

**Environment, Climate Change and Land Reform Committee
Environmental Impacts of Salmon Farming**

**Written Submission from the Wester Ross Area Salmon Fisheries Board
The content of this submission is fully endorsed by the Skye & Wester Ross Fisheries Trust**

The Wester Ross Area Salmon Fisheries Board (WRASFB) is a Statutory Body with the duty of protecting and improving wild salmonids within its district and, is also a Statutory Consultee in the aquaculture planning process.

The Skye & Wester Ross Fisheries Trust (SWRFT) has a different remit but undertakes annual monitoring of wild salmonid populations within its area to assist the WRASFB in fulfilling its statutory duties.

We welcome the opportunity to provide our views on the SAMS report. While broadly agreeing with the contents of the SAMS report, we have provided some additional comments with a view to providing further clarity, specific to our area of responsibility. We have therefore limited our comments to those sections of the report that relate to the interactions between salmon farming and all wild salmonids (salmon and sea trout).

Section 2

2.1.1

To avoid duplication, we strongly agree with the response submitted by Fisheries Management Scotland as a whole and in particular, their interpretation of the SAMS report on the subsection entitled 'sea lice effects on wild salmon populations'.

We would make the following points in addition:

Although the SAMS report makes reference to both wild salmon and wild salmonids (salmon and sea trout) the report mainly addresses those impacts related to wild salmon. Determining impacts on juvenile salmon (smolts) in the wild is recognised as being extremely difficult to ascertain due to salmon smolts moving relatively quickly out to sea. This makes them difficult to capture, monitor and observe any lice loading.

Sea Trout are a Marine Priority Species and historically were a very important part of West Coast and Island fisheries until their rapid decline and the subsequent collapse of the fisheries. There are many studies and published evidence from fishery trusts on impacts to both salmon and sea trout and while they may not be recognised as peer reviewed and published papers, they are an accurate record of published evidence and data from all of the regulators. These can be found on the [WRASFB web site](#).

Most monitoring research carried out by fishery trusts is on sea trout as they are known to return to freshwater during periods of heavy lice loading and are therefore targeted for capture and sea lice counting during the main migration period for both salmon and sea trout. This allows a degree of prediction on the possible lice loadings on juvenile salmon migrating to their Northern feeding grounds. This in turn allows a degree of prediction on whether they may have a lice loading of more than 11 (inducing mortality).

There are many papers relating the causal effect of salmon farming on sea trout, some of which are referenced in the SAMS report. If all of the impacts from salmon farms to the environment are to be considered in full, sea trout papers such as Butler and Walker 2006 ¹ should also have been included. These papers relate to the collapse of the Loch Maree sea trout fishery.

The Shieldaig sea trout project was initiated by Marine Scotland Science some twenty years ago to specifically collect data related to wild sea trout and farmed salmon interactions in Loch Torridon following the collapse of the Shieldaig sea trout population. This project is now being sustained by restocking to ensure there are enough sea trout to be sampled. The farmed salmon biomass within Loch Torridon has doubled during this period so this data, if it had been included, could have provided some important considerations for impacts to the local sea trout populations in particular.

Currently, all of the rivers in Wester Ross are categorised as grade 3 in terms of salmon conservation limits. A category 3 river is determined as having a less than 60% probability of meeting its conservation level. This includes the Little Gruinard SAC (designated for Atlantic Salmon). It is important to note here that voluntary catch and release (>90%) has been practised in Wester Ross for many years for conservation purposes.

2.1.2

This section makes reference to the current regulatory framework. These regulations relate to farmed fish only and cannot be used to regulate any impacts to wild fish outside the cages. There is a similar anomaly where SEPA do not consider the impacts of sea lice emanating from a fish farm when consenting farm biomass. In Wester Ross we have recorded situations where an operator can apply for planning permission for development where all of the consultation (including wild/farmed fish interaction) is based around a set biomass. The operator can then later apply through SEPA's Controlled Activity Regulations (CAR) to increase biomass and, has always been successful, because wild/farmed interactions relating to sea lice are not under SEPA's remit. It is therefore possible for biomass to increase without proper consideration of impacts on wild salmonids. This situation currently favours increased production rates without due consideration to the consequences of increased impact.

