

RURAL ECONOMY AND CONNECTIVITY COMMITTEE

SALMON FARMING IN SCOTLAND

SUBMISSION FROM MARINE CONSERVATION SOCIETY

1. Do you have any general views on the current state of the farmed salmon industry in Scotland?

The Marine Conservation Society (MCS) believe that the salmon farming industry in Scotland, as currently operated, poses serious environmental concerns. This is substantiated by a number of factors:

- As the ECCLR¹ report notes - sea lice numbers are unacceptable, with thresholds conflicting between Code of Good Practice and Marine Scotland, sea lice treatments are less effective as sea lice populations become increasingly resistant to their effects, and the wider environmental impacts of chemical treatments are poorly understood. In addition the continuing move into larger net pens containing greater numbers of fish in turn results in greater numbers of sea lice per cage, in effect forming a “reservoir” of sea lice leading to higher numbers in surrounding waters. The impacts as identified in the ECCLR report on wild Atlantic salmon and sea trout, both Priority Marine Features and Biodiversity Action Plans species, from these elevated sea lice numbers is cause for grave concern.
- Whilst planning is in place for individual fish farm sites, there is no assessment of the cumulative impacts of multiple sites in a receiving water body. This is essential if we are to understand and mitigate for impacts on wild salmonids, benthic habitats, water quality, including nutrient loads and on the wider environment, including all Priority Marine Features. Without this level of evaluation and understanding, it is impossible to know the full extent of the environmental impacts - both direct and indirect – of current operations, before even considering growth.
- There remains a lack of knowledge and understanding of the impacts of salmon farming on Priority Marine Features (PMF), both inside and out-with Marine Protected Areas, and a lack of application of the precautionary approach in relation to potential biodiversity impacts. As there are 103 registered active sites on or in a PMF area according to Marine Scotland, and 32% of sites within some form of designation as stated by National Trust for Scotland (NTS) within the ECCLR report, therefore this lack of knowledge is of great concern.
- As the ECCLR Committee noted “...*the same set of concerns regarding the environmental impact of salmon farming exist now as in 2002 but the scale and impact of these has expanded since 2002*”¹, indicating that the industry has continued to grow despite there not being a full understanding of the environmental impacts it has. MCS believes it to be irresponsible to continue to grow a data poor industry in light of these findings.

¹ Environment, Climate change and Land reform Committee: Letter to Edward Mountain, MSP regarding report on the environmental impacts of salmon farming.. REC committee dated 05th March 2018

- Escaped farmed salmon still pose a problem despite the development of “A Technical Standard for Scottish Finfish Aquaculture”². In 2016, over 300,000 fish escaped from Scottish seawater salmon farms³, a figure likely to increase if the industry expands. MCS shares the ECCLR Committee’s concern that a significant minority of these escaped farmed salmon could be interacting with wild populations leading to genetic introgression and indirect effects such as exposure to sea lice and other pathogens. The lack of knowledge about these effects is also of concern and should be addressed as a matter of urgency.
- MCS is concerned that lethal predator control is still relied upon to manage interactions with farmed salmon and seals. Although this practice is currently occurring under license we are however concerned that the monitoring of the practice, including recovery and identification of carcasses to species level could be open to abuse. MCS would like to see increasing research and investment into a range of non-lethal control measures, with the objective of stopping lethal predator control. This will soon be required for exports to comply with US Marine Mammal Act.

2. There have been several recent reports which suggest how the farmed salmon industry might be developed. Do you have any views on action that might be taken to help the sector grow in the future?

Until the current failings in the regulation of the salmon farming industry and the environmental issues of concern, as both identified by ECCLR Committee, are understood and resolved, MCS believes that there must be no new marine open cage fish farms or any expansion of existing fish farm sites, including any increases in farmed fish biomass at existing sites. As noted by the ECCLR Committee any expansion of the industry will be unsustainable and may cause irrecoverable damage to the environment.

Before any future growth is considered, an assessment of the carrying capacity of the receiving water body must be undertaken. This information should then be included in a framework plan to prescribe what development type and size can take place within the water body’s cumulative carrying capacity. This is an essential step towards achieving an ecosystem based approach to managing aquaculture operations.

Adaptive management has been put forward as an approach for industry growth. Whilst this concept has its merits, MCS believes that such an approach must be underpinned by a good understanding of the direct and cumulative impacts of aquaculture, which is based on comprehensive monitoring and data collection. Given the lack of comprehensive monitoring and data collection in the current salmon farming industry - as evidenced by looking to Norway for proxy information to inform the SPICe⁴ report - MCS believes there would need to be significant improvement

² Marine Scotland. June 2015. A technical standard for Scottish finfish aquaculture. Available online at: <http://www.gov.scot/Resource/0047/00479005.pdf>. Accessed 28/03/2018

³ Marine Scotland Science. 2016. Scottish Fish Farm Production Survey 2016. Available at: <http://www.gov.scot/Resource/0052/00524803.pdf>. Accessed 28/03/2018

⁴ SAMS. 2018. Review of the environmental impacts of salmon farming in Scotland. Issue 01. The Scottish Parliament

upon current data collection and utilisation before adaptive management could be considered as a responsible approach.

