Willow House Kestrel View, Bellshill, ML4 3NJ
01698 534630

Cooke Aquaculture Scotland

Sea Lice Risk Framework Consultation Response
September 2023

Executive Summary

Cooke Aquaculture Scotland Ltd (CAS) operates a significant number of marine salmon farms in the Northern Isles of Scotland. Our response to the proposed Sea Lice Risk Framework consultation follows this summary. Our key points of concern are summarised below:

- No robust, up to date baseline data on wild salmonid abundance, behaviour or distribution currently exists for the Northern Isles of Scotland. An extensive baseline data collection study is required before any sea trout specific framework can be implemented.
- We do not support the current SLRF proposals as we believe SEPA have failed to demonstrate that the presence of fish farms pose significant environmental harm to wild salmonids.
- The proposed framework is disproportionate given the wide range of known (and more significant) pressures on wild salmonids, for which no equivalent frameworks are in development.
- SEPA's proposed modelling approach is incomplete and unable to accurately assess hypothesised risks arising from the presence of fish farms. The implementation of the framework should be delayed until robust models have been developed in a wide scale collaborative approach. This should be delivered through appropriately scaled pilot studies, with suitable model development, relevant data collection, and with robust underpinning model validation and calibration.
- SEPA have not proposed how the ultimate success or failure (and therefore continuing justification of the framework) is to be evaluated. It is not appropriate to introduce the SLRF if it cannot be demonstrated that it is a) needed or b) effective, in protecting against the activity covered by a CAR licence.
- The SLRF as currently proposed prioritises the health and welfare of wild salmonids over farmed animals. It also introduces a legal conflict in this respect which does not exist at present.
- SEPA needs to urgently clarify the situation regarding Environmental Management Plans (EMPs) for wild salmonids and if/when the SLRF will supersede EMPs.
- We object to operators being subject to non-compliances going forward through circumstances out with their control. An example we've highlighted is being unable to conduct a weekly lice count due to adverse weather conditions.
- We do not agree with SEPA's assessment of the potential implications of the SLRF on the economy, environment, and communities.
- We believe SEPA's timescales for the introduction of both the SLRF and a sea trout specific framework for the Northern Isles to be overly ambitious. A significant body of work in terms of model development and baseline data collection is urgently required prior to the implementation of any such framework.

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1. Introduction

Cooke Aquaculture Scotland Ltd (CAS) operate a significant number of marine salmon farms across the Northern Isles of Scotland. We are one of the most significant employers and sources of private investment in some of the most fragile island areas in Scotland. The Scottish Environment Protection Agency (SEPA) have requested stakeholder feedback on the proposed Sea Lice Risk framework (SLRF) will be applied through the Water Environment (Controlled Activities) (Scotland) Regulations 2011. This response consists of two parts:

1. Summary of key feedback on the proposed framework
2. Appendix containing answers to specific consultation questions posed by SEPA

2. Northern Isles and Sea Trout

CAS only operates marine fish farms in the Northern Isles of Scotland. We note that the current proposals do not include the Northern Isles owing to a lack of baseline information, reliable hydrodynamic models, or the presence of a significant population of wild salmon. SEPA have however committed to the introduction of a similar framework which is specific to sea trout (and would apply to the Northern Isles) as soon as is practicable.

In contrast to the West Coast and Western Isles of Scotland, there is an almost complete absence of data on sea trout abundance, population health, behaviour and distribution. CAS insist therefore that such a framework would have no scientific justification until such a time as a spatially and temporally extensive baseline data collection programme has taken place within the Northern Isles.

Such a study would need to be collaborative, but would require significant funding from public bodies in order to be comprehensive in terms of providing robust and reliable underpinning data upon which to formulate a sea trout specific framework in due course. We recommend that three full years of data would be required as a minimum in order to at least partially account for interannual variability in sea trout populations. This study should also provide information regarding the full range of pressures on sea trout in the Northern Isles and so would include, for example, terrestrial habitat survey and assessment of habitat condition.

CAS propose that SEPA urgently initiate such a monitoring study. Given that multiple years of baseline data would be required in order to inform the development of a sea trout specific framework, it would seem logical to defer the proposed implementation of a sea trout framework until a suitably robust framework for the protection of wild salmon on the West Coast and Western Isles has been developed and fully implemented.

3. Evidence of Significant Impacts on Wild Salmonids

CAS do not believe there is sufficient scientific evidence to support the claim that salmon farming is having a significant impact on wild salmonids in Scotland. The proposed framework is due to be implemented under the auspices of the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR). These regulations apply to any activity which is likely to have a significant adverse impact on the water environment.

We are unaware of any scientific research which quantifies and demonstrates direct impacts at a population level arising from salmon farms on wild salmonids in Scotland. Furthermore we are unaware of any studies which are able to distinguish between the potential impacts of aquaculture and all of the other pressures on wild salmonids within the marine environment.

SEPA's current proposals use highly precautionary screening models (by SEPA's own admission) to deliver an initial assessment of relative risk. CAS does not consider this to be a proportionate use of the precautionary principle.

4. Proportionality

In our previous consultation responses and engagement sessions with SEPA, CAS has consistently highlighted the disproportionate nature of the proposed framework relative to the wide range of proven impacts on wild salmonids.

