

Scottish salmon farm medicine significantly impacting local marine environments as SEPA unveils firm, evidence-based proposals for a revised regulatory regime

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Scottish salmon farm medicine is significantly impacting local marine environments. That is the conclusion of one of Scotland's largest and most comprehensive marine research projects into aquaculture, undertaken by the Scottish Environment Protection Agency (SEPA).

- Scottish salmon farm medicine significantly impacting local marine environments concludes SEPA research report, which increases the now substantial weight of scientific evidence that the existing approaches do not adequately protect marine life.
- SEPA announces firm, evidence-based proposals for a revised regime that will strengthen the regulation of the sector.
- New, tighter standard for the organic waste deposited by fish farms.
- More powerful modelling using the best available science, replacing 15 year old framework.
- Enhanced environmental monitoring and creation of new SEPA enforcement unit to ensure compliance is non-negotiable.
- New interim approach for controlling the use of Emamectin Benzoate, pending UK Technical Group recommendations to Scottish Government.
- New approach could allow for larger farms than traditionally approved, provided they are appropriately sited in sustainable locations.
- Scotland-wide consultation events across November and December.

Scottish salmon farm medicine is significantly impacting local marine environments. That is the conclusion of one of Scotland's largest and most comprehensive marine research projects into aquaculture, undertaken by the Scottish Environment Protection Agency (SEPA).

The survey, 'Fish Farm Survey Report – Evaluation of a New Seabed Monitoring Approach to Investigate the Impacts of Marine Cage Fish Farms', undertaken by specialist marine scientists using research vessel the Sir John Murray, examined environmental impacts from eight Scottish fish farms. 302 chemical samples were analysed from 93 sample stations and 296 ecological samples from 142 sample stations.

Samples for chemical analysis were analysed for the sea lice medicine Emamectin Benzoate (EmBz) and Teflubenzuron (Tef), last used in 2013. The medicines were detected in 98% and 46% of samples respectively, with residues more widely spread in the environment around fish farms than had previously been found. Moreover, the research concluded that the impacts of individual farms may not be contained to the vicinity of individual farms.

The research survey was published today (Wednesday, 7th November) as part of proposals by SEPA, one of a number of organisations regulating finfish aquaculture*, for a revised regime that will strengthen SEPA's regulation of the sector. The proposals follow 16 months of work by the agency, including a 2017 consultation, and two Scottish Parliamentary committees, one of which concluded that "the status quo is not an option", adding that the industry's expansion goal "will be unsustainable and may cause irrecoverable damage to the environment" unless governance and practices are improved markedly.

Scotland is the largest Atlantic salmon aquaculture producer in the European Union and third in the world after Norway and Chile. A contributing factor to this is Scotland's reputation for a high quality environment and abundant freshwater resources.

SEPA's draft Finfish Aquaculture Sector Plan is ambitious in its aspirations for an industry where in the future:

- The Scottish finfish aquaculture sector recognises that protecting the environment is fundamental to its success and is foremost in all its plans and operations.
- The sector is a world-leading innovator of ways to minimise the environmental footprint of food production and supply.
- The sector has a strong and positive relationship with neighbouring users of the environment and the communities in which it operates. It is valued nationally for its contribution to achieving global food security.

It is also clear that all operators in the sector will reach and maintain full compliance with Scotland's environmental protection laws, with SEPA working to help as many operators as possible to move beyond compliance.

Whilst SEPA's latest Compliance Assessment Scheme (CAS) data saw overall compliance levels for the sector drop during 2017 to 81.14%, against a relative peak of 85.75% in 2016, the industry is innovating through the use of 'non medicinal farming' using wrasse, a small fish that tackles sea lice, full or partial containment and enhanced fallowing.

Specifically, SEPA's firm, evidence based proposals for a revised regime that will strengthen the regulation of the sector include:

- **A NEW TIGHTER STANDARD FOR THE ORGANIC WASTE DEPOSITED BY FISH FARMS**

Marine cage fish farming across Scotland operates using open-net cages. Fish faeces; any uneaten food; used fish medicines and other chemical treatments

escape from these cages into the marine environment. The heavier, organic particles (the fish faeces and uneaten food) together with any medicines sticking to them are deposited on the sea floor. Natural biological processes then break down and assimilate the material over time.

The tighter standard limits the spatial extent of the mixing zone around farms. The controls we will apply to these mixing zones will bring them into equivalence with modern practice on mixing zones for other waste effluent discharges into the sea, including those from urban waste water.

- **MORE POWERFUL MODELLING USING THE BEST AVAILABLE SCIENCE**

The new regulatory framework will use new, more accurate computer modelling approaches that will improve our understanding of the risk to the local environment and allow assessment of the larger-scale impacts including interactions with other farms.

The science about fish farming is very complex and these new approaches will bring the aquaculture sector up to date with the modelling practices which are being used for other industrial sectors where there is a longer history of operation and analysis.

