutory assessments for NMP2 are ongoing and will continue to be supported by a programme of engagement opportunities.*

- *Following our gateway review of the Regional Marine Plans (RMPs) and our formal response to the Environment, Climate Change and Land Reform (ECCLR) Committee, officials are working closely with the relevant partnerships to refine the draft RMPs and progress each to the next stage. This includes the intention to seek approval of the Scottish Ministers for adoption of the Shetland and Orkney RMPs within this financial year.*

Community Benefit

- We will commence scoping work on a community benefit package in 2025/2026, which could be progressed beyond the planned fish farm rent uplift planned in 2026

Progress update:

- *We have commenced scoping work on a community benefit package, which could be progressed beyond the planned fish farm rent uplift planned in 2026.*

Annex A: Persistent Elevated Mortality in salmon farming in Scotland - Methodological approach

Introduction and background

In the RAIC's report on its follow-on enquiry (17 January 2025) it noted concerns on the levels of mortality in Scottish salmon production and made the following recommendation:

The Committee recommends, therefore, the Scottish Government provide powers to the Fish Health Inspectorate (or another appropriate body) to limit or halt production at sites which record persistent high mortality rates.

The Scottish Government committed to analyse existing mortality data in its response (13 March 2025), exploring thresholds for 'persistently high mortality' and to whether fish farms with 'persistently high mortality' exist. This annex provides an overview of the methodological development that has taken place over summer 2025 with a view to finalising the initial analysis later this year.

Methodological approach

To ascertain if any individual sites have experienced 'persistent high mortality' a robust, objective and reproducible analytical framework was developed to analyse available datasets.

The focus of this work is on marine sites where there are existing datasets. The Scottish Environment Protection Agency's (SEPA) monthly biomass and mortality reports (2003–2024) were employed for the analysis given the volume of information available at site level. Salmon Scotland monthly survival rates (2018–2024) and reports provided to Scottish Government Marine Directorate's (SGMD) Fish Health Inspectorate (FHI) were also integrated with the SEPA data as they provide detail on mortality cause and also ensure appropriate verification of outputs.

The novel model is designed in two stages, first identifying instances of 'elevated' and 'recurrent' mortality in the dataset using analytical methods. Secondly, applying an Artificial Intelligence (AI) based large language model to categorise causes in the data to allow the model, with input from the professional expertise of the FHI, to determine if the 'recurrent elevated mortality' events were due to related causes and, therefore, if they are regarded as 'persistent', based on the available data.

Defining terms and undertaking screening

This process required 'elevated', 'recurrent' and 'persistent' mortality to be defined and then analytically identified. These definitions are described below and form part of sequential screening process that excludes site mortality data out with the qualifying parameters and ultimately aims to highlight production sites that may have experienced 'persistent elevated mortality'. That is the basis of the preliminary method development described below to complete the analysis. The full summarised process is noted in Figure 1.

Elevated mortality

Mortality is deemed to be **'Elevated'** when it exceeds levels widely observed by farming Atlantic Salmon in Scotland. By exploring trends and average levels of mortality within SEPA's mortality dataset, we adopted an analytical approach that focuses on elevated

mortality levels that it could, in practice, point towards production challenges such as unfavourable environmental conditions.

Percentiles are measures used in statistics to show the position of a value within a dataset. The analysis focuses on the 95th percentile (5.68% monthly mortality) of the (i.e. the largest 5% of monthly mortality values) as the boundary for screening out 'elevated' mortality events and associated production sites for further analysis. This screening is applied to mortality data between 2018 and 2024 where there is corresponding data on mortality cause.

Recurrent mortality

Recurrence of mortality is defined as repeated **elevated** mortality events on the same site, irrespective of cause. Mortality is recurrent at a site where it is 1) consecutively elevated over a 2-month period **and** 2) two or more consecutive stocking cycles[2].

Persistent mortality

Persistent mortality is defined as the reoccurrence of mortality through the **same causal factors.** Factors causing mortality may be out of the control of the site management, or controllable but continued despite attempts to improve conditions, mitigate or eliminate the issue.

Establishing and assuring 'persistence'

Sites showing **recurrent** mortality are analysed alongside the mortality cause to determine if mortality is persistent (i.e. assess if the cause is the same). To do this systematically, a Large Language Model[3] was developed to categorise mortality causes reported to SGMD. This analysed the free text information contained within SGMD returns to group mortality into cause categories. Mortality causes are wide ranging and complex and this novel approach aids standardisation of causes into several broad categories. The model can then robustly analyse the categories associated with the 'recurrent elevated' mortality and identify sites with related grouped causes. Where model outputs flag potential persistence based on grouped causes, these are then assessed by FHI to determine if the same individual cause(s) is the reason for the recurring mortality. Thus, the model identifies potential persistent mortality from the available data and serves as a tool to direct effort into exploring individual cases at the site level.