The Scottish Government (2019) has identified 12 high level pressures which are thought to be impacting salmon in Scottish waters and beyond. These pressures are identified as:

- Exploitation
- Predation / Competition
- Fish Health
- Genetic Introgression
- Invasive non-native Species
- Habitat - Water Quality
- Habitat – Water Quantity
- Habitat – Thermal
- Habitat – Instream
- Habitat – Riparian
- Barriers to Migration
- Coastal and Marine

Within the 12 high level pressures identified, sea lice constitute only 1 of 3 separate components of the 'Fish Health' pressure (noting that sea lice are not considered to be a high level pressure in their own right). It is evident that Habitat is the most significant factor affecting wild salmon survival as there are 5 habitat specific high level pressures. It is also evident that some pressures are intrinsically more significant and quantifiable than others. Barriers to migration is a notable example in so much as without appropriate mitigation, such barriers have the potential to completely sterilize certain river systems in terms of salmon reproduction.

CAS is unaware of any equivalent frameworks which are currently in development to address the overwhelming majority of known impacts on wild salmonid populations which aren't associated with fish farming.

Within the SLRF consultation document, SEPA makes reference to the core objectives of the Scottish Wild Salmon Strategy[1] as well as the 2023 - 2028 implementation plan for the wild salmon strategy[2]. The implementation plan outlines a number of holistic actions which are proposed in order to

[1] https://www.gov.scot/publications/scottish-wild-salmon-strategy/pages/2/
[2] https://www.gov.scot/publications/wild-salmon-strategy-implementation-plan-2023-2028/pages/8/

reverse the decline in wild salmon populations in Scotland. The actions are divided into key themes as follows:

1. Improving the condition of rivers and giving salmon free access to cold, clean water – **27 actions**
2. Managing exploitation through effective regulation, deterrents and enforcement – **6 actions**
3. Understanding and mitigating pressures in the marine and coastal environment – **9 actions**
4. Making a positive contribution through international collaborations – **8 actions**
5. Developing a modernised and fit for purpose policy framework – **1 action**

In total there are 51 actions in the implementation plan. The most significant by far are actions to improve terrestrial habitats, which make up more than half of all proposed actions. The management of exploitation by anglers (both legally and illegally) is also a significant workstream with 6 proposed actions. In terms of aquaculture – there are just 4 actions (3.5, 3.6, 3.7 and 3.9) of which only 3.6 specifically mentions sea lice or indeed the proposed SLRF.

This further highlights how the farmed salmon sector is being disproportionately targeted and affected by policy interventions when other pressures on Scotland's wild salmon population are known (and repeatedly expressed by the Government) to be of significantly more significance than postulated indirect effects of lice transfer from farmed fish in the marine environment.

The initial work presented in this consultation has highlighted that the majority of aquaculture farms are shown to have low risk to wild fish population (even when using a highly conservative model). It stands to reason that the proposed SLRF will therefore have limited effect in restoring wild fish populations. This reenforces the need for a proportionate approach, where other pressures are assessed to determine where the most appropriate action is required.

5. Modelling Approach

CAS believes that SEPAs currently proposed modelling approach is incomplete and does not accurately assess theoretical risks associated with fish farms at a level which is suitable for consenting purposes.

The current proposals do not provide any clarity on the further modelling approaches which would be required in the event screening modelling indicates high relative risk. This is a significant omission in terms of uncertainty for developers as well as interested stakeholders. Some clarity in terms of potential approaches to detailed modelling should be urgently provided.

The screening model is also incomplete. As specified in the consultation there are 3 aspects to modelling risk to wild salmon, a three-dimensional hydrodynamic model, a particle tracking model and an exposure-based model. Currently the 3rd part, the virtual post smolt track, has only been completed for 2 proposed WSPZ. A simplified interim approach has been proposed using lice concentrations to fill in the gaps where virtual post smolt track models are not currently complete. This is a rushed approach with no scientific data supporting any validation of the interim approach, and is suggestive of SEPA working towards politically motivated timeframes in direct conflict with recognised best practice.

The current modelling approach is also significantly over-precautionary. Virtual salmon post smolt tracks are very basic and often conservative, especially where rivers enter the protection zones midway along a sea loch boundary. Similarly, SEPA admit that the present screening model

overestimate sea lice by as much as 4-5 times real world conditions. This is because all farms within proposed WSPZs are assumed to be at maximum biomass during the sensitive period of the year (which is extremely unlikely to ever occur in practice).

The accuracy of the existing (3D adapted) screening models is also highly spatially variable, leading to questions on the validity in some parts. As this underpins the particle tracking model, in some areas this may lead to a level of accuracy that is not acceptable. These regions should be highlighted so operators and non-industry stakeholders are aware of the limitations for the SEPA adapted models. Additionally, there is a complete lack of suitable screening models for the Northern Isles, making any risk assessment in these areas impossible.

Once the framework is implemented it may become apparent that changes are required. We would request that any such changes must be communicated in advance to relevant stakeholders in a transparent manner.

Within the breakdown of the modelling requirements which developers will need to adhere to, there is a suggestion that sea lice data from other developers will be needed to accurately model the necessary outputs for a development application. There is no explanation of the requirement for developers currently existing in a multi-developer operated area, where a new development is being investigated. It can be concluded that all operators/developers would need to supply data for an accurate model to be performed. This is not proportionate towards any operator who is not involved with a development. CAS requests clarity from SEPA on how data sharing between competing commercial operators in multi-operator areas is to be managed.

6. Evaluation of success or failure of the proposed framework

SEPA have not proposed how the ultimate success or failure (and therefore continuing justification of the framework) is to be evaluated. It is not appropriate to introduce the SLRF if it cannot be demonstrated that it is a) needed or b) effective, in protecting against the activity covered by a CAR licence.