- **ENHANCED ENVIRONMENTAL MONITORING & NEW ENFORCEMENT UNIT**

Operators will be required to invest in more accurate monitoring, including of waste coming from fish farms. The creation of a new enforcement unit will strengthen the checking and verifying of monitoring that fish farm operators are required to undertake. SEPA will also increase and strengthen monitoring of the impact of fish farms in surrounding areas.

- **NEW INTERIM APPROACH FOR CONTROLLING THE USE OF EMAMECTIN BENZOATE**

SEPA has asked the UK Technical Advisory Group (UK TAG), a partnership of the UK environment and conservation agencies, to make recommendations on new environmental standards for Emamectin Benzoate to the Scottish Government. UK TAG was established by the governments of the different parts of the UK to oversee the scientific process of developing the environmental standards used across the UK for protecting the water environment.

UK TAG is in the process of developing its recommendations. This includes obtaining and considering independent scientific peer reviews of the evidence. After UK TAG makes its recommendations to the Scottish Government, Scottish Government will consult on draft directions on the establishment of new environmental standards.

While this UK TAG work continues, SEPA will adopt a precautionary principle position which imposes a much tighter interim standard for the use of Emamectin Benzoate at any new site. This is based on the now substantial weight of scientific evidence that the existing standards do not adequately protect marine life. This interim standard will set a limit so low that it will, effectively, mean Emamectin Benzoate can only be discharged in very limited quantities at any new site.

• NEW APPROACH TO SUSTAINABLE SITING OF FARMS

The combination of the new standard, the more accurate model and enhanced monitoring will allow the siting of farms in the most appropriate areas where the environment can assimilate wastes. It will also allow SEPA to better match biomass to the capacity available in the environment and continue to assess that through the operation of the site. This may allow for the approval of larger farms than would have been traditionally approved previously, provided they are appropriately sited in sustainable locations.

Overall, the proposals will combine to encourage operators to site and operate their fish farms in environmentally less sensitive waters and use improved practices and technologies to reduce environmental impact.

In practice, we anticipate this will lead to fewer fish farms in shallower, slow-flowing waters and more fish farms in deeper and faster-flowing waters. We also anticipate it will encourage the adoption of new technologies such as partial and full containment to capture organic waste and any remaining medical residues. SEPA has seen some industry operators successfully developing new approaches such as non-chemical ways of managing fish health. Our new regime will support these encouraging developments.

As one of a number of organisations regulating finfish aquaculture, SEPA believes its proposals have the potential to significantly improve in the environmental performance of the industry.

Recognising the diverse range of views of finfish aquaculture, SEPA is keen to hear directly from individuals, interest groups, NGOs, communities, companies and others with a view on the regulatory proposals.

As part of a seven-week public consultation, SEPA will embark on one of its most significant public engagement programmes to date. SEPA will host a series of nine events across Scotland during November and December where people can find out more, talk directly with specialist teams and provide direct feedback as we strengthen our regulatory approach.

Terry A'Hearn, Chief Executive of the Scottish Environment Protection Agency, said:

Whilst a high quality environment and abundant freshwater resources are vital to Scotland's aquaculture sector, it's an industry that attracts polarised positions, from those who cite its economic contribution to those who stridently oppose its existence.

"As one of a number of organisations regulating finfish aquaculture, SEPA is clear that our job is to make sure environmental standards protect the marine environment for the people of Scotland and we make sure the industry meets those. That's unequivocally our focus.

"Consequently across the last sixteen months we've done more

science, more analysis and more listening than ever before. Whilst we're seeing innovation in the sector, we've concluded that Scottish salmon farm medicine is significantly impacting local marine environments which increases the now substantial weight of scientific evidence that the existing approaches do not adequately protect marine life.

"We agree that 'the status quo is not an option' which is why we're announcing firm, evidence based proposals for a revised regime that will strengthen the regulation of the sector. As part of a Scotland-wide consultation, we're now keen to hear directly from individuals, interest groups, NGOs, communities, companies and others on their views on the proposals as we move to strengthen our regulatory approach."

NOTES TO EDITORS:

Sector Plans

SEPA is changing today, creating a world-class environment protection agency fit for the challenges of tomorrow. By moving away from the traditional site by site regulation to grounding our regulation and activities across whole sectors, we will shape our interactions with every sector and the businesses in them.

Sector plans will be at the heart of everything we do and will help regulated businesses operate successfully within the means of one planet. In every sector we regulate, we will have two simple aims.

We will ensure that:

- every regulated business fully meets their compliance obligations
- as many regulated businesses as possible will go beyond the compliance standards.

SEPA has launched a new, dedicated space on its website for sector plans <https://sectors.sepa.org.uk>

Consultation Events

Further information on SEPA's Finfish Aquaculture Sector Plan, including community consultation events, is available at <https://sectors.sepa.org.uk>.

