

Aquaculture Review 2021

Response from The Coastal Communities Network (CCN)

05 October 2021

Dear Professor Griggs,

Thank you for the opportunity to submit written views on the points raised within your letter of 2nd September 2021, relating to your review of Scottish aquaculture regulation. CCN members are pleased to respond to your invitation, and to share some of the in-depth knowledge present within the Network, as well as ample experience of dealing with the regulatory framework as members of coastal communities across Scotland.

As you may know, CCN is a collaboration of locally-focused communities-of-place, guided by the belief that coastal communities across Scotland are well placed to play a key role in ensuring healthy, well-managed seas. CCN is currently comprised of 18 community groups across Scotland and has a vision for Scotland's seas to be abundant in biodiversity and resilient to future changes, providing sustainable and diverse livelihoods to those living around them, in perpetuity. Across these locations, CCN brings together and represents thousands of community voices. For more information, see our website: www.communitiesforseas.scot.

Summary:

- Finfish farming is a polluting industry and one that releases huge numbers of parasites into the sea. It uses only the cheapest method of farming fish, containing them in open net pens. This method threatens the livelihoods of other users of the sea, who rely on Scotland's coastal waters being clean and productive.
- There are viable, cost-effective alternative methods of farming salmon and rainbow trout using semi closed-containment at sea, or on land, which do not have these consequences. Fish farm companies in Scotland are not being prevented from doing harm and they do not seek to do it voluntarily. Only tighter regulations can reduce this harm. The industry's reputation, its social licence to operate, and the Scottish Government's hoped-for benefits of expanding the industry all depend on this.
- It is clear that this industry has substantial and increasing environmental impacts and does not willingly self-regulate. It needs strict regulatory control and urgent reform, not in order to 'streamline' consenting and enable expansion, but, as the report of the 2018 Scottish parliamentary inquiry said, because, '...if the industry is to grow, the 'status quo' in terms of regulation and enforcement is not acceptable', and because, 'urgent and meaningful action needs to be taken to address regulatory deficiencies as well as fish health and environmental issues before the industry can expand'.
- At least 50,000t of new farmed fish biomass (a minimum of ten million additional fish) has been consented without assessing the cumulative risk posed to wild salmon and sea trout by sea lice from multiple new and proposed farms, because the regulatory framework does not allow it. Scottish planning policy needs to be urgently updated to include new guidance on this issue and other risks to wild fish, based on the current science and on detailed hydrodynamic modelling of sea lice. The consenting process should be paused, according to

the precautionary principle, until adequate information about this risk is available to decision-makers.

- SEPA accepts that some level of harm due to pollution is acceptable as long as the area affected is limited. This is out-dated and unacceptable to many people. This policy should be urgently reappraised and, as an interim measure (before conversion to closed-containment), new regulations should be brought in to require the capture and responsible disposal of all fish farm pesticides.
- Regulatory reform is needed to set a cap on the overall size of salmon farms, especially in waters close to the coast which are most heavily used by other people, and which are home to most of Scotland's benthic priority marine features.
- Farm operators must consult SEPA before adding fish biomass to existing farms, but SEPA ignores wild fish impacts, and LPAs need not be consulted. This widely exploited loophole allows existing farms to bypass the LPA's obligation to assess the impact on wild fish of adding many more sea lice hosts. Regulatory reform is needed to close this loophole.
- The individual river is the correct level at which to manage Scotland's salmon heritage, not by protecting only the fish from the country's largest rivers, in the east. Regulatory reform is needed to change the emphasis from national population to this more local level and to ensure LPAs follow the precautionary principle.
- Regulations are needed to prevent over-fishing of wild wrasse. Cleaner fish are only used because open-net farms cannot control sea lice numbers.
- These are clear indications of regulatory failure. Regulation needs to be statutory because anything else is ignored. It also needs to involve organisations with the necessary expertise and it needs to be properly funded.
- A great deal of research and development investment is required and the larger Norwegian-owned companies are working on proof of concept in Norway but Scotland has the engineering and fish biology expertise to lead the way. Better regulation here would encourage Scottish producers, net-pen suppliers and others to innovate, without waiting for Norwegian companies, and without continuing to licence new damaging open-net farms.

Members of CCNs Aquaculture sub-group would be pleased to meet with you to discuss the following response in more detail. Please contact us at info@communitiesforseas.scot to arrange a follow up meeting.

With regards,

On behalf of members of
The Coastal Communities Network

1. Why the sector needs regulation in the first place:

This is a polluting industry and one that releases huge numbers of parasites into the sea. It uses only the cheapest method of farming fish, containing them in open net pens.

This allows water to flow in and out, providing free disposal of fish faeces, dissolved nutrients and the pesticides used to treat sea lice, as well as the sea lice themselves, which threaten the survival of

Scotland's iconic wild salmon. This method also threatens the livelihoods of other users of the sea, who rely on Scotland's coastal waters being clean and productive.

To farm fish in this way is a matter of choice. There are viable, cost-effective alternative methods of farming salmon and rainbow trout using semi closed-containment at sea, or on land, which do not have these consequences. The industry claims to be more highly regulated in Scotland than in other countries where the same companies operate. This conflates the number of regulations and regulators with their effectiveness. Fish farm companies in Scotland are not being prevented from doing harm and they do not seek to do it voluntarily. Only tighter regulations can reduce this harm. The industry's reputation, its social licence to operate, and the Scottish Government's hoped-for benefits of expanding the industry all depend on this.