It is the opinion of CAS that the currently proposed framework shouldn't be implemented until such a time as SEPA have developed a comprehensive, collaborative programme of environmental monitoring which will answer the higher level question of whether or not the SLRF is achieving its stated aims. SEPA must also commit to a specific timeframe for reviews of the framework and its continuing effectiveness. Some example issues of concern and suggestions for inclusion within a comprehensive environmental monitoring programme are outlined below:

- An environmental monitoring programme should focus on the assessment of baseline lice loading in the environment in the absence of fish farming activity.
- SEPA need to outline how environmental monitoring will distinguish impacts from fish farms against those arising from other pressures.
- SEPA state in the consultation document that they are not planning to commission or fund any environmental monitoring programmes in relation to the SLRF. CAS is of the firm belief that SEPA (as the soon to be responsible agency for wild salmonids in Scotland) needs to undertake and fund an extensive environmental monitoring programme which would aim to determine the effectiveness of the framework post implementation.

System performance reviews of the SLRF should be undertaken at regular intervals. A specific focus in this regard should be the appropriateness of the Norwegian mortality thresholds (in a Scottish context) as well as continual evaluation of the actual quantified impacts of fish farms on wild salmonids. If these impacts are either non-existent or of significantly lower magnitude than currently considered then the framework must reflect this. Any changes to fundamental framework parameters (such as mortality thresholds) must be publicised and consulted upon in advance before being changed.

7. Fish health and welfare concerns

The sole aim of the proposed framework is to attempt to protect the health and welfare of wild salmonids through a currently unquantified modelling approach. There is no consideration within the SLRF of the potential fish health and welfare concerns associated with additional treatments which would undoubtedly be required to maintain compliance with proposed lice permit conditions at sites with higher relative risk.

Any decision to treat animals is only taken following expert consideration by veterinarians of whether the clinical imperative outweighs any potential threat to health and welfare caused by the handling and treatment process. The introduction of the SLRF will place an additional pressure on fish health professionals to maintain lower lice burdens during sensitive periods. In such cases veterinarians will have to weigh up actual quantified risks to significant numbers of farmed animals against theorised and as yet unproven indirect risks to wild salmonids.

The introduction of the SLRF will undoubtedly lead to a conflict of law with the Animal Health and Welfare (Scotland) Act 2006. This is primary legislation which places an unambiguous and direct responsibility on fish farmers and health professionals to safeguard the health and welfare of animals under their care. Circumstances may therefore arise where a farmer must choose whether to contravene a piece of primary legislation, designed to protect the health and welfare of their stock, or conditions within a CAR licence which have been set based on unvalidated modelling.

SEPA have stated that some discretion will exist in terms of situations where an operator has had to prioritise fish health and welfare over the indirect and unproven risk to wild salmonids. However SEPA have stated that such action will still be recorded as non-compliance with CAR licence conditions. This could lead to significant commercial implications for aquaculture operators in terms of customers and consumers who are unlikely to be aware of the specific circumstances and mitigating factors which led to such non-compliances.

8. Compliance

The proposed SLRF suggests that regulations for existing farms will change with the implementation of the framework. SEPA propose to vary permits for existing farms to include the following permit conditions:

- For all farms, monitoring and reporting conditions requiring the collection and submission of weekly sea lice counts between 16th March and 30th May.
- For all farms, monitoring and reporting conditions requiring the submission of weekly estimated fish numbers 16th March and 30th May.

- For farms categorised as medium risk, considerable risk or high risk, conditions limiting the maximum number of adult female sea lice on the farm to the typical maximum for that farm.

This requirement for monitoring and reporting of sea lice are based on the risk assessment matrix in order to identify where SEPA may add lice limit values to permits. These values will be based on the data collected through monitoring which will then inform if categorisation should change at any one farm.

Clear guidance is required to determine the time requirement for submission of weekly lice and fish numbers to SEPA. Due to difficulties in counting exact fish number mid-way through a production cycle there is a requirement for some flexibility. In addition, persistent adverse weather conditions or other factor such as ongoing treatments may prevent lice/fish counts. These factors need to be accounted for as they may result in disproportionate and unavoidable non-compliance.

Currently, salmon farms in Scotland use environmental management plans (EMPs) as a key tool to control interactions with wild salmonid species and mitigate potential environmental impacts. These EMPs are designed to ensure that aquaculture operations are conducted in an environmentally responsible and sustainable manner. EMPs are comprehensive documents that guide salmon farming operations in Scotland to minimize their impact on wild salmonid species and the surrounding ecosystems. They encompass various aspects of farm management, from site selection to ongoing monitoring and reporting, and are essential for promoting sustainable and responsible aquaculture practices.

With the implementation of the SLRF it is unclear whether EMPs will continue to function in the same way that they currently do. CAS request urgent clarity on the future requirement for EMPs and a planned timeframe for their replacement (assuming EMPs are eventually replaced/superseded by the SLRF).

9. SLRF Economic Assessment

A significant criticism of the proposed SLRF to date has been the lack of any Business and Regulatory Impact Assessment (BRIA). The lack of a BRIA was highlighted as a significant failing during the last consultation on the proposed framework. CAS considers that the proposed SLRF, if implemented in its current format, will have significant direct and indirect socio-economic impacts on the most vulnerable rural and island communities in Scotland.

Direct negative impacts include restricted development potential of the salmon industry with knock on effects for private investment and employment creation. The proposals to eventually examine and retrospectively target long established fish farms will also lead to the direct loss of jobs and prosperity. Indirect negative effects on local and national supply chains and other induced benefits are also inevitable should the framework be implemented in its current format.