MCS supports the ECCLR call for independent research, including a cost benefit analysis, of Recirculating Aquaculture Systems (RAS). Many issues of concern can be mitigated by the use of RAS and if the industry is to grow, use of these systems has to play an integral and substantial role.

3. The farmed salmon industry is currently managing a range of fish health and environmental challenges. Do you have any views on how these might be addressed?

MCS believes there are a range of solutions that should be considered, in brief:

- An evaluation of the impact of the increasing size of net pens in relation to the effectiveness of sea lice and disease management. MCS is particularly concerned that sea lice treatments may not be truly efficacious in 120 m polar cages given the large amount of fish they contain.
- Smolts produced in closed or land based systems for a longer period before being put to sea for grow-out at a greater size (1kg) as opposed to the current 70-130g⁵. This would reduce exposure to sea lice and subsequent treatments, potentially improving at sea survival rates and limiting benthic/pollution impacts. It is therefore essential that investment in RAS technology increases to facilitate this.
- The use of Strategic Environmental Assessment⁶ (SEA) to ensure that environmental aspects are considered effectively in policy, plan and programme making. The use of a SEA tool can inform development opportunities, identify constraints and barriers and assist in moving the industry to a more ecosystem based approach as advocated in the ECCLR report.
- Better monitoring and greater collation, sharing, analysis and utilisation of data. If adaptive management is a proposed method for the future of the industry then this is a first fundamental step that needs to be in place to facilitate this. Key data and knowledge gaps include but are not limited to: the environmental effects of sea lice treatments, both local and diffuse; farm specific data on sea lice burdens to enable a greater understanding of contributing factors to their distribution; impact mapping on the interaction with wild salmonids and a comprehensive understanding of salmon farming impacts on Priority Marine Features, inside and out-with MPA's.

4. Do you feel that the current national collection of data on salmon operations and fish health and related matters is adequate?

No. Please see comments provided above. As the ECCLR Committee highlighted, little more is known now than in 2002 when the last review took place. This is despite continuous industry growth in that period and the operation of a financially buoyant

⁵ Jeffery, K.R., McPherson, N., Verner-Jeffreys, D.Taylor, N., Auchterlonie, N. 2015. Modelling of the potential for shortening the pen-based phase of the salmon on-growing cycle. SARFSP008. Scottish Aquaculture Research Forum.

⁶ Scottish Government. Strategic Environmental Report. Available online at: <http://www.gov.scot/Topics/marine/marineenergy/wind/seareport>. Accessed 12/04/2018

industry. MCS is in agreement with the ECCLR Committee that industry development and growth is taking place without a full understanding of the environmental impacts and lack of application of the precautionary principle.

5. Do you have any views on whether the regulatory regime which applies to the farmed salmon industry is sufficiently robust?

MCS believes that neither the current regulatory regime nor its application is sufficiently robust or integrated between regulators. This allows for important issues of concern, such as the protection of wild salmonids, to “fall between the gaps”.

Placing the burden of planning applications within Local Authorities, many of whom have an insufficient understanding of the operational impacts of salmon farming on the wider environment and wild salmonids or an understanding on the cumulative impacts of a number of farms needs serious revision. [Relating to this, MCS and SIFT recently produced this guidance document for Local Authorities:](#)

MCS believes that the current model of self-monitoring data being provided to SEPA rather than independent monitoring and assessment is not robust. There needs to be confidence in the data provided to enable to plan and provide a basis for decisions. This can only be achieved through independent monitoring and robust enforcement. We await with interest the implementation of the proposed DZR approach, in particular the monitoring and enforcement aspects of its use.

MCS also believes it is inappropriate that fish farm leases are given in perpetuity, particularly in a dynamic, rapidly evolving industry when what may have seemed a suitable site five years ago would not be seen as such now.

6. Do you have any comments on how the UK’s departure from the European Union might impact on the farmed salmon sector?

MCS is concerned that by leaving the EU the UK will:

- Likely no longer have membership of the EU Aquaculture Advisory Council, where discussions are being held and decisions and advice produced on issues such as: feed sustainability for the future; fish welfare; a level playing field with imported global aquaculture products; and the definition of sustainable aquaculture. The EU market is very important to Scottish farmed salmon, so a shared understanding and approach to such issues is important.
- No longer have access to European Maritime and Fisheries Fund (EMFF), of which Scotland receives 46% of the UK share. This is of particular concern as this fund supports innovation, which is essential to overcome a number of the environmental challenges we are seeing in the salmon farming sector, such as sea lice control and disease management. It is essential if the industry is to innovate to enable growth that this funding source be replaced.