Looking at its impacts in more detail:

Sea lice

Parasitic sea lice can infest and kill wild salmon and sea trout, and farmed salmon and rainbow trout. The impact of lice from farms on wild fish is regulated by local planning authorities (LPAs), advised by Marine Scotland and the regional Salmon Fisheries Trusts/Boards (and Fisheries Management Scotland), and to a lesser extent by NatureScot.

The number of farmed salmon in the aquaculture zone is enormously higher than the entire Scottish wild salmon population, providing an unnaturally large number and concentration of potential hosts for sea lice. When lice breed on farmed fish, they release billions of larvae into the sea from each infested farm. The larvae escape through the open net pens and, as Marine Scotland's and others' research shows, currents can carry them at least 30km while they remain able to infest wild fish.

Modelling done by Marine Scotland and others (including the Coastal Communities Network) shows that sea lice from multiple farms can accumulate in areas that are important to wild salmon and sea trout. In these places, sea lice larvae can reach densities that can kill wild salmon and sea trout smolts.

Wild salmon are in steeper decline in the West coast and Hebrides than elsewhere and are facing extinction in the majority of west coast rivers.

[Scottish Government research](#) shows that there is a clear link between the peaks of production of farmed fish in local salmon farms, and high lice numbers on wild salmonid fish.

Since March 2021, [Marine Scotland's published advice](#) has acknowledged that sea lice from fish farms present a significant threat to Scotland's wild salmon and sea trout populations.

This new position is not yet reflected in the statutory advice given by MS Science to LPAs or in Scottish Planning Policy. It is imperative that this regulatory gap is filled before more fish farm biomass is consented under the existing system, which does not properly protect wild salmonids.

Under the existing system, LPAs assess farms on their individual merits – an approach that may suit terrestrial buildings, but not fish farms.

Planning permission is granted in perpetuity, so the LPAs are licensing a process that will continue to affect wild fish for an indefinite period, by adding harmful parasites to a shared environment. There

is no legally-binding, enforceable system of regulation and monitoring to prevent this harm (EMPs notwithstanding, see below).

Despite sea lice costing the industry many tens of millions of pounds a year in deaths and treatments, many farm managers are unable to routinely keep farm sea lice numbers below the SSPO's own Code of Good Practice levels. These levels are substantially lower than the Scottish Government's notification and action thresholds, but 500% higher than the Aquaculture Stewardship Council's threshold level for preventing farm sea lice harming migration wild salmon smolts in spring. There are many examples of this failure to control lice numbers. Here are the weekly counts of average adult female lice per fish from Clashnessie Bay, as an example:

29-Mar	05-Apr	12-Apr	19-Apr	26-Apr	03-May	10-May	17-May	24-May	31-May	07-Jun	14-Jun	21-Jun	28-Jun	05-Jul	12-Jul	19-Jul	26-Jul	02-Aug	09-Aug	16-Aug	23-Aug	30-Aug	06-Sep
5.26	5.54	4.24	6.43	6.11	3.21	4.82	5.86	6.21	4.8	5.08	4.49	2.96	1.73	2.46	2.06	5.38	5.94	8.00	7.84	10.47	7.98		9.04

*Table: Extracted weekly average adult female sea lice numbers per fish, from weekly published data, [SEPA](#), for Clashnessie Bay site. Aquaculture Production Businesses (APB) are required to report the weekly average adult female sea lice (*Lepeophtheirus salmonis*) numbers per fish on farm sites to Scottish Ministers no later than 8 days after the end of the reporting week. This data appears as 'WEEKLY_AVERAGE_AF' in the table.*

The present system does not assess the impact on wild fish of lice from multiple farms, either proposed or existing.

For example, the Greater Clyde contains 16 salmon farms. Together they contain more salmon than the entire wild Scottish population. Six more finfish farms are being considered for planning permission, and one other farm expansion.

There is clear evidence that wild salmon are disappearing from the breeding rivers that flow into the Greater Clyde. Sweep netting by Fisheries Management Scotland/the local Salmon Fisheries Trusts show that wild fish in the area often have unnaturally high sea lice burdens, and there is ample modelling evidence that sea lice from multiple farms threaten these fish (e.g. <https://portal360.argyll-bute.gov.uk/my-requests/document-viewer?DocNo=22415923> and <https://portal360.argyll-bute.gov.uk/my-requests/document-viewer?DocNo=22447522>), yet NatureScot and Marine Scotland have advised the LPAs that will judge this risk, that they need only consider the impact of the lice from each proposed new farm in isolation.

A significant proportion of the salmon smolts passing through the Greater Clyde come from the Endrick Water Special Area of Conservation (SAC). In Scotland SACs offer the highest level of protection to the populations of their designated species, yet even in this exceptional case, earlier this year NatureScot withdrew its statutory advice regarding the proposed new fish farm at Millstone Point, that the LPA should consider the impact of lice from all the farms in the area, instead of accepting that a single-farm Environmental Management Plan would be sufficient.