Presumably in response to criticism over the lack of a BRIA in support of previous consultations, SEPA have included an analysis of implications (section 10 of the consultation document) which aims to assess the potential socio-economic effects of the SLRF. SEPA have selected three of the National Performance Framework Outcomes[3] (Communities, Economy & Environment) with which to structure the analysis:

[3] https://nationalperformance.gov.scot/national-outcomes

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01698 534630

(a) Communities

The analysis of implications for communities is extremely limited. The assessment focuses on just three potential implications, all of which are considered by SEPA to be positively affected by the implementation of the proposed framework.

In reality, salmon farming is a key pillar which supports the cohesion and viability of fragile rural and island communities in Scotland. This goes beyond and is distinct from direct employment and economic benefits from our presence. Examples include harvested fish supporting more frequent and subsidised freight and ferry services for remote islands. Similarly the presence of more working age families maintains provision of schools which are the heart of many communities. Another example is the provision of modern communication links in areas which had previously limited connectivity.

CAS would argue that any assessment of the potential impacts of the proposed SLRF needs to include consideration of the wide range of negative effects on fragile communities should the framework lead to a moratorium on development and eventually the removal of long established farms across Scotland.

(b) Economy

SEPA argue that 'predictable decision making' will be more positive for the fish farming sector (+3) than either increased costs (-1) or increased regulatory burden (-2). We do not agree with this assessment. At present we have no clarity on how the proposed framework will be validated. The virtual post smolt track approach has only been modelled for two WSPZs, and there is no clarity on what detailed modelling might look like in practice should screening models indicate this is required. This total lack of clarity does indicate predictability in decision making. We would also argue that the restriction of the future development of the sector, as well as punitive sanctions and/or forced closure of long established farms both should have been assessed as inevitable implications of the SLRF once implemented.

(c) Environment

SEPA's analysis suggests that fisheries will be the main beneficiary of the proposed framework, with the protection of wild salmonid populations (+2) and the identification of where environmental improvement are required (+2) being the main benefits. This is indefensible considering the extremely wide range of pressures on wild salmonids, and the lack of any study which definitely proves direct impact of farm origin sea lice on wild salmonids at the population level. CAS are of the opinion that sea lice from fish farms are playing an inconsequential part in the declines in wild salmon. As such, we consider the analysis of implications is not justified in this respect.

The final implication in the environment section is the enhancement of Scotland's environmental reputation through the development of a 'robust, transparent and science led framework, which gives confidence that pressures on wild salmonids are being appropriately managed.' CAS do not believe the framework, as currently proposed, to be robust, transparent, or science led. Indeed the implementation of such a framework without robust scientific underpinning or a robust plan for validation of its effectiveness post-implementation has the potential to negatively affect the environmental reputation of Scotland.

10. Conclusion

CAS does not endorse the current SEPA proposals for a sea lice risk assessment framework. The proposed framework has no mechanism for the ultimate evaluation of its effectiveness in terms of achieving its stated objectives. It is simply not credible to introduce permit controls without any means to assess whether such controls achieve their stated intention.

The proposed timeline for the introduction of a sea trout specific framework for the Northern Isles is overly ambitious. There is practically no data on the marine abundance, behaviour and population health on Orkney or Shetland. Without this data we do not know if local sea trout populations are even in decline in these areas (hence potentially no justification for a future framework. CAS requests that SEPA urgently establishes an expert working group to establish an extensive and robust environmental monitoring strategy for the Northern Isles. We have suggest that a minimum of three years of data would be required in order to account for interannual variability. It seems logical to defer the sea trout framework until the SLRF has been established and evaluated such that any lessons learned could inform the development of the sea trout framework.

SEPA must resist political pressure to adopt the proposed framework in as expedient a manner as possible and should commit to introduction of the framework only when spatially and temporally robust environmental baseline monitoring has taken place. The salmon farming sector in Scotland also remains open to the idea of collaborative working with SEPA and other agencies to effectively calibrate and validate a model which could more accurately assess the risk associated with marine fish farms.

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Appendix 1 – Responses to specific consultation questions

Question 1: Do you agree with our revisions to the WSPZ? If not, please explain why you disagree and what would be your alternative.

Agree ☐
Disagree ☐
Not Sure ☒

CAS have no marine farms on the West Coast or Western Isles, so no comments to make regarding this question.

Question 2: Do you have any additional information on, or suggestions how we could identify, important sea trout rivers in the West Coast, Western Isles and Northern Isles?

The Northern Isles of Scotland are significantly different to the West Coast and Western Isles, with no significant sea loch systems, no significant populations of wild salmon, and fundamentally different bathymetry and hydrographic conditions. The transfer of the existing proposed SLRF approach to the Northern Isles would therefore be inappropriate. The proposed implementation timeframe for the northern isles as well as paucity of data on wild salmonids in the Northern Isles is an opportunity for collaborative multi-year research into abundances, distribution, behaviour etc. **3.3 Identification of WSPZs in the Northern Isles (Page 18)** SEPA state the following: *'we propose to work with stakeholders to identify where WSPZs should be identified, starting with Orkney, where some data on populations is already available, and then moving up to Shetland'* We object to SEPA's assertion that significantly more data (as evidenced by SEPA's shorter proposed timescales for implementation) exists for Orkney as compared to Shetland. Both areas currently have a complete lack of meaningful data in terms of the marine distribution, abundance, and behaviour of wild salmonids. The lack of meaningful data on wild salmonid populations in the Northern Isles means that wide ranging and detailed monitoring programmes are required which will require multi-year datasets in order to provide scientifically valid data to inform WSPZs in these areas. It is our opinion therefore that this work needs to begin ASAP so that agreement on scope, membership, methods and timescales can be agreed. As previously stated, the collection of a robust dataset on catchments and marine stage smolt distribution, abundance and behaviour needs to be the first step before any identification of WSPZs for the Northern Isles can take place. **CAS request urgent clarity over SEPA's proposed specific work packages and timescales to support the identification of WSPZs for the Northern Isles during the period 2023-2025.**

Willow House Kestrel View, Bellshill, ML4 3NJ
01698 534630

Question 3: Do you have any suggestions to improve our screening models?

