

Salmon Farming in Scotland Debate Briefing

The Coastal Communities Network

The [Coastal Communities Network](#) (CCN) is a collaboration of locally-focused Scottish coastal community groups, guided by the belief that coastal communities across Scotland are well placed to harness long-term solutions to ensure healthy, well-managed seas. The Network provides the community voice within marine conservation and management in Scotland and comprises 15 community groups spanning the Scottish coastline, alongside supporters and associated organisations who share and support the aims of the Network.

The **CCN Aquaculture Sub-group** is comprised of members who are active on issues related to salmon farming and together they hold a wealth of knowledge on the community perspective and local concerns around the environmental impacts of the salmon farming industry in Scotland. The Sub-group have presented large amounts of evidence to support the case for a temporary halt to expansion of the industry, until it can be shown to be sustainable.

The Network very much welcomed both the Rural Economy and Connectivity (REC) Committee's Salmon Farming in Scotland Report and SEPA's Finfish Aquaculture Sector Plan consultation. CCN supports SEPA's desire to bring real change to the industry, to improve regulation and licensing and to tackle non-compliance. CCN also welcomes many of the recommendations in the REC report, particularly the recognition that fish farming impacts those whose work depends on the health of the sea and calls for more transparency within the industry and its regulators, and for tighter regulation and better enforcement.

CCN fully support these aims, but we continue to call for a temporary halt to expansion of the industry, until such time as the many issues identified by SEPA, the ECCLR Committee and the REC Committee are resolved and sustainable practice can be evidenced. We do not, therefore, support **Recommendation 3** within the REC report: "*The Committee notes calls for a moratorium on new salmon farm development and expansion of existing sites, it considers that there is insufficient evidence to support this.*"



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Sea lice and the use of 'cleaner fish'

Committee Recommendations 26-28

In recent years, live wrasse have been increasingly sought by Scottish salmon farms to act as 'cleaner fish' for the removal of sea-lice as a biological alternative to anti-parasitic chemical treatments. This has led to a rapid rise in their wild capture and subsequent release in salmon farms. There are a number of significant concerns arising from the Scottish wrasse wild fishery, including the current system of voluntary Management measures, the lack of sound science-based management or availability of quality data, the fishing season taking place during the breeding season and the vulnerability of wrasse to over exploitation.

Analysis of growing salmon farm demand for cleaner fish (both wrasse and lumpfish) projects that by 2020 up to 10 million cleaner fish per year will be needed by the salmon farming industry in Scotland. Efforts by the salmon farming industry to breed wrasse for supply to salmon farms, have to date failed to result in production levels which come close to meeting current, let alone future, demand. The demand for wild caught wrasse is likely to continue for the foreseeable future.

Evidence from available wrasse landings data suggests that local populations frequently collapse following the commencement of commercial fisheries. For example, the landings at ports such as Shieldaig, Portnalong, Oban, North Harris and Lochmaddy all experienced short term rapid growth in landings followed by rapid and substantive reductions. Such patterns are consistent with over-exploitation of local fish stocks, particularly those like wrasse, which have a restricted capacity to recolonise fished-out areas. Observations by recreational and professional divers, sea anglers and initial scientific analysis of local wrasse population declines following the commencement of wrasse fishing reinforces this analysis.

Despite the absence of reliable data, it is clear that the Scottish wrasse fishery is operating on an unsustainable basis, and that this is largely a result of the absence of adequate management measures. There is now consensus amongst a wide range of marine stakeholders that fundamental reform of the fishery is a top priority and this view was shared by the Rural Economy and Connectivity Committee, in their report *recommendations 26-28*.

There is an urgent need for sweeping reform of the Scottish wild wrasse fishery, including:

- Ensuring mandatory management measures are put in place,
- Adequate data is collected and analysis produced on stock assessment and landings data,
- And, for this to then inform sound governance of the industry.

Until such time as this is achieved, CCN support calls for a temporary moratorium on the wild wrasse fishery.

Salmon Farming in Scotland Debate Briefing

Deterring Marine Predators

Committee Recommendations 34-36

Aquaculture Acoustic Deterrent Devices (ADDs) are designed to scare seals. They are even more efficient at disturbing cetaceans. They are so good at disturbing porpoises that they are used to protect porpoises from pile driving noise by displacing them. One study found that 96% of porpoises were excluded from stations 7.5 km from a single active ADD at a received sound level of 113dB re 1 µPa (RMS). Aquaculture ADDs output from 179-194 dB re 1 µPa (RMS).

They are normally used in multiple arrays of between 4 and 20 ADDs per farm. Approximately 70% of Scottish farms use ADDs. A report from SNH to Marine Scotland states “the risk that ADDs at Scottish aquaculture sites is causing permanent hearing damage to marine mammals cannot be discounted”.

