

## Rural Economy and Connectivity Committee

### Inquiry into Salmon Farming in Scotland

#### Response from Scottish Environment Protection Agency (SEPA) to supplementary questions following REC meeting of 18 April 2018

#### 1. Funding for research and innovation projects relating to salmon farming

*What funding do your organisations provide for research and innovation projects relating to salmon farming, including assessments of wild fish stocks?*

A key part of our approach to promoting and supporting innovation in environmental protection is innovative research. This involves collaboration with universities; other research institutes; the sector; and public body partners. We are currently supporting a number of research projects. These include:

- a) **Aquaculture wastes:** A project with Crown Estates and aquaculture interests investigating the potential to extract value from aquaculture wastes;
- b) **eDNA monitoring techniques:** A project to develop rapid assessments of sea bed health; allow more information to be collected more efficiently; and, in due course, help shorten adaptive management response times; and
- c) **Wild salmon status:** A large, jointly funded project with Marine Scotland and Scottish Natural Heritage to improve understanding of the current status of salmon in rivers across Scotland. This information will help us evaluate the results of our own investigative surveys we have been carrying out into salmon stocks in rivers on the West Coast.

Our contribution to such projects is typically in the form of staff time and expertise as well as data. However, we do provide some funding support where we are able and the project requires it. For example, we have contributed around £65,000 of funding to the Wild salmon status project (see above).

SEPA's expertise is also represented on the Scottish Aquaculture Research Forum (SARF) where we are actively supporting projects exploring the technical and economic feasibility of closed containment sea pen; and improvements to bath medicine dispersion modelling.

We have recently completed in-house development of one of the world's most sensitive techniques for detecting the fish farm medicine, emamectin benzoate, in the marine environment. We are currently working to enhance our analytical capabilities for another medicine, azamethiphos, by winter of this year.

## 2. SEPA sector plan - increasing capture and beneficial use of waste - method and actions

### Sector planning

We are currently in the process of finalising a sector plan for fin fish farming. We expect to publish the plan for consultation at the end of June.

[Sector planning](#) is our new approach to how we work with different industries. It enables us to consider an industry's whole environmental footprint. Each plan will set out the steps we will take, and those we expect the sector to take, to secure [One Planet Prosperity](#), our regulatory strategy for protecting and improving the environment in ways that, as far as possible, also deliver social and economic success. Our first sector plans were published in March for the landfill sector; whisky sector; and the metals sector.

The plan for fin fish farming will describe how we will:

- (a) protect the environment and biodiversity by ensuring fish production is matched to environmental capacity;
- (b) encourage the capture and beneficial use of organic wastes, where appropriate;
- (c) reduce medicine releases into the environment;
- (d) strengthen the evidence base; and
- (e) support action to protect wild fish.

The actions will include:

- (a) increasing the quality and quantity of environmental evidence that fish farm businesses must provide when applying to us for authorisation;
- (b) the use of strengthened scientific modelling techniques to assess the capacity of the environment to sustainably accommodate farm developments;
- (c) strict, clear and simple licence conditions to ensure fish farm business are in no doubt about what is expected of them;
- (d) enhanced monitoring and auditing of the environmental performance of farms;
- (e) improved coordination with other regulators; and
- (f) on-going engagement with industry leaders to support and encourage innovation in sustainable fish production.

### Regulation of organic waste emissions

We initiated work to review our approach to marine fish farms well over a year ago. Last year, we [consulted](#) on some of elements of the package of changes we will be making to the way we regulate emissions of organic waste.

All marine cage fish farms require a licence from us. The licence regulates emissions of organic wastes (fish faeces and any uneaten food) and emissions of waste medicine residues. We regulate all waste emissions in a way designed to prevent damage to the marine environment beyond a permitted footprint of effect around the cages.

For organic wastes, as a condition of its licence, a farm must not hold more than a specified tonnage of fish. This limit is calculated with the aim of ensuring that:

- (a) concentrations of pollutants beyond the permitted zone of effect do not exceed levels at which damage to biodiversity could result – ie the wider marine ecosystem is protected;
- (b) the condition of priority marine features, Special Areas of Conservation, and Marine Protected Areas is not compromised; and
- (c) the ability of sea bed animals to break down the accumulated waste in the permitted zone of effect around the cages between production cycles is maintained.

Before granting a licence for a farm to operate or for an existing farm to expand, we assess whether the farm will be able to meet these criteria. We also assess if there could be risks from the waste emissions to the interests of other users of the water environment.

If an adverse impact on the environment or on the interests of other users of the environment would be likely, we do not authorise the development unless it can be modified to avoid the impact.

At operational farms, we use a combination of monitoring data provided by the operators and the results of our own monitoring and investigative surveys to confirm that the environment is being protected.

Where an operational farm is found to be causing impacts, we take appropriate action to secure the protection of the marine environment. This action may include reducing the permitted tonnage of fish that can be held at the farm. If suitable action is not volunteered, our regulatory powers allow us to vary the conditions of, or even revoke, licences as necessary to protect the environment.

### **Location-specific solutions**

The changes we will be making to the way we regulate emissions of organic waste will:

- (a) deliver a step change in the scientific monitoring and modelling of organic waste releases into the marine environment; and
- (b) help fish farm businesses locate their operations where the sea has the necessary environmental capacity to accommodate the scale of production they are planning.

Exposed parts of the coast with strong tides can quickly dilute and disperse organic wastes. This helps prevent the wastes impacting on sea bed biodiversity. Previously, the way waste emissions were modelled created disincentives to developing farms in such locations. Under the changes, farms wishing to use open-net farming systems will be able to re-locate production to such locations,

subject to meeting other environmental and planning requirements.

In other areas of the sea, we want to see the industry progressively reduce the extent and intensity of impact on the sea bed around farms. Farms wishing to increase production in parts of the sea where environmental capacity is under pressure will need to replace open net cages with a system able to capture and remove a significant proportion of farm wastes.

The optimum location/production system for a marine fish farm will not just depend on how it deals with organic wastes. Overall sustainability will depend on other environmental and fish health considerations. These include the ability to stay within strict limits on medicine discharges and avoid risks to the status of wild salmon and sea trout. The sector plan will describe the steps we will be taking to strengthen the way we control medicine discharges and how we will contribute, along with other regulators, to protecting wild fish.

### **3. Review of controls for individual licences**

To support our sector plan, we are modernising our standard marine cage fish farm licence. This will include strict, clear and simple conditions to ensure fish farm businesses are in no doubt about what is expected of them. All farm development proposals will be authorised under the new licence. For existing licences, there will be a phased transition to the new licence format to allow the sector to make the adjustments necessary to meet the revised licence conditions. In the interim, we will continue to work with the farm businesses concerned to ensure compliance with licence conditions and protection of the environment.

SEPA  
08 May 2018