The screening model is incomplete. As specified in the consultation there are 3 aspects to the modelling risk to wild salmon: a three-dimensional hydrodynamic model, a particle tracking model and an exposure-based model. Currently the third part, the virtual post smolt track has only been completed for 2 proposed WSPZs.

A simplified interim approach has been proposed using lice concentrations to fill in the gaps where virtual post smolt track models are not currently complete. This seems a rushed approach with no scientific data supporting any validation. In order to provide a framework that benefits wild salmon populations and doesn't unnecessarily hinder the development of the aquaculture sector, a more robust appraisal of the interim model should be applied. This would still only remain as an interim position while the post smolt tracks were completed. It should be noted that the virtual salmon post smolt tracks provide an extremely basic and conservative view of salmon migratory routes, especially where rivers enter the protection zones midway along a sea loch.

SEPA have stated that the proposed framework will be adaptive. Post implementation, CAS requests that any changes to screening models and methodology should be adopted only following consultation with stakeholders (and not simply imposed as has been the case with updates to e.g. NewDEPOMOD model parameters/methodology). **A commitment from SEPA to publicise and consult on proposed changes to screening models post implementation would be welcome.**

Within the breakdown of the modelling requirements which developers will need to adhere to, there is a suggestion that sea lice data from other operators will be required to accurately model the necessary outputs. There is no clarity on how this might work in practice within multi-operator areas, as there are not only issues of commercial confidentiality between competitors, but also of disproportionate workload for operators which are not looking to develop their own farms. **SEPA should provide clarity on how they expect data sharing between operators will work in practice.**

This proposal of set screening models is prescriptive and does not allow flexibility for the regulator or the developer in the screening/scoping phase of a new/existing development. We believe that the three components should not be mandatory but looked at on a case-by-case basis for each new development so that efficiency can be incorporated into an existing complex system.

Willow House Kestrel View, Bellshill, ML4 3NJ
01698 534630

Question 4: Do you have any suggestions on how we could better present the outputs of the models?

No comment

Question 5: Do you agree with our proposed approach to developing a risk assessment framework for sea trout? If not, please explain why you disagree and what would be your alternative?

Agree ☐
Disagree ☒
Not Sure ☐

CAS disagrees with the proposed approach. Reference is made on page 25 of the consultation document that a recently developed Norwegian method 'may be suitable for assessing risk to sea trout in Scotland and is an option we will explore in developing our proposals.'

The physical characteristics of the Norwegian coastline as well as rivers and river catchments are totally different to the Northern Isles of Scotland in particular, where we have large open, relatively shallow and extremely well flushed sounds as opposed to very deep, sheltered and poorly flushed fjord systems. There is also presently effectively zero information on the marine abundance, behaviour and distribution of sea trout in the Northern Isles.

If a specific sea trout/Northern Isles framework is to be developed in due course then it is not acceptable to simply wait for more research to emerge from Norway in this field. Urgent action is required to address these significant data gaps, which would then lead to a much better informed future framework. **CAS insists that SEPA urgently commits to and outlines a long term (3yrs+) collaborative project to fill in data gaps in terms of wild salmonid behaviour as well as terrestrial habitat quality and a holistic assessment of the wide range of potential pressures on wild sea trout across both Orkney and Shetland. We strongly recommend that the implementation of a sea trout specific framework is delayed until such time as the above research is complete.**

Willow House Kestrel View, Bellshill, ML4 3NJ
01698 534630

Question 6: Do you agree with our proposed risk assessment methodology? If not, please explain why you disagree and what would be your alternative.

Agree ☐
Disagree ☒
Not Sure ☐

CAS operates no marine farms on the West coast and Western Isles of Scotland, and so will be unaffected by the currently proposed SLRF. Notwithstanding this, we have concerns around the public perception of risk and impact in terms of the proposed risk assessment matrix. In the caption for figure 4, SEPA states the following:

'...The matrix describes relative risk based on a simple, initial, interim screening assessment. It does not imply impact.'

Our concern is that certain stakeholders may misinterpret this risk assessment matrix in terms of assuming the subsets of farms at higher relative risk are having actual impacts on wild salmonid populations. It would useful in finalised wording/comms when the strategy is implemented for SEPA to be much clearer in terms of explanations of relative risk vs. actual impact.

Question 7: Do you agree with the proposed timetable? If not, please explain why you disagree and what would be your alternative.

Agree ☐
Disagree ☒
Not Sure ☐

Disagree with the proposed timetable for the Northern Isles. The West Coast has the advantages of long and detailed wild salmonid catch statistics as well as sharing a physical similarity with the Norwegian coastline in terms of long fjordic systems. The Northern Isles have no equivalent data and no similarity with the Norwegian example.

The application of West Coast/Norwegian approaches to the Northern isles is therefore wholly inappropriate. The proposed timetable suggests WSPZ and screening model development will begin for Orkney during Q4 2023. This is a matter of weeks away. WSPZ and model development for the Northern Isles needs to have some underlying scientific basis and be rooted in even the most basic understanding of sea trout abundance, behaviour and distribution.

Cooke suggests SEPA create a working group before the end of 2023 to examine data requirements and to create a robust survey plan in partnership with other agencies to begin such survey during 2024. We would expect a multi-year programme of work (3yrs +) would be required in order for any future proposals to have any merit.