There has been a longstanding presumption against allowing fish farms on the North and East coasts to protect wild salmon stocks. This Government's position clearly recognises that there is a very high level of risk that adverse impacts on North and East coast salmon stocks will occur. There is no such Government position that recognises that this same degree of caution should be considered for the West coast salmon and sea trout stocks and instead, there appears to be a position of unconditional support for the industries expansion plans.

Their position seems to be that by protecting 80% of Scotland's wild salmon, the Government has discharged its duty. This is admirable unless you are a West coast salmon or sea trout in the aquaculture zone.

2.1.5

We note that all of the measures within this section are designed to reduce the incidence of sea lice on the farm fish; this should be the aim of every operator. When sea lice levels rise, the operator will start treatment until lice levels start to drop and while this might appear to address the problem for fish within the cages, sea lice that have already been released to the wider environment outside the cages are now beyond any form of control and may have already attached to wild fish. This can allow the transfer of lice from farm to farm with wild fish as the delivery platform and ultimately will result in increased mortality of the wild fish if the lice numbers are high enough.

Section 8

We understand that sea lice levels will soon be disclosed on a farm-by-farm basis. We believe that this will help further our understanding on a wide range of issues that is currently not possible with amalgamated and averaged figures.

¹Butler, J.R.A. & Walker, A.F. (2006). Characteristics of the sea trout *Salmo trutta* L. stock collapse in the River Ewe (Wester Ross, Scotland) in 1988-2001. In: *Sea Trout: Biology, Conservation and Management*, pp. 45-59 (eds. N.J. Milner & G.S. Harris). Blackwell Publishing Ltd., Oxford, UK
<http://onlinelibrary.wiley.com/doi/10.1002/9780470996027.ch4/summary>

We believe that the current method of farm biomass reporting by tonnage should also be reviewed to convert tonnage into fish numbers. It is difficult to interpret any potential risk to wild salmonids when applying an amalgamated and averaged number of lice per farm fish without knowing how many farmed fish there are.

We believe that the ultimate protection for wild salmon and sea trout would be closed containment and that this may even be the industry's long-term vision for farmed salmon production. In the short term however, something needs to be done now.

Following all farms during the smolt run might be difficult due to marketing strategies, but it is not impossible and shorter times at sea would also reduce pressure on wild fish. If fish could be grown to 1kg or more in the freshwater stage or closed containment, before going to open cages, this would reduce the two year sea water stage of a production cycle to one year at sea. If there is no second year of a production cycle at sea, there may not be elevated lice levels either. These are all things that have been discussed for years but always put off for financial reasons.

Whilst we support the adaptive management approach in principle, it is clear that this could only work where there is no data that would suggest otherwise and, adaptive management must move from voluntary to compulsory.

Referring back to comments in our 2.1.1, our own extensive data correlates with the Marine Scotland Science data from Shieldaig: that there is a clear demonstration of markedly increased levels of sea lice on a two year production cycle that corresponds with the 2 year salmon farm production cycles (in Loch Torridon).

Regular WRFT electro fishing over fixed sample sites in one of the main spawning streams flowing into the Balgy river, which then flows into Loch Torridon, showed high to moderate abundance of juvenile salmon numbers in 2006, 2010 and 2014. This was considered enough to maintain a population level.

In 2016, the WRFT team failed to find any juvenile salmon in these same sample sites and in 2017, a SEPA team also failed to find any juvenile salmon in these sample sites. It is perhaps of note that in 2010/2012, farmed salmon production doubled in Loch Torridon.

WRASFB believe there was an urgent need for this review and hope that the equally urgent need for reform is recognised.

The WRASFB and SWRFT have carefully considered views on the interactions between wild and farmed fish. These are founded on many years of scientific research, field experience and existing evidence. We would be happy to make this available to the committee if they wish.



Bill Whyte
WRASFB Convener
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