A doubling of fish farm production can quickly be achieved by this kind of 'salami slicing', without the regulators ever being obliged to raise their eyes beyond the individual effect of each farm they consent. The argument goes that each new farm cannot make a material difference if it represents only a small fraction of the total existing farmed fish biomass in a waterbody, but if several farms are consented on this basis, after just a few years the overall biomass will have doubled and a material difference is all but guaranteed.

Pollution

Terrestrial polluters must pay to clean up their waste, but, uniquely, Scotland's fish farmers are allowed to externalise this cost onto the environment and other users of the sea, jeopardising sustainable jobs that require clean water and a healthy seabed.

This industry puts more pollution into Scotland's sea than any other (Anne Anderson – SEPA. 05/03/18). The 2018 report for Scottish Parliamentary Inquiry into the environmental impact of salmon farming says: 'Scotland's target of producing 200,000 tonnes salmon in 2020 will likely emit organic waste equivalent to that of about half of Scotland's human population of 5.3 million.' (p.44 of pdf) Particulate organic waste comprises faecal material and uneaten food. In addition, the majority of feed (60% of its dry mass) is excreted by the fish as nutrients dissolved in water, which can fuel harmful algal, bacterial and jellyfish blooms.

As climate change warms the seas, harmful planktonic blooms are more likely to kill farmed fish and harm wild species, and to cause shellfish farm closures. This is happening already - in summer 2020, jellyfish blooms and disease combined to kill more than 600,000 salmon in farms around Skye, prompting Grieg Seafood to sell its Scottish operations. Climate change is also increasing the frequency and severity of storms, making escapes of farmed salmon from exposed sites more likely (for more on escapes, see below). Waste discharges need to be more strictly regulated to prevent this worsening problem.

The finfish farming industry uses five toxic substances as pesticides to treat sea lice, and then discharges the entire amount into the sea after use. All five are highly toxic to crustaceans, including the species caught by fishermen.

Pesticides are needed only because open-net farms cannot exclude sea lice. Closed-containment methods exclude sea lice completely. One of these pesticide (emamectin benzoate) has a 180-day half-life. In Shetland, [a 2016 independent study](#) (PAMP2), commissioned by the Government-funded Scottish Aquaculture Research Forum (SARF), found that the presence of emamectin benzoate in the seabed correlated with an average 60% reduction in abundance and diversity of crustaceans.

SEPA's [own peer-reviewed research](#) reinforced this finding, concluding that:

'EmBz had the biggest negative effect on the crustacean abundance and richness. This effect was detectable below the current EQS, this adds to the weight of evidence that the current EQS may not be protective of benthic ecology beyond the 100m from the cages. These results indicate that the impacts of farms may extend beyond their immediate vicinity.'

In 2018 SEPA introduced a lower interim permitted environmental standard for this compound, while the standard was being reviewed by the UK Technical Advisory Group on the Water Framework Directive (UKTAG). The interim measures applied only to a handful of farms. Three years on, the UKTAG review is still not complete and the vast majority of farms are still discharging emamectin pesticide pollution at harmful concentrations.

SEPA's regulatory regime for pesticide or waste discharges does not require zero impacts, or even low-level impacts. Instead, it seeks to limit the time and area over which serious impacts can occur.

As the industry expands, the potential is increasing for all forms of fish farm pollution to harm the environment and other jobs, yet the extent of their overall, cumulative impact, now or after the industry has doubled production, has never been assessed by the Scottish Government's agencies.

Sea lice have evolved resistive to all the existing chemicals. It is typical of this industry, that rather than switching to available and proven methods that completely exclude sea lice from farms (e.g. <https://www.akvafuture.com/> and <https://thefishsite.com/articles/novel-closed-containment-salmon-farm-launched-in-norway>), the SSPO and its members are lobbying the Scottish Government to license new, very toxic types of pesticides (neonicotinoids). This tin-ear is why the industry has lost its social licence, and the confidence of many coastal communities.

Animal welfare

The industry has a persistent problem with unacceptably high levels of mortality. Of the 200,000t of salmon Scotland produced in 2020, 27,000 tonnes died prematurely; more than in any previous year. At harvest, salmon weigh approximately 5kg, so this represents a minimum of 5.4 million dead fish. This is a gross underestimate, as young fish are much lighter.

Scottish Government statistics show that of the most recent age cohort of smolts for which there is full data (those put to sea in 2017), 26% died before harvest. This does not include the substantial number of deaths in freshwater hatcheries. (See table 28 below, from the [Scottish Government's Fish Farm Production Survey 2019](#))

Many of these fish die due to a combination of chemical and physical treatments for lice and disease when their gills have already been weakened by illness.

No other farming sector has such high levels of mortality.