Willow House Kestrel View, Bellshill, ML4 3NJ
01698 534630

Question 8: Do you agree with the proposed workflow for pre-applications? If not, please explain why you disagree and what would be your alternative.

Agree ☒
Disagree ☐
Not Sure ☐

The proposed workflow for pre-app seems reasonable. Our main concern would be in terms of timescales. We assume the lice modelling would supplement other modelling which is required during the CAR pre-app process and could be submitted and evaluated in tandem. It would be objectionable if the pre-app lice modelling was handled separately by SEPA which would have the potential to cause delays in application progression.

Question 9: Do you agree with the proposed timetable? If not, please explain why you disagree and what would be your alternative.

Agree ☐
Disagree ☒
Not Sure ☐

Disagree with the proposed timetable for commencement of pre app screening reports for Orkney (Late 2024 / early 2025). These timescales are overly ambitious for reasons outlined in answers to earlier questions. Whilst data on wild salmonids is non-existent in Shetland, data in Orkney is also extremely sparse and is effectively limited to a single programme of electrofishing in support of an academic thesis. This survey did not provide full spatial coverage of Orkney and was conducted during 2004 – 2008.

We suggest therefore that in the interests of consistency for all parties, and to allow time for some data collection, that implementation in Orkney and Shetland is conducted in parallel. We therefore request that the commencement of pre-app screening for orkney matches the existing timeframe for Shetland. Furthermore as repeatedly stated in this consultation response we feel that an extremely thorough, multi-year collaborative research project into wild salmonid behaviour, abundance and distribution in the northern isles is required before any aspect of a sea trout specific framework can be considered for implementation.

Without any underpinning data on sea trout populations prior to implementation it will be impossible to validate the effectiveness of the framework.

Willow House Kestrel View, Bellshill, ML4 3NJ
01698 534630

Question 10: Do you agree with the way we have used the risk assessment matrix to identify where we will apply permit conditions for reporting and lice limits? If you disagree, please explain how you would apply the matrix and why this would deliver a better outcome.

Agree ☐
Disagree ☐
Not Sure ☒

No specific concerns with the risk assessment matrix as proposed, however CAS wishes to highlight general concerns regarding the use of 'capacity' within WSPZs. This capacity is a control on future development within areas, which has commercial competition implications between developers. This could lead to a reluctance amongst developers to share lice data with other developers (which would presumably be required in order to conduct detailed lice modelling within shared operator zones).

Question 11: Do you agree with our proposal for setting permit limits on the number of lice on a farm? If not, please explain why you disagree and what would be your alternative.

Agree ☐
Disagree ☒
Not Sure ☐

CAS fundamentally disagree with the concept of setting permit limits on a naturally occurring organism in the marine environment which isn't a pollutant under the direct control of operators. Setting an absolute 'discharge' number on a naturally occurring species over which operators cannot directly control is wholly inappropriate.

Question 12: Do you agree with our proposal for applying a rolling average limit, and a maximum daily limit on the number of adult female sea lice? If not, please explain why you disagree and what would be your alternative.

Agree ☐
Disagree ☒
Not Sure ☐

See answer to question 11 above.

Willow House Kestrel View, Bellshill, ML4 3NJ
01698 534630

Question 13: Do you agree that it is proportionate to require enhanced sea lice counts at high-risk sites and that this should be delivered in due course via automated systems using artificial intelligence? Please give reasons for your answer.

Agree ☐
Disagree ☒
Not Sure ☐

SEPA states that automated lice counting technology will be required to be adopted at high risk farms within three years of the issue of the permit. CAS are unaware of any existing technology which can consistently and accurately count lice stages on fish within pens. Operators cannot be classed as non-compliant should such technology not exist in sufficient quality/reliability following end of this 3yr period.

It would be useful for SEPA, equipment manufacturers, FHI and aquaculture operators to collaborate on a minimum required standard for accuracy for automatic lice counters. Such a standard could simply be a tolerable deviation from physical lice count numbers within the same pens/farms. A commitment as soon as practicable to a minimum required performance standard would provide certainty and reassurance to all stakeholders (equipment manufacturers in particular).

Question 14: Do you agree with how we propose to provide a level of protection until the end of June for sea trout on the West Coast and around the Western Isles while we develop a new risk framework for sea trout? If you disagree, please explain how you would apply the matrix and why this would deliver a better outcome.

Agree ☐
Disagree ☐
Not Sure ☐

No specific comments in this regard as CAS operate no farms on the West Coast or Western Isles. That being said, We feel there needs to be clarity from SEPA regarding the future of Environmental Management Plans (EMPs) required under planning condition for the supposed protection of wild salmonids. EMPs were intended as an interim measure and SEPA needs to liaise with planning authorities as a priority to provide certainty over the specific actions and timeframes for transfer of responsibility for wild salmonid interactions from local authorities to SEPA in order to prevent duplication of regulation.

Question 15: Do you agree with how we propose to set permit conditions to protect sea trout populations? If not, please explain why you disagree and what would be your alternative.

Agree ☐
Disagree ☐
Not Sure ☒

No comment

Question 16: Do you have any comments or suggestions on how we plan to phase in the framework?

As previously stated within answers to questions, CAS considers that the timetable for the inclusion of the Northern Isles (Orkney in particular) within a sea trout framework is too ambitious given the almost complete absence of data on wild salmonids in these areas. The proposed timetable suggests WSPZ and screening model development will begin for Orkney during Q4 2023. We consider that the development of the sea trout specific framework for the Northern Isles needs to wait until critical data gaps are addressed with multi-year datasets.

Question 17: Do you agree with the proposed timetable? If not, please explain why you disagree and what would be your alternative.

