

Environment, Climate Change and Land Reform Committee

Environmental impacts of salmon farming

Written submission from Lynn Schweisfurth

The late announcement and short deadline for submitting evidence to this hearing based on a 198-page report, released only a few days ago, unfortunately indicates no serious intention on the part of the ECCLR to attract as wide a public response as possible. This is in sharp contrast to the efforts invested by the Scottish Government in its public consultation on fracking which enjoyed wide media coverage and encouragement of civil society to participate, ultimately resulting in a fracking ban in Scotland. This suggests less appetite for critical assessment of the salmon farming industry, which, unlike fracking, is already doing untold long-term damage to our environment. Furthermore, a submission limited to only four A4 pages is obviously not intended to elicit comprehensive, in-depth analysis of the extensive issues surrounding salmon farming. For this reason, the following comments are inevitably brief and omit many other serious concerns.

As pointed out in the ECCLR committee hearing of 30 January 2018 by both committee members and the authors of the report, it was acknowledged that there is a substantial **lack of data and research** regarding environmental impacts of salmon farming. This is despite previous government reviews highlighting the same concerns that have received widespread media coverage over the years and which have remained unaddressed. It was acknowledged that Scotland is lagging far behind other salmon-producing countries such as Norway in its responsibility to gather **sufficient data to ensure that its regulations reflect the threats** that the salmon industry pose to the environment.

When outcomes cannot be predicted due to a lack of data, the **precautionary principle**, as opposed to “adaptive management” must be applied. “Adaptive management” is surely a euphemism for “fingers crossed” and reveals an unacceptable risk (business)-friendly approach towards protection of our environment. It should also be noted that recent **budget cuts to environmental agencies** raise serious questions as to how adequate research will be carried out in future and how regulations can be properly enforced. In light of plans to double salmon production by 2030, the Scottish Government is pursuing a wholly inadequate strategy to address well documented concerns surrounding many aspects of salmon farming, and is ill-equipped to address the inevitable challenges that such a dramatic expansion will bring. This review reiterates and confirms knowledge of the damaging effects of salmon farming which has long been in the public domain. It is therefore difficult to grasp why a government which has shown progressive leadership on a variety of environmental issues would allow such an industry to continue to pollute with impunity, let alone be allowed to expand.

Sea Lice

The government review states that “*large numbers of salmon living close together on a farm promotes the proliferation of lice*”. This is not new knowledge and demonstrates a lack of will to address the problem by, at the very least, **decreasing stocking limits**. At present, those limits are being increased to 2,500 tonnes per farm and more. The Salmon & Trout Conservation Scotland’s recent [report](#) confirms previous clear evidence of the impact of sea lice on wild salmon stocks, which are already dangerously low. Nevertheless, new sites are being granted permission to **operate in the vicinity of salmon rivers**. Ever increasing outbreaks of sea lice, along with other diseases, mean that a growing use of chemicals such as emamectin benzoate, [dangerous to crustaceans](#), are flowing unfiltered into our seas, posing an acute **threat to the future of Scotland’s creel fishing industry**.

Other mitigation techniques, such as “Thermolicer”, have given rise to **animal welfare concerns** with over [100,000 fish being boiled alive](#) in one single incident. The inability of the salmon industry to overcome the challenges of disease has led to **shocking mortality rates** and the loss of up to one quarter of its annual production, a staggering percentage that would be unacceptable in any other livestock industry.

Page ten of the government’s report clearly states that sea lice is “*a key impediment to the expansion of the Scottish salmon farming industry in the marine environment*”. This appears to suggest that any expansion can only take place in land-based closed containment, also known as recirculating aquatic systems (RAS), where disease can be managed without impacting the environment. **It is therefore reasonable to expect that the ECCLR committee will recommend a transition from open net salmon farms to RAS with immediate effect.**

Diseases

The review fails to name the diseases **Piscine Reovirus (PRV)** and **Infectious Salmon Anaemia (ISA)** which are not only dangerous to marine life but have potentially far-reaching **implications for human health** and have been identified on salmon farms in Canada owned by Marine Harvest, the largest operator in Scotland. The [link to a Q&A](#) by the Scottish government on ISA in Shetland is unfortunately not available. Enquiries to the Fish Health Inspectorate regarding mass mortalities on farms in 2017 shed no light on what caused them. [ISA is an internationally reportable disease](#).

Organic Waste

As long as salmon is being farmed in open net cages, organic waste will continue to flow untreated into the sea. As **no official data exists**, a rough estimate would suggest it is equivalent to around the **human sewage of the population of Scotland**. Again, there is no other industry which is allowed to pollute with impunity. Nutrient pollution causes **eutrophication** and **toxic algal blooms** which have [devastated countless fishing communities in Chile](#). Extensive submissions on the subject have been made to the Scottish Government in the past and it would be nothing short of reckless to ignore these warnings.

An immediate moratorium on open net cages and a transition to RAS, as [practised in Denmark](#) and elsewhere, is the only responsible way forward if Scotland is to expand

its production of salmon. **China, Norway and the United States** have all recognised that open net cages do untold harm to the environment and have acted accordingly. At the time of writing, Washington State has cancelled the lease on its last open net salmon farm after [repeated escapes from a site owned by Cooke Aquaculture](#). It is time for Scotland to take the same bold action on salmon farms that it has taken on other environmental issues.

Medicines and Chemicals

The salmon industry uses a long list of chemicals which are poured into our seas. They include **emamectin benzoate, organophosphates, hydrogen peroxide, copper and zinc**. SEPA claims the use of these chemicals is tightly regulated, but the industry is self-regulating and **oversight inadequate**. Breaches of regulations have not led to one single prosecution. If there are no sanctions, there is simply no incentive for salmon farms to comply. It further undermines Scotland's ability to achieve Good Environmental Status and ensure water quality standards under the **EU's Water Framework Directive** and the **Marine Strategy Framework Directive**.

Predator Deterrents

Canada has banned the use of acoustic deterrent devices (ADDs) on account of the damage they do to the hearing of marine mammals, which is essential for their survival. Particularly troubling is the continued permission for salmon farm operators to **shoot seals**, a protected species whose numbers have dropped dramatically in the east coast of Scotland, particularly in Orkney. The use of ADDs violates **Habitats Regulation 39(2)** as amended in Scotland and the **Nature Conservation (Scotland) Act 2004**.

In conclusion:

Despite an overwhelming body of scientific evidence which clearly substantiates the significant negative impacts and effects of salmon farming on our environment and wild salmon stocks, the Scottish Government looks poised to embark on a rapid increase in salmon production. Salmon farming companies, mainly Norwegian-owned, are clearly taking advantage of Scotland's shamefully weak regulatory framework now that they are subjected to tighter regulation in their own country. The industry's blueprint for expansion, "[Aquaculture Growth Plan 2030](#)", is an undisguised attempt by the industry to **further weaken this** framework and secure ever higher profits with even less responsibility for the harm they do.

The Cabinet Secretary for the Environment, Climate Change and Land Reform should impose an immediate moratorium on all open net finfish farms and stand firm on her **commitments to EU environmental principles** which she reaffirmed at the European Environmental Bureau's annual conference on 7 November 2017:

"My ambition is to carry through not just the letter of EU environmental law but also the underlying principles of precaution, prevention and rectifying pollution at source, as well as the 'polluter pays' principle."

There can be no exemption for salmon farms.

Lynn Schweisfurth

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