Year of smolt input	Smolt input (000's)	Harvest year 0				Harvest year 1				Harvest year 2				Total % of year class harvested (survival)	Year class weight (tonnes)	Yield per smolt (kg)
		Number (000's)	Weight (tonnes)	Mean weight (kg)	% harvest	Number (000's)	Weight (tonnes)	Mean weight (kg)	% harvest	Number (000's)	Weight (tonnes)	Mean weight (kg)	% harvest			
2000	45,185	765	2,673	3.5	1.7	22,726	96,539	4.2	50.3	11,354	53,535	4.7	25.1	77.1	152,747	3.38
2001	48,643	557	1,227	2.2	1.1	23,528	90,230	3.8	48.4	15,619	73,255	4.7	32.1	81.6	164,712	3.39
2002	50,086	272	824	3.0	0.5	22,602	96,205	4.3	45.1	15,555	71,988	4.6	31.1	76.7	169,017	3.37
2003	43,083	82	276	3.4	0.2	19,596	85,792	4.4	45.5	13,920	61,850	4.4	32.3	78.0	147,918	3.43
2004	39,041	168	319	1.9	0.4	15,075	67,738	4.5	38.6	14,237	67,537	4.7	36.5	75.5	135,594	3.47
2005	37,168	0	0	-	0	14,036	64,099	4.6	37.8	14,999	69,000	4.6	40.3	78.1	133,099	3.58
2006	41,091	115	211	1.8	0.3	13,787	60,890	4.4	33.5	15,881	73,631	4.6	38.6	72.5	134,732	3.28
2007	37,853	23	40	1.7	0.06	13,011	54,759	4.2	34.4	14,133	66,448	4.7	37.3	71.8	121,247	3.20
2008	36,662	116	216	1.9	0.3	16,338	77,621	4.7	44.6	13,666	68,070	5.0	37.3	82.2	145,907	3.98
2009	38,548	81	178	2.2	0.2	18,266	85,826	4.7	47.4	13,772	66,606	4.8	35.7	83.3	152,610	3.96
2010	38,490	128	268	2.1	0.3	18,694	91,105	4.9	48.6	13,053	64,178	4.9	33.9	82.8	155,551	4.04
2011	42,733	109	307	2.8	0.3	21,502	97,744	4.5	50.3	11,283	57,073	5.1	26.4	77.0	155,124	3.63
2012	41,094	127	301	2.4	0.3	21,264	106,161	5.0	51.7	13,712	76,305	5.6	33.4	85.4	182,767	4.45
2013	40,936	0	0	-	0	20,316	101,997	5.0	49.6	10,910	56,984	5.2	26.7	76.3	158,981	3.88
2014	48,112	286	720	2.5	0.6	24,038	114,112	4.7	50.0	10,940	51,321	4.7	22.7	73.3	166,153	3.45
2015	45,465	223	626	2.8	0.5	24,633	111,163	4.5	54.2	11,094	63,262	5.7	24.4	79.1	175,051	3.85
2016	42,957	114	333	2.9	0.3	25,596	126,445	4.9	59.6	7,165	45,224	6.3	16.7	76.6	172,002	4.00
2017	46,116	0	0	-	0	21,825	110,554	5.1	47.3	12,212	70,860	5.8	26.5	73.8	181,414	3.93
2018	45,375	84	247	2.9	0.2	26,324	132,090	5.0	58.0							
2019	52,990	319	931	2.9	0.6											

Table: Table 28, Survival and production in smolt year classes during 2000-2019, [Scottish Government's Fish Farm Production Survey 2019](#), Marine Scotland Science, October 2020.

[Mowi's 2020 annual report](#) states that, 'intensified production may push the boundaries for how fast fish can grow, and cause production-related disorders relating to physical deformities and cataracts'. [Videos taken in many farms](#) show fish sick with gill disease and being eaten alive by sea lice and [horribly injured by physical sea lice treatments](#).

These are not isolated incidents. These conditions are common during the second summer of production in particular. (Data analysis below by Corin Smith)

This welfare abuse would not be tolerated if the fish were terrestrial farm animals, suffering in sight of consumers.