* 'Finfish' are fish with fins as opposed to shellfish. Salmon, rainbow trout and brown trout are the main species farmed in Scotland. 'Aquaculture' is the cultivation of freshwater or seawater organisms, including finfish or shellfish.

Press release: Beavers to return to Essex for the first time in 400 years

A pair of beavers will be heading to a new home in North Essex as part of a pioneering natural flood management scheme for East Anglia.

It is hoped the Eurasian Beavers will improve biodiversity and help to reduce local flood risk as part of a new approach to flood prevention at the historic Spains Hall Estate, just upstream of the picturesque village of Finchingfield.

The Environment Agency is working in partnership with Spains Hall Estate, the Essex & Suffolk Rivers Trust, Essex Wildlife Trust and others, with funding from partners including the Anglian Eastern Regional Flood and Coastal Committee (RFCC).

The whole story will be captured in a documentary series, due to be screened next year, overseen by renowned wildlife filmmaker Russell Savory for independent film company Copper Productions.

The beavers will have a territory covering 4 hectares, with plenty of trees to get their teeth stuck into and a boundary fence helping to keep them safe. Beavers have not been found in Essex for 400 years since they were hunted to extinction, although they have been reintroduced in small numbers in other parts of the country in recent years.

A second element of the project will involve man-made natural flood management measures being introduced on a separate strand of Finchingfield Brook at Spains Hall Estate. As well as helping to slow the flow after heavy rain, the scheme should also create wetland that will slowly release water in drier periods.

Spains Hall Estate owner Archie Ruggles-Brise said he was excited to welcome the beavers to the estate, home to his family for 250 years.

He said:

We have experienced first-hand the disruption caused by flooding in Finchingfield so we are excited to be able to contribute to this novel approach to reducing flood risk, an undeniable public good.

The added attraction of being able to pit nature against man to see who 'does it better' will be a rare chance to learn and adapt our approach.

We hope the project will also focus a spotlight on our little corner of rural North West Essex, a hidden gem normally only enjoyed by those in the know. We are keen to welcome more people to the area so they can see for themselves what they might be able to do back home.

The Environment Agency's Matt Butcher said it was a "pioneering" project for East Anglia. He said:

Natural Flood Management can be a great way to reduce flood risk for communities where traditional flood defences are not appropriate. Introducing leaky dams along Finchingfield Brook should slow the flow and reduce flood peaks downstream whilst improving habitat in this fantastic landscape.

The beavers bring another exciting dimension, as we can assess how effective they are at creating amazing new wetlands and as flood engineers.

Essex County Councillor and RFCC member Simon Walsh said:

Natural Flood Management provides many opportunities to explore innovative solutions for local flood risk concerns. Working with nature, we can often achieve successful outcomes to better protect people and property from flooding, whilst at the same time improving the environment for wildlife.

Beavers are renowned for felling trees and building dams and to use them for natural flood management is really exciting, as not only are more properties protected from flood risk, but animals once lost to the British countryside are being re-introduced in lowland Britain.

Darren Tansley, river catchment co-ordinator for Essex Wildlife Trust, said:

Working with Government, other conservationists and a forward thinking landowner to reduce flood risk in Finchingfield is an ideal opportunity for Essex Wildlife Trust. But the partners that eclipse us all are surely the beavers; natural engineers of our freshwater environment that we hope will trigger an explosion of biodiversity in their wake.

Essex & Suffolk Rivers Trust chairman Andrew Davies said:

This project brings river improvement through Natural Flood Management, better the river environment for many other species and by raising the profile of beavers, educates us all. It achieves many of our objectives as a Rivers Trust. It is a very exciting project for us to be involved with.

Notes to editors

Hunted to extinction

The Eurasian Beaver is a large semi-aquatic native mammal that was once widespread throughout Britain. They were hunted to extinction by the beginning of the 16th Century for their meat, fur and scent glands. The species was reintroduced into parts of Scotland since 2001 and earlier this year a pair were released into the Forest of Dean in Gloucestershire, an event attended by Environment Secretary Michael Gove through a partnership with the Forestry Commission and Natural England.

Keystone species

Beavers are a 'keystone species' – playing an important role in wetland ecology by creating ecosystems that provide habitats for many other plant, insect and mammal species. Few other animals, aside from humans, have the ability to so drastically modify and shape their surrounding environment.

For this reason beavers are often referred to as "ecosystem engineers". Beavers are well known for their ability to fell trees to dam shallow watercourses and create pools to make them feel safe.

The associated wetlands, interconnecting beaver canals, coppiced woodland, glades and deadwood provides rich and diverse habitat for an abundance of wildlife including plants, insects, amphibians, reptiles, birds and mammals.

For more details visit the project web page
www.spainshallestate.co.uk/nfm_beavers

Contact

For Environment Agency East Anglia press office please contact (24 hours):
0800 917 9250

[Press release: Beavers to return to Essex for the first time in 400 years](#)

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