This part of the process is currently being validated by the Fish Health Inspectorate (FHI) and Marine Directorate analysts. Data Quality Assurance and Quality Control by the Scottish Government is needed and will aid the accuracy outputs and ensure integrity of the model outputs, prior to generating outputs.

Understanding persistence under 'real world' conditions

To understand if sites screened as showing persistent elevated mortality through the quantitative approach described truly *are* persistent, discussions with site operators will be undertaken to provide additional context around the mortality experienced at these sites and mitigating actions taken by operators. Combined with the objective expertise of the Fish Health Inspectorate, this will enable a qualitative and consistent determination of whether a site truly has exhibited persistent elevated mortality.

[2] A stocking cycle is when a site is stocked with fish and grown onto harvest or transfer

[3] A Large Language Model (LLM) is a type of computer programme that is trained on huge amounts of text so it can understand and generate human-like language.

Next steps

The Scottish Government will continue working at pace to deliver this analysis, including:

- Model validation and development with further Quality Assurance and Quality Control. Marine directorate scientists will submit a methods development paper through the peer review process this year, seeking to apply the highest academic scrutiny to the method.
- Upon completion of model validation, outputs will be generated and sites screened as potentially exhibiting persistent elevated mortality will be taken forward for 'ground truthing' with the FHI and producers.
- By Spring 2026 we will provide a full project report to the Rural Affairs and Islands Committee detailing both the finalised methods, the results of analysis, and the planned Scottish Government's response to these.

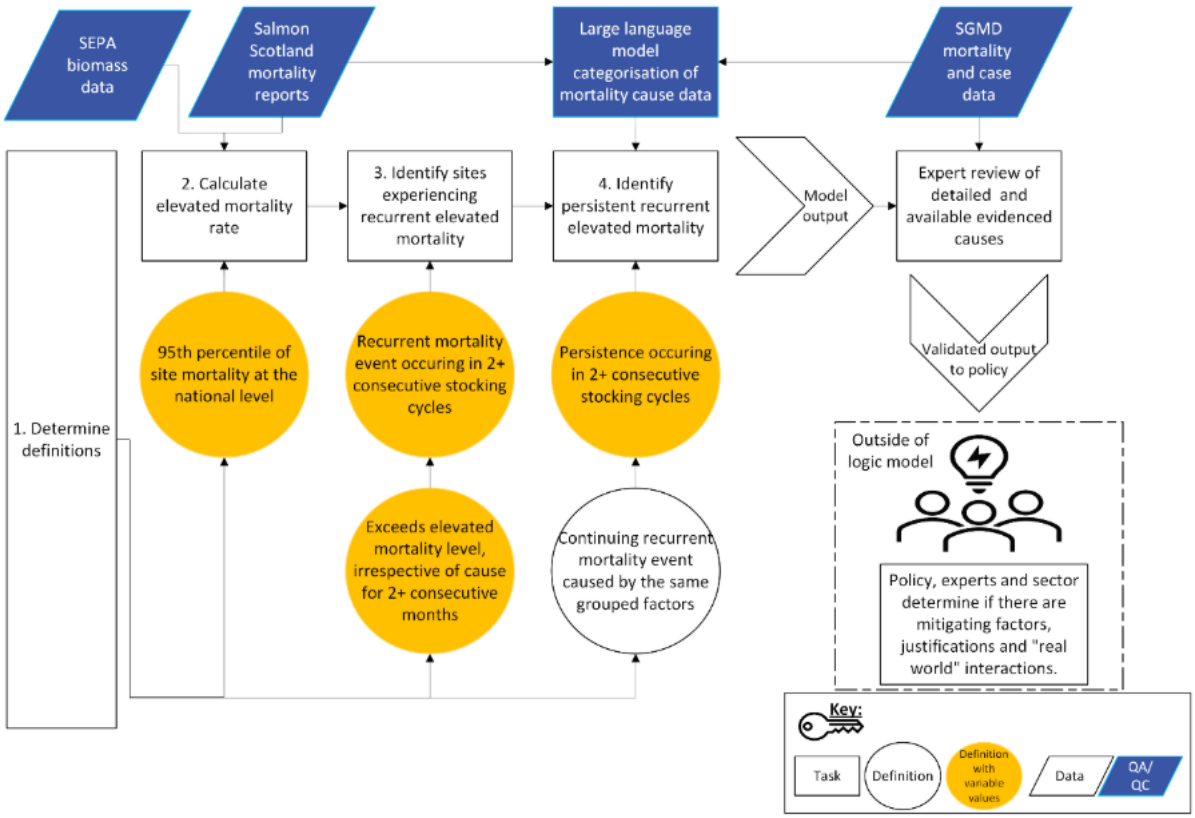

Figure 1. Process flow chart of persistent elevated mortality model, including different data sources, proposed definitions, through analysis to expert review and finally policy advice.