EC Guidance states ‘Where another solution exists any argument that it is not “satisfactory” will need to be strong and robust’. Most Scottish farms use single tensioned nets; dead fish accumulate at the base. It is easy for a seal to bite fish (dead or alive) through single nets made from softer materials, such as nylon. It is more difficult through more rigid material such as the eco-nets used in Shetland. It is impossible with a double skinned predator net - the system scientifically proven to be most efficient at keeping farmed salmon and seals separated.

Marine Harvest (MH) farms in Norway do not use ADDs or shoot seals to comply with their Aquaculture Stewardship Council certification, or in other locations where ADDs are banned. However, MH farms in Scotland use single nets, ADDs and shoot seals. The aquaculture industry can afford to fit double nets. Protecting cetaceans and seals by using double skinned predator nets will not cost a single job in aquaculture but will save jobs in tourism.

Farms not using the best technology for keeping seals and farmed fish separated (double skinned predator nets or closed containment) are not complying with their seal shooting licensing condition to only shoot seals “as a last resort”.

CCN are pleased to see that REC report *recommendations 34-36* focus on the use of ADD’s and call for an assessment of their usage by Marine Scotland, with the intention of informing future policy.

- **It is imperative that this review is carried out quickly and effectively and a short but sufficient time-scale is established to end the use of ADDs and fit double skinned predator nets by 2020.**
- **To ensure that no seals are shot when these ADDs are switched off we ask for an amnesty period of 1 year in order for farms to fit double skinned nets or closed containment systems.**

Salmon Farming in Scotland Debate Briefing

Location of Salmon Farms

Committee Recommendations 45-52

SEPA (within their Aquaculture Sector Plan) does accept that fish farm pollution has an impact far from cages and says that 'society must decide what is acceptable' - but its assessment of aquaculture pollution's impact is based on inadequate modelling, because the cumulative impacts are not yet addressed.

There seems to be no limit on the maximum size for the sector plan's pollution 'mixing zones' around farms - a situation that is unique to fish farming, allowing this industry to release much more pollution than other industries' end-of-pipe effluent discharges that are also regulated by SEPA under the CAR licensing framework.

The emphasis on encouraging new farms to use exposed sites may well lead to more escapes, greater welfare issues for disease-compromised fish during storms, and greater dispersion of sea lice larvae.

Both the REC committee report and the SEPA Sector Plan have acknowledged the impact of fish farm pollution on other users of the sea. During SEPAs consultations, the agency heard from many fishermen that their crustacean catches are lower around fish farms.

- **SEPA still does not accept its responsibility as the main consenting body for the biomass of fish in farms, which directly determines the number of sea lice released. It must be pushed to do more than urge farmers to use sites away from wild salmonid breeding rivers and known migration routes, especially as very few migration routes are known.**
- **Marine Scotland Science is very late in providing wild salmonid sensitivity 'heat maps', promised in the National Marine Plan four years ago. These should be published as a priority.**
- **The precautionary principle should be applied until this information is available and Ministers must be made aware if Marine Scotland Science lacks the data to make safe decisions about where to site farms.**

Local Planning Authorities:

Local Planning Authorities (LPAs) are crucial to aquaculture reform. Their Biodiversity duty as public bodies and the EU/UN obligation to apply the precautionary principle, should ensure that they do not consent farms where there is any uncertainty of sustainability. Argyll and Bute LPA has told the CCN that its planners 'lack information' to apply the precautionary principle (which is of course exactly when it should be applied) and that the council would lose at appeal/judicial review if it turned down any proposals on this basis. The cost of losing would be crippling for LPAs.

- **Bearing this in mind, the REC report *recommendations 48-50* are extremely important and should be progressed as a matter of priority. We ask for a date to be set for these recommendations to be put in place and the precautionary principle to be utilised where there is any uncertainty over potential environmental impacts.**

Salmon Farming in Scotland Debate Briefing

Marine Protected Areas and Priority Marine Features:

CCN welcomed the REC report *recommendation 51*, which calls for an assessment of the potential impacts of salmon farms on Marine Protected Areas (MPAs) and Priority Marine Features (PMFs).

- **However, the recommendation acknowledges that this may take considerable time to produce and we ask that this is progressed as a matter of priority. While this process is underway there should be no licences granted for new farms, or expansion of existing farms, within Scotland's Marine Protected Area Network.**

CCN members are very concerned over the current application for a proposed new site very close to the boundary of the Loch Carron Marine Protected Area – a well-known area of biodiversity which was protected under an urgent marine conservation order in 2017. It appears that Scottish Natural Heritage (SNH) are assessing the proposal for a salmon farm in Loch Carron on the basis of deposition modelling using programmes that have been discredited by SEPA.

SEPA's recent analysis shows that these programmes grossly underestimate the transport of waste and pollutants which are routinely carried far beyond the allowable zone and can accumulate 4km or more from the farm. This is particularly likely in areas of high tidal flow like the Loch Carron Narrows. As a result SEPA recommend full hydrographic modelling.