Agree ☐
Disagree ☒
Not Sure ☐

Figure 9 within the consultation document proposes late 2024 for the phased introduction of a framework in the Northern Isles. This is inappropriate given the total lack of baseline data on wild salmonid populations. Without any baseline information we don't know whether Northern Isles sea trout populations are increasing, decreasing, or stable.

It is wholly inappropriate to impose such significant new legislation and costs on developers without any underpinning baseline knowledge of wild salmonid populations in these areas. If a sea trout specific framework is adopted without robust underpinning baseline knowledge, then it will be impossible to validate success or failure in stated aims to protect wild salmonids.

As stated repeatedly in this consultation response, CAS considers that a collaborative, extensive and robust sea trout baseline monitoring programme (terrestrial and marine habitats) needs to commence ASAP and collect data for an absolute minimum of 3 years before any sea trout specific framework could be considered for implementation. Assuming such baseline monitoring could commence during spring 2024, we would propose a more realistic and scientifically justified potential implementation date of late 2026/early 2027 at the earliest. The latter date is perhaps more realistic as would allow time for the assessment of data collected during period 2024 – 2026.

Willow House Kestrel View, Bellshill, ML4 3NJ
01698 534630

Question 18: Do you agree with our approach to monitoring and reporting conditions and the way we have used the risk assessment matrix to identify where we will add lice limits to permits? If you disagree, please explain how you would apply the matrix and why this would deliver a better outcome.

Agree ☐
Disagree ☒
Not Sure ☐

Low risk farms are proposed to have no numeric lice limit permit conditions, however such farms will still have conditions requiring lice and fish numbers to be reported on a weekly basis to SEPA. This seems somewhat inappropriate to have data reporting conditions for farms which have no specific lice limits. We would argue that such conditions should only apply to higher risk farms which would have lice limit conditions.

It is also worth highlighting that farms which pose the lowest risk to wild salmonids (such as open water, offshore farms) may have the most challenges in providing regular lice counts. SEPA should allow greater flexibility on farms with lower relative modelled risk in terms of instances whereby adverse weather conditions prevent lice counting.

The importance of such flexibility is highlighted in a key recommendation of the Salmon Interactions Working Group, which SEPA actually quote in section 7.1 (Introduction) of the SLRF consultation document:

"A single lead body (with appropriate competence and capacity) should be assigned responsibility for regulating wild and farmed fish interactions and given appropriate powers for monitoring and enforcement. An enforcement policy should be published, informed by existing controls, to include specific penalties and sanctions for breaching conditions but incorporating some flexibility to respond to specific local conditions;"

This recommendation is instructive. The SIWG recommendation acknowledges that a degree of flexibility is required when dealing with such dynamic systems as offshore fish farms. CAS would expect SEPA to reflect this recommendation when building flexibility in reporting conditions under the SLRF.

Willow House Kestrel View, Bellshill, ML4 3NJ
01698 534630

Question 19: Do you have any existing evidence that could be used to assist assessments of the WSPZs where the sea lice exposure threshold is potentially being exceeded?

No comment

Question 20: Would you be interested in collaborating with us in carrying out the assessments required to determine if action is required to reduce infective-stage sea lice concentrations in those WSPZs in which screening suggests the sea lice exposure threshold may be exceeded?

If so, how would you be willing to contribute?

No currently proposed WSPZs within Northern Isles, so this question is not relevant to Cooke Aquaculture Scotland Ltd. CAS would however be willing to collaborate in equivalent assessments for the Northern Isles sea trout specific framework in the future.

Question 21: Do you agree with the proposed timetable? If not, please explain why you disagree and what would be your alternative.

Agree ☐
Disagree ☒
Not Sure ☐

The proposed timetable outlined within figure 12 shows that the planning and delivery of monitoring studies to support refined modelling will take place from Q2 2024. The proposed 'targeted action as part of catchment improvement plan' is scheduled to potentially begin during Q4 2024.

The potential socio-economic ramifications of such action (if required) could be extremely significant, particularly in fragile remote communities across Scotland. It seems wholly inappropriate to base such action on <6mths of monitoring work. Cooke would propose that the start date for this 'targeted action' needs to be deferred until refined modelling and monitoring studies are well established. It is not appropriate for these workstreams to take place in tandem when any catchment improvement plan is dependent on data from these workstreams.

Deferring catchment improvement plans until 2027 at the earliest would facilitate the collection of modelling/environmental monitoring data over a period of three years. This is consistent with CAS answers to other questions in this consultation response. Three year periods of data collection are the very minimum which could be considered to have any scientific validity. This validity is critical when considering the potential significantly negative effects on long established farms (with associated negative socio-economic consequences for fragile rural and island communities).

Question 22: Do you agree with the way we are proposing to use the risk assessment matrix to identify where we should focus our regulatory effort. If you disagree, please give your reasons and describe what you would propose instead.

Agree ☒
Disagree ☐
Not Sure ☐

CAS are generally supportive of using risk screening approaches to focus resources and increase efficiency and proportionality of compliance enforcement action. That being said, we wish to reflect comments made in response to earlier questions around the public perception of the risk assessment matrix. It is important to make abundantly clear to stakeholders that the matrix represents a modelled relative risk with no attribution of actual impact. The potential for reputational damage in terms of misinterpretation of relative risk vs. actual impact is very real for operators of the 21 highest risk farms in particular.

Question 23: Do you agree with the proposed timetable? If not, please explain why you disagree and what would be your alternative

Agree ☐
Disagree ☐
Not Sure ☒

No comment

Question 24: Do you agree with how we propose to prioritise where we target effort under the first environmental monitoring strategy for the framework? If not, please explain your reasons and what you think we should do instead.