FULL CYCLE MORTALITY RATE ON SALMON FARMS IN SCOTLAND 2020*

Company	Farm	Stock Mortality %	Company	Farm	Stock Mortality %
Grieg Seafood Scotland Ltd	Leinish	78.3	Loch Duart Ltd	Badcall	18.2
Grieg Seafood Scotland Ltd	Corlarach	51.3	Grieg Seafood Scotland Ltd	Foraness	17.8
Scottish Salmon Company Ltd	Strone	41.5	Scottish Sea Farms Ltd	Vidlin	17.3
Loch Duart Ltd	Calbha Bay	41.2	Marine Harvest (Scotland) Ltd	Grey Horse Channel	17.1
Cooke Aquaculture (Scotland)	Winna Ness	40.1	Cooke Aquaculture (Scotland)	North Sandwick	16.7
Grieg Seafood Scotland Ltd	ColedEEP	40.1	Marine Harvest (Scotland) Ltd	Macleans Nose	16.4
Scottish Salmon Company Ltd	Sgian Dubh	39.4	Scottish Sea Farms Ltd	Slocka Ronas Voe	16.0
Marine Harvest (Scotland) Ltd	Muck	39.0	Marine Harvest (Scotland) Ltd	Greanem	15.8
Scottish Salmon Company Ltd	Grimsay	38.9	Scottish Salmon Company Ltd	Portree	14.9
Marine Harvest (Scotland) Ltd	Stulaigh	36.8	Grieg Seafood Scotland Ltd	East of Papa Little	14.8
Scottish Sea Farms Ltd	Lismore East (Walters)	36.6	Scottish Sea Farms Ltd	Fiunary	14.8
Scottish Salmon Company Ltd	Kyles Vuia	36.3	Scottish Salmon Company Ltd	Portree Outer	14.7
Loch Duart Ltd	Lochmaddy	36.1	Cooke Aquaculture (Scotland)	Vee Taling	14.4
Marine Harvest (Scotland) Ltd	North Shore	35.2	Scottish Salmon Company Ltd	West Strome	13.0
Marine Harvest (Scotland) Ltd	North Shore East	35.2	Scottish Sea Farms Ltd	Bring Head	12.9
Grieg Seafood Scotland Ltd	North Voe	34.5	Scottish Sea Farms Ltd	Bloody Bay	12.7
Scottish Salmon Company Ltd	Taranaish	33.5	Cooke Aquaculture (Scotland)	Ness of Copister	12.6
Scottish Salmon Company Ltd	Vacasay	32.6	Scottish Salmon Company Ltd	Eport Outer	12.3
Marine Harvest (Scotland) Ltd	Carradale North	31.6	Marine Harvest (Scotland) Ltd	Loch Hourn	11.4
Marine Harvest (Scotland) Ltd	Caolas a Deas East	31.4	Cooke Aquaculture (Scotland)	Djubawick	11.3
Marine Harvest (Scotland) Ltd	Groatay	30.3	Loch Duart Ltd	Sound of Harris	10.4
Scottish Salmon Company Ltd	Trilleachan Mor	28.9	Cooke Aquaculture (Scotland)	Bow of Hascosay	10.3
Grieg Seafood Scotland Ltd	Swining 3	28.7	Scottish Sea Farms Ltd	Westerbister	10.2
Marine Harvest (Scotland) Ltd	Greshornish	28.7	Marine Harvest (Scotland) Ltd	Invasion Bay	10.0
Marine Harvest (Scotland) Ltd	Camas Glas	28.6	Scottish Sea Farms Ltd	Scallastle	9.9
Marine Harvest (Scotland) Ltd	Isle Ewe	28.2	Cooke Aquaculture (Scotland)	Wick of Vatsetter	9.5
Marine Harvest (Scotland) Ltd	Caolas a Deas West	28.1	Scottish Salmon Company Ltd	Eughlam	9.0
Scottish Sea Farms Ltd	Mangaster	27.2	Scottish Sea Farms Ltd	Fishnish (B)	9.0
Marine Harvest (Scotland) Ltd	Ardintoul	27.0	Cooke Aquaculture (Scotland)	Meil Bay	8.6
Marine Harvest (Scotland) Ltd	Carradale	26.7	Scottish Salmon Company Ltd	Gravir Outer	8.5
Scottish Salmon Company Ltd	Vuia Mor	26.4	Cooke Aquaculture (Scotland)	Uyea Isle	8.3
Grieg Seafood Scotland Ltd	Setterness North	26.1	Loch Duart Ltd	Oldany	8.2
Grieg Seafood Scotland Ltd	Snizort East	25.8	Scottish Sea Farms Ltd	Toyness	8.0
Scottish Salmon Company Ltd	Druimyeon Bay	25.6	Cooke Aquaculture (Scotland)	Burkwell	7.8
Marine Harvest (Scotland) Ltd	Rum	25.5	Cooke Aquaculture (Scotland)	Bastaness	7.4
Cooke Aquaculture (Scotland)	Staid of Aithness	24.1	Cooke Aquaculture (Scotland)	Lyrawa Bay	7.0
Marine Harvest (Scotland) Ltd	Soay	24.0	Scottish Sea Farms Ltd	Fishnish (A)	6.7
Cooke Aquaculture (Scotland)	Wick of Belmont	23.3	Marine Harvest (Scotland) Ltd	Ardnish	6.4
Grieg Seafood Scotland Ltd	South of Linga	23.3	Scottish Sea Farms Ltd	Fada	5.5
Marine Harvest (Scotland) Ltd	Noster	23.2	Cooke Aquaculture (Scotland)	Quanterness	5.2
Marine Harvest (Scotland) Ltd	Seaforth	23.2	Wester Ross Fisheries Ltd	Ardessie A	5.2
Marine Harvest (Scotland) Ltd	Loch Alsh	21.4	Cooke Aquaculture (Scotland)	South Cava	3.6
Scottish Salmon Company Ltd	Ardyne	20.5	Scottish Sea Farms Ltd	Tanera	3.6
Grieg Seafood Scotland Ltd	Setterness South	20.1	Cooke Aquaculture (Scotland)	Chalmers Hope	3.4
Marine Harvest (Scotland) Ltd	Dulich	19.3	Loch Duart Ltd	Outer Bay	3.1
Scottish Salmon Company Ltd	Gometra	18.8	Cooke Aquaculture (Scotland)	East Skelwick	1.1
Cooke Aquaculture (Scotland)	Vestness	18.4	Cooke Aquaculture (Scotland)	Bay of Vady	0.7
Scottish Salmon Company Ltd	Geagill	18.4	Cooke Aquaculture (Scotland)	Ouseness	0.7

Table: Data analysis by Corin Smith

With income from North Sea oil declining, Scotland's food and drink sector is being encouraged to expand, to help support the economy. Its global and national reputation are of paramount importance but consumers have seen through the finfish farming industry's greenwashing. They have noticed that, for years, it has failed to address its welfare and environmental problems, and they have concluded that it is incapable of doing so using its open-net methods. The industry seems to prefer making greater profits than to behave more responsibly. Salmon is the UK's largest food export but the industry has a PR disaster on its hands. This is likely to affect other parts of Brand Scotland, harming us all.