It is worth noting that while SNH have considered the impact of the farm on two PMFs (burrowed mud and tall sea pens) sea trout and Atlantic salmon have been ignored – and these are the PMFs most likely to be impacted by the proposed farm. No justification has been presented of why SNH consider that the farm will not affect the national status of any of the PMFs present.

Loch Carron Reef Community © SNH Flickr



Salmon Farming in Scotland Debate Briefing

Challenges of moving to more exposed sites

Committee Recommendations 54-55

CCN consider the most problematic part of SEPA's sector plan to be the encouragement of larger farms to use higher risk, more exposed sites, purely because these sites will allow them to continue to use open nets. A [recent industry news item](#) shows the risk of doing so: 24,500 fish escaped from an exposed Marine Harvest farm off Barra during a storm in autumn 2018, despite the farm having equipment of a higher specification than is required by the Scottish Government.

SEPA's new sector plan is not intended to reduce the amount of pollution, but to enable more and larger farms to site it elsewhere, so the sector can grow while still using open nets. SEPA agrees that there needs to be a transformative shift in the methods used, but this is not the way to achieve such a change.

Exposed, dispersive sites are among the most important places for Scotland's natural heritage including many Priority Marine Features (PMFs), and these areas often host valuable creel fisheries. They are also among the most attractive places on Scotland's coasts, helping to generate substantial income from tourists, who consistently cite the landscape as their main reason for visiting.

While welcoming some aspects of SEPA's sector plan, we do not feel it is robust enough. Many of the proposed changes will not take effect for around 6 years, by which time much of the industry's expansion will have been achieved. Although SEPA states that transformational change is essential, it has failed to give a timeline for the industry to change to capturing its waste.

- **We call for SEPA to set a deadline for zero emissions of waste and sea lice. SEPA can and should build on the sector review by setting progressively tighter emission standards, leading to full waste recapture.**



Salmon Farming in Scotland Debate Briefing

Closed containment

Committee Recommendation 56

- **Open nets are a significant issue and the majority of the current environmental impacts from the industry could be ameliorated by a rapid shift to closed containment, with full waste and pesticide capture and zero release of sea lice, and with a binding deadline for this to be achieved. 2030 is our suggestion.**

Coastal communities, and others whose livelihoods depend on the sea, are increasingly unhappy about the risks posed by farming fish in open nets, yet the socio-economic costs of this industry haven't been assessed. The cumulative harm being done also threatens jobs on fish farms - directly through harmful algal blooms and sea lice, and indirectly due to the loss of Scottish salmon's wholesome reputation.

- **The economic cost of alternative technologies has often been overstated and we call for clarity and information on this issue.**

The company Pure Salmon is investing heavily in onshore re-circulatory fish farms and this suggests that there is a good economic basis for doing so. Norwegian firms such as Akvafuture have been operating waste capture/closed containment systems in coastal waters for several years, with no sea louse problems, while other Norwegian companies are developing large-scale farms far offshore.

Regulation and consent

Committee Recommendations 59-64

- **The industry needs more than encouragement to make transformational changes. They should be mandatory, with a timeline and deadline set for achieving zero pollution, to allow the industry to plan its investment in new equipment.**

Switching to a licence fee system (as used in Norway), instead of the payment of seabed rents to the Crown Estates, would raise the price of fish farming to reflect the harm it does to a vital public asset and would provide a lever for change. Licence fees could be reduced for farms whose methods are doing no harm, and raised or revoked when environmental impact licence terms are breached. If further expansion was limited to closed containment methods there would be a strong incentive to change.

Environmental Impact Assessments (EIAs):

There has never been an EIA of the whole industry across its entire area of operation. SNH have told the REC committee that the carrying capacity of Scotland's seas for aquaculture is unknown. Fish farm pollution has cumulative impacts on Priority Marine Features and commercial shellfish, which threaten Scotland's national biodiversity and local livelihoods.

- **To discharge their biodiversity duty, Local Planning Authorities (LPAs) should conduct EIAs of the overall impact of all their biomass consenting decisions.**

Salmon Farming in Scotland Debate Briefing

Self-monitoring and enforcement:

- **There should be no self-monitoring by fish farms of their own environmental impacts, as this system is open to abuse. The monitoring and enforcement of environmental impacts must be independent, paid for by a levy on the industry.**

The inadmissibility of self-reported information as evidence in court (confirmed to CCN member *Friends of the Sound of Jura* by Cabinet Secretary Roseanna Cunningham) helps to explain why there have been no prosecutions, no licenses revoked and no fines for licence breaches.

Compliance is lower in this industry than any other regulated by SEPA, but its actual benthic impact is much worse than suggested by SEPA's compliance figures, because a substantial part of the compliance assessment score is concerned with whether the information is filed on time. High levels of seabed impact can be outweighed by the timely filing of reports. For instance, the levels of emamectin benzoate in sediment comprise only a small part of the compliance score, making it possible for a farm to pass a benthic survey even when its emamectin threshold is vastly exceeded.

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