Environment, Climate Change and Land Reform Committee

Environmental impacts of salmon farming

Written submission from Argyll District Salmon Fishery Board and Argyll Fisheries Trust

Argyll District Salmon Fishery Board district covers most of the mainland of Argyll plus the islands of Bute and Arran. Argyll Fisheries Trust covers the DSFB district, plus the islands of Islay, Jura and Mull. The district includes many salmon and sea trout fisheries, almost all of which are assessed at category 3 or poor conservation status. In Argyll, most rivers had sea trout fisheries. The population of sea trout has crashed to such an extent that the commercial value of these fisheries to the local hotels and tourist industry has disappeared.

Salmon counter data from the Awe barrage in Argyll has shown a severe decline in salmon running the river in recent years. The river Awe is probably the biggest salmon fishery in the south-west highlands. In the mid-1980s (before the development of large scale aquaculture in the region) the average number of salmon ascending the river was in excess of 2500. In 2017 the lowest ever number of ascending salmon was recorded at under 500.

Argyll's sea lochs contain some of the most concentrated aquaculture locations in Scotland. The Board and Trust have serious concerns that existing levels of aquaculture are damaging local salmonid populations and that any further expansion is a serious risk to the viability of the remaining fragile populations.

The Board and Trust welcome ECCLRC's investigation into the Environmental impacts of salmon farming and would like to make the following comments on the SAMS Review of the Environmental Impacts of Salmon Farming in Scotland published in January 2018.

S.2.1.4 Diagnosis

We welcome the recognition in the report that sea lice not only have the potential to have a negative effect on wild salmon but that in many situations this is likely to be the case. We call on Marine Scotland Science to acknowledge this and adjust its advice accordingly.

The report notes the current very high levels of marine mortality for wild salmonids that adds pressure to already weak stocks. Scottish Government statistics collected on the east coast suggest sea survival of wild salmon has reduced significantly over the years and now stands at about 5%. Salmon counter data in Argyll suggest that sea survival on the west coast is even lower. The report indicates that the additional loss due to sea lice emanating from aquaculture may be of the order of a further 25% of that figure. This is an average figure and a comparison of catches since before the advent of salmon farming indicates that the situation is significantly worse the further south down the west coast. This is likely to be because the migration routes of the outgoing salmon smolts from Argyll takes them within range of many more farms than fish leaving rivers further north. This is reflected in the very low numbers of adult salmon returning to Argyll's rivers.

S.2.1.5 Prognosis and mitigation

We would draw the committee's attention to the following statement: "Even without an increase in Scottish production of salmon, this risk (sea lice) can be expected to increase in the future unless the decreased efficacy due to increased resistance to treatments is addressed. We agree that the decreasing efficacy of treatments is an issue of concern to be addressed, however there are other conclusions that also flow from the analysis:

- The Scottish Government must ensure that any planned growth in the aquaculture sector is contingent on the ability of the industry to demonstrably manage and mitigate its impacts. We remain extremely concerned about the published plans of the industry to double in size by 2030 given that it has failed to manage lice levels at current production levels.

- The Scottish Government must ensure that regulatory mechanisms are developed and put in place that can mitigate the impacts of aquaculture. There is a clear consensus in the wild fish sector that at present the regulatory mechanisms are not fit for purpose.

The report advocates "adaptive management" as a means of mitigating the impacts. We agree with this in principle but would add that such management must have the power to mitigate the impact of lice on wild fish along with legal obligations to ensure that this happens. Such a system will be challenging to develop but we believe is achievable with the support of the Scottish Government. It will require the following elements:

a) Science and monitoring

Sound science and monitoring is a vital component of any system capable of being genuinely adaptive. Urgent work needs to be done develop a "best practice" monitoring strategy for salmonid populations on the west coast that can, even in a crude manner, demonstrate impacts from aquaculture. Whilst the Board and local Trusts can play a key role in this, it is our view that the funding for it must come from aquaculture.

Monitoring must be designed in a way that can meaningfully inform local regulation of fish farms. For example, monitoring might give amber or red alerts which may trigger particular actions on certain farms which have failed to control lice levels.

Monitoring must take place at the right geographical and temporal scale.

We strongly agree with the SAMS report that monitoring data from the farms themselves must be made available at farm scale and in real time.

b) Regulation that is fit for purpose

- There must be clear rights and duties for parties. Thought needs to be given regarding who should bear the legal responsibility for managing impacts on wild salmonids, and a clear framework in which this can operate.

- To be effective, regulation must work at the right geographical and temporal scale. In particular, impacts on local salmon population, which might trigger management action, must be measured at the correct scale.

- The recent decision by the Scottish Government to impose trigger levels for management action on farms is welcomed but the trigger levels must reflect the real risk to local wild salmon populations. We do not understand by the Scottish Government has set trigger levels at 3 lice per fish and 8 lice per fish when the aquaculture industry's own Code of Good Practice sets a treatment trigger level at 0.5 or 1 lice per fish. The Scottish Government trigger levels would appear to have sent a message to the industry that it is very relaxed about the transmission of lice to wild fish and we have observed a significant increase in lice levels on farms in Loch Fyne since the change was made.

- Consideration must be made of the cumulative impact of the total tonnage within any farming management area in any assessment of risk.

- The regulatory system must be able to sanction the reduction/elimination of tonnage on farms that are unable to demonstrate that they can farm to pre-determined standards. Only through clear enforceable farming standards can the impacts of poor farming be mitigated. In other words, if a farmer cannot farm to the required standards then they must be required to stop.

c) Good Governance

- Governance structures must include all stakeholders.
- Structures must be fully transparent and accountable.
- Structures must be capable of operating at a local level; and
- Governance must ensure compliance with standards. It must not be 'toothless'.

Section 5.

The potential of escaped farmed salmon to hybridize extensively with wild fish was demonstrated by the RAFTS work carried out in 2011/12 by government scientists. Studies in Ireland have shown that such hybrids are less fit for survival during the sea migration and will further affect the numbers of adult returning salmon.

We believe that, as a matter of urgency, further research should be funded to establish the extent and effect of this introgression.

We have particular concerns regarding the impact of escapes from open cage fresh water smolt rearing. Nutrient enrichment from these cages may also impact the quality of the environment for local trout populations.