As examples of the harm being done, the Advertising Standards Authority has had to [force farmed salmon producers to stop using the term 'sustainable'](#) to describe their methods, while in the US, [Mowi has been ordered to pay damages for falsely advertising](#) its farmed salmon as 'sustainable' and 'eco-friendly'.

It is not too late to turn this around but the industry will never recover its social licence to operate until it changes how it treats its fish, the environment and the coastal communities that rely on the sea being clean and healthy. At present it prefers to pay PR experts to greenwash the effect of its open-net methods.

More strict welfare regulations, proper enforcement (including unannounced inspections) and fines commensurate with the breaches are all essential.

Unlike some food and drink sectors, for instance whisky distilling, finfish farmers have shown little inclination to voluntarily reduce their environmental impact. [SEPA says that around a fifth of all finfish farms are not compliant](#) with its environmental standards and that fish farming has the worst compliance record of all the industries that SEPA oversees.

Two examples:

- For around a decade the industry refused to disclose farm level weekly sea lice counts, until forced to do so by Government.
- Despite the reputational harm of shooting seals, the industry continued doing so until the practice was banned, in order to satisfy US import requirements. Seal-proof nets have been available for years but were not widely adopted. Nets are more expensive than bullets.

Escapes:

If farmed fish survive and escape, they can outcompete or interbreed with wild fish. In Norway, this genetic introgression is judged to be as great a threat to wild fish as sea lice.

[In 2013, a study of the addition of farmed \(Norwegian\) salmon genes](#) to wild Scottish salmon found that around 25% of all sampled fish contained some Norwegian salmon genes.

Escapes are made more likely by SEPA's policy of encouraging companies to expand production in more exposed sites, in order to disperse the thousands of tonnes of waste that each large farm produces each year. Mowi has had four large escape events during storms in approximately the last two years, from three of its most exposed farms. In August 2020, around 50,000 salmon escaped from its Carradale farm. They were subsequently found in 13 wild salmon breeding rivers, as far away as Cumbria. Regulation will not serve its purpose if the rewards of breaking trust and the law are greater than the penalties. This is not only true of escapes. Fish farm regulations should include fines for escapes and other breaches of licence terms that are commensurate with the impacts, and sufficiently large to deter companies from allowing future escapes. Reducing fish farm biomass or suspending licences would be more effective than fines, given the highly profitable nature of fish farming.

Salmon also escape through holes made by seals trying to bite fish through the nets. Now that shooting seals is illegal, fish farmers want to rely more on acoustic deterrent devices (ADDs) that frighten seals with loud underwater sounds. Cetaceans such as porpoises and dolphins have more sensitive hearing than seals and also use it to 'see' underwater. ADDs effectively blind and displace cetaceans from large areas. Some companies are persisting in using ADDs, despite being warned that disturbing any

cetacean is illegal in Scotland, claiming that their devices do not cause disturbance. In practice these companies know they are unlikely to face prosecution because Marine Scotland enforcement lacks the capacity to monitor, or even measure, the level of underwater sound produced by ADDs. There is an urgent need for fish farm regulations to specify the sound output of ADDs that will not disturb cetaceans.

2. Why has that regulation to be in the form of legislation:

It is clear from the examples above that this industry has substantial and increasing environmental impacts and does not willingly self-regulate. It needs strict regulatory control and urgent reform, not in order to 'streamline' consenting and enable expansion, but, as the report of the 2018 Scottish parliamentary inquiry said, because, '...if the industry is to grow, the 'status quo' in terms of regulation and enforcement is not acceptable', and because, 'urgent and meaningful action needs to be taken to address regulatory deficiencies as well as fish health and environmental issues before the industry can expand'.

Plenty of carrots have been offered to encourage the industry to voluntarily set high environmental standards, but 20% of farms do not even manage to comply with the existing, low environmental standards.

Farm operators routinely stock their farms above the biomass limits set under their CAR licences, knowing that SEPA will not apply sanctions.

Farms also routinely exceed even Marine Scotland's/the Fish Health Inspectorate's very high sea lice thresholds, knowing that there are never any meaningful sanctions.

Farms routinely escape sanctions for animal welfare breaches, because APHA and FHI give them several days' notice, [during which time they can remove the evidence](#).

The Scottish Regulator's Code of Conduct already obliges regulators to be 'enablers', and since 2014, SEPA's and NatureScot's roles have included the promotion of economic growth. Legislation is now needed to provide the regulators with some teeth, including meaningful penalties, sufficient to change behaviour. Fines that are lower than the profits to be gained from breaching licence terms are meaningless.

3. What are the issues with the current regulatory framework:

New planning guidance on the cumulative impact of new and existing farms on wild fish

The [REC Committee's report on the 2018 parliamentary inquiry](#) into salmon farming in Scotland contains 65 detailed recommendations, many of them on the need to protect wild fish and how the planning process should be changed to achieve this. The report's recommendations regarding wild fish are listed at the end of this document.