Agree ☐
Disagree ☐
Not Sure ☒

In Section 8.2 of the consultation paper, the second objective is to:

'Gather data to assess the effectiveness of the combination of actions taken to protect wild salmonid populations, including action to manage risks from sea lice.'

As stated previously in this consultation response, the 2023 – 2028 Wild Salmon Strategy Implementation Plan outlines some 51 actions across a huge range of potential pressures. Further clarity is required on how SEPA aim to assess the effectiveness of a combination of actions across so many disparate actions/pressures and how this will feed into the assessment of the effectiveness of the proposed SLRF.

It is our contention that it will be extremely challenging to successfully disentangle the effectiveness of the SLRF given this context.

Willow House Kestrel View, Bellshill, ML4 3NJ
01698 534630

Question 25: Do you think the focus of the monitoring strategy should be on the types of monitoring listed above? If not, please explain your reasons and what you propose instead or in addition.

CAS are broadly in agreement with the focus of the proposed monitoring strategy. Point (e) relating to monitoring trends in condition of wild salmon and sea trout stocks is of critical importance. CAS requests that SEPA uses this monitoring programme as an opportunity to evaluate the full range of pressures on wild salmonids, for example habitat mapping of burns to reveal if any terrestrial pressures, e.g. canalisation, pollution are having significant adverse impacts on wild salmonids.

Other pressures in the freshwater and marine environment, e.g. fish eating birds and seals should also be monitored and evaluated in order to provide a holistic view of the condition of wild salmonid populations.

CAS also wishes to comment on the proposed use of sentinel cages to validate modelled predictions of infestation pressure. Such studies are in no way representative of wild salmon and sea trout smolts which have the ability to move at speed and migrate through areas (and return to freshwater in the case of sea trout to remove lice if required). A more robust direct validation method is required as oppose to this indirect/proxy method which is unrepresentative.

An example would be real time monitoring of lice larval abundances by underwater plankton sensors. This would reflect SEPAs requirements for operators to purchase such systems for automatic monitoring of lice burdens on sites. The onus on emerging technologies to fill data gaps should apply to all parties in this framework, not just aquaculture operators.

Willow House Kestrel View, Bellshill, ML4 3NJ
01698 534630

Question 26: Do you think that the proposed collaborative approach is the best mechanism for developing and delivering a monitoring plan? If not, please give your reasons and describe what you would propose instead.

Agree ☐
Disagree ☒
Not Sure ☐

Cooke is generally supportive of collaborative approaches in order to fill knowledge gaps. Where we disagree with the proposed environmental monitoring strategy is SEPAs stated position that they will not undertake or commission any of the required environmental monitoring (see quote below).

Section 8.3 (pg 76) SEPA state the following:

'We think that co-developing monitoring projects for WSPZs with a range of partners who can contribute variously to the projects' design, delivery and funding will build trust in the projects, as well as maximising efficient use of collective resources. This is why we are not proposing at this stage to undertake, or commission, the necessary environmental monitoring ourselves and recover the costs of doing so via our charging scheme.'

It is inappropriate for the lead agency in an extremely complex area of potential environmental interactions between wild and farmed fish not to propose undertaking any monitoring. This undermines the legitimacy of the proposed framework and could lead to accusations that the ongoing monitoring is being unduly influenced by external bodies.

Collaboration is of course essential, but SEPA, as the now competent authority in terms of wild salmonids needs to commit to a minimum programme of environmental monitoring which would aim to answer the most fundamental questions. The collaborative/privately/alternatively financed research could be used to answer less fundamental questions which are still of significant research interest and would have the potential to further refine the proposed framework post-implementation.

Question 27: Are there other bodies and organisations you think would be interested assisting with a collaborative approach to environmental monitoring? If so, please can you say who they are and how you think they could contribute?

Local authorities under auspices of e.g. local biodiversity plans are likely to have an interest in environmental monitoring within their geographical areas of jurisdiction. Equipment manufacturers would also be important in terms of new and emerging technologies, e.g. automatic plankton counters to count lice larvae, or technological solutions to map wild salmonid behaviour and distribution (e.g. migration routes for wild salmon).

Willow House Kestrel View, Bellshill, ML4 3NJ
01698 534630

Question 28: Do you agree with the proposed timetable? If not, please explain why you disagree and what would be your alternative

Agree ☐
Disagree ☒
Not Sure ☐

The commencement of monitoring phase is currently scheduled to commence during Q4 2024. The planning stage (one above in the table) is also scheduled to begin Q4 2024. We would suggest that the commencement phase should only begin once all planning is complete. This ensures that effort and resources aren't wasted initiating monitoring before consensus is reached in terms of optimal approach, goals etc.

Question 29: Do you agree with the proposed timetable for improving accessibility of information collected in implementing the framework? If not, please explain why you disagree and what would be your alternative.

Agree ☐
Disagree ☐
Not Sure ☒

No significant issues with the proposed timetable. We feel however that all commercial operators with the potential to affect wild salmonids should be subject to the same level of transparency both in terms of their potential effects on wild salmonid populations as well as the enforcement (if any) which SEPA is undertaking. This would include for example penalties/fines for impassable hydropower barriers and for poor terrestrial pollution/livestock management. This would give the public and interested stakeholders comfort that SEPA and the Scottish Government are taking seriously all the multifaceted potential threats to wild salmonids.

We would therefore recommend that SEPA publishes all the actions taken under its regulatory remit to safeguard wild salmonids in the Scottish Wild Salmon Strategy annual reports which are referenced in this section of the consultation document.