After three years, none of these have been adopted by the Scottish Government. Meanwhile, many new farms have been consented, containing at least 50,000t of new farmed fish biomass (a minimum

of ten million additional fish). This has been done without assessing the cumulative risk posed to wild salmon and sea trout by sea lice from multiple new and proposed farms, because the regulatory framework does not allow it.

Scottish planning policy needs to be urgently updated to include new guidance on this issue and other risks to wild fish, based on the current science and on detailed hydrodynamic modelling of sea lice. Unsafe decisions are being made by LPAs now. The consenting process should be paused, according to the precautionary principle, until adequate information about this risk is available to decision-makers.

Other countries are taking the lead on the emissions of sea lice and pollution from open-net fish farms, including Denmark, Sweden, the USA (Washington State), Australia (Tasmania) and Norway.

Rather than showing leadership during a global biodiversity crisis, despite our commitment to the UN's Sustainable Development Goals and COP26 happening in Glasgow, Scotland is demonstrating to the world that it favours rapid economic growth over the future health of its vital ecosystems, which would otherwise support sustainable jobs far into the future.

Pesticides

SEPA accepts that some level of harm due to pollution is acceptable as long as the area affected is limited. This is out-dated and unacceptable to many people. This policy should be urgently reappraised and, as an interim measure (before conversion to closed-containment), new regulations should be brought in to require the capture and responsible disposal of all fish farm pesticides. The technology to do this already exists (CleanTreat) but it is being promoted by the industry purely because it would allow a highly toxic new class of chemicals to be used (neonicotinoids), rather than for cleaning up existing operations.

- In 2018, SEPA's regulatory reform of this sector promised to review its approach to protecting the marine environment from discharges of topical medicines, including full reappraisals of the toxicity of all licensed pesticides. This has not taken place.
- One pesticide, azamethiphos, was licensed in 1997 on the basis that a review of its toxicity would be conducted after three years. This is now more than two decades overdue.
- The emamectin benzoate review by UKTAG has stalled.
- Hydrogen peroxide is widely used to treat sea lice and gill disease. It is not limited at all by SEPA. [19.6m litres were dumped into the sea by salmon farms in 2019](#).
- Freshwater fish farms use formalin, a carcinogen, to control fungal diseases. Huge quantities are dumped into lochs, which are now lifeless. SEPA admits that regulations of freshwater farms needs to be overhauled, but so far it has only applied the mixing zone concept to limit the harm done by pollution to marine fish farms.
- When assessing pollution discharge (CAR) licences, SEPA is obliged to consider the impacts on other users of the sea, yet it has admitted that it has never considered the impact of discharging fish farm bath chemicals on people immersed in the sea, such as regular swimmers. There is no obligation for fish farms even to warn swimmers that the commonly-used organophosphate nerve agent azamethiphos (closely related to Novichok), is being discharged where they swim. SEPA has said that to discharge a fish farm pen's worth of azamethiphos while a swimmer was nearby would be 'reckless', yet it continues to issue CAR licences that allow exactly this.

Particulate pollution (solid waste):

SEPA allows solid waste from fish farms to smother and kill all seabed life other than two species of burrowing worm, over an area of around 135,000 square metres (for a 3000-tonne peak biomass, 12-cage farm).

SEPA also allows farms to expand the area of seabed they can pollute to this extent simply by increasing the size of their cages and/or spacing them further apart. There is no upper limit to their size. Regulatory reform is needed to set a cap on the overall size of salmon farms, especially in waters close to the coast which are most heavily used by other people, and which are home to most of Scotland's benthic priority marine features.

Planning loophole:

Fish farm operators need only consult LPAs before adding more cages to existing farms. If they do not increase the biomass at the same time the LPAs do not assess the impact of the expansion on wild fish. Farm operators must consult SEPA before adding fish biomass to existing farms, but SEPA ignores wild fish impacts, and LPAs need not be consulted. This widely exploited loophole allows existing farms to bypass the LPA's obligation to assess the impact on wild fish of adding many more sea lice hosts. Regulatory reform is needed to close this loophole.

Precautionary principle and the biodiversity duty on all Scottish public bodies:

In common with all Scottish public bodies, LPAs have a duty to promote and protect biodiversity. Wild salmon on the west coast face a clear risk from fish farm sea lice, yet LPAs refuse to apply the precautionary principle to protect them.

At least two LPAs (Highland and Argyll and Bute) claim that the Scottish Government has already applied the precautionary principle before the LPAs reach the stage of considering individual farm proposals, because the Government maintains a presumption against fish farm developments on Scotland's north and east coasts, 'to protect migratory fish'.

This planning presumption may have been effective initially, since 90% of Scotland's wild salmon breed in North and East coast rivers, but salmon populations are now in decline there as well, albeit less steeply than in the aquaculture zone. Any surviving wild salmon that might return to breed are increasingly precious. Salmon return to their natal rivers and there is widespread recognition that over time, salmon populations in different rivers have developed unique and valuable genetics. The individual river is the correct level at which to manage Scotland's salmon heritage, not by protecting only the fish from the country's largest rivers, in the east. Regulatory reform is needed to change the emphasis from national population to this more local level. Otherwise salmon will die from a thousand cuts.

Cleaner fish:

Every year millions of captive-bred lumpfish and wrasse, as well as wild caught wrasse, are put into fish farm cages to pick lice from the farmed salmon. All of these cleaner fish are then killed when the salmon are harvested. Not only is this morally indefensible but the unlicensed removal of so many wrasse from the coastal areas where they are caught is having a profound impact on the ecology there. Regulations are needed to prevent over-fishing of wild wrasse. Cleaner fish are only used because open-net farms cannot control sea lice numbers.

4. What could be done to improve the current framework and importantly the process:

The consenting process for fish farms has already almost ceased being democratic.

Local authorities say their hands are tied by Scottish planning policy and by the Scottish Government's aquaculture working arrangements, which oblige regulators to accept whatever advice their statutory consultees give them, without question. This is why Argyll and Bute Council has never turned down a salmon farm proposal to protect wild fish, for instance. It is obliged to accept Marine Scotland's advice on wild fish impacts, while routinely criticising MS for being non-committal. The Argyll Salmon Fishery Board and Trust are the LPA's other statutory consultee on wild fish impacts. They often make robust objections to proposed farms in areas where wild salmon rivers cannot meet their conservation objectives (i.e. where wild salmon are facing extinction) but the LPA ignores the advice it receives from them and their parent body, Fisheries Management Scotland.

This is a ridiculous situation. In any rational system, a firm objection would overrule an uncertain answer.

Recently, LPAs have imposed Environmental Management Plans as planning conditions, to attempt to mitigate the impact of fish farm sea lice on wild fish, but EMPs are inadequate this because the LPAs do not have the power to monitor or legally enforce sea lice numbers on farms or in the environment. The EMPs also do not cover existing all the farms, they require only two review meetings in each 20-month production cycle, so they cannot respond to high risk lice levels while smolts are migrating, and if farm operators choose not to reduce their biomass, the arbitration process is such that the LPAs would end up in expensive court proceedings, which they cannot afford.

Some farms have been operating for years without any planning consent, yet the LPAs do nothing about it. Loch Tralaig, in Argyll, is one example.

For many years, Kames Fish Farming Ltd has operated a smolt installation in the loch. It has never had an Environmental Impact Assessment. The farm's interim planning permission expired years ago and was not renewed. The company submitted an invalid application for retrospective permission, which was returned by the Council as inadequate. Kames has failed to submit a valid replacement and is under no pressure to do so. The Council openly says that it has had no compliance officer for many months and that the matter is of low priority for them. The law offers no mechanism by which the Council can be forced to act. In the meantime, the company has restocked its farm and is proceeding as normal.

At this same farm, SEPA is unable to carry out regular environmental monitoring as it is short of three staff members at its local office.

The Animal and Plant Health Agency was called in last year, to examine certain issues within their remit, but they do not come unannounced so they are unlikely to find a problem.

These are clear indications of regulatory failure. Regulation needs to be statutory because anything else is ignored. It also needs to involve organisations with the necessary expertise and it needs to be properly funded.

Crown Estate Scotland biodiversity duty and lease pricing:

Crown Estate Scotland issues leases for fish farms to use the seabed. CES seeks to maximise economic returns from this public asset but it also has a biodiversity duty. This duty is not served by allowing its tenants to degrade the environment in any of the ways outlined above, to the detriment of other users of the sea. CES claims that it discharges its biodiversity duty by only issuing leases once all the other agencies have satisfied themselves that no harm will be done. This approach misses an opportunity to use the pricing of leases as a lever to achieve improvements in farmed fish welfare, and the adoption of less damaging alternatives to open nets.

CES charges rent to fish farms on a per kilo basis, for harvested fish only. When farms are poorly managed, or degrade the shared environment so badly that many fish die, their rent falls. This offers no incentive to adopt better, more expensive methods.

In Norway, leases are auctioned and command high sums, paid up-front. This allows the authorities to offer cheaper leases to farms that adopt less damaging but more expensive methods, such as closed-containment.

There is no longer any place for large open-net farms in enclosed lochs in Scotland. The Norwegian approach to seabed leases could be used to encourage existing farms to relocate, close, or switch to closed-containment methods. The more expensive, less-damaging methods will never be adopted unless the playing field is levelled, making them no more expensive than open-nets. In Norway, the costs are coming close to parity in enclosed fjords.

Licensing:

The industry's regulators need to recognise that the sea is not a dustbin, and that Scotland is going to depend on its health long into the future. Open net fish farming is not sustainable at industrial scale. Salmon are cold water fish and climate change is already making salmon farming unviable in some areas. The companies can recoup their capital investment in about five years, so they do not mind poor welfare, high mortality rates or impacting the environment, providing they can get new farms consented quickly, before the sea becomes too warm.

With this horizon quickly coming closer, the industry's regulators owe it to the workers on Scotland's salmon farms to provide a fair transition to more sustainable methods.

The industry needs a clear timetable for this change, starting now, so it can make the necessary investments. Planned properly there will be just as many jobs farming fish in coastal communities, in truly sustainable ways. The alternative is that the industry will collapse for environmental reasons, putting fish farm workers out of their jobs.

Fish farms should have licences that are not fixed but that can be updated according to a timetable set out in advance, in order to improve the farms' environmental performance.

The Scottish Government says that it expects investment in producing super smolts to reduce interaction time at sea with wild salmon. Super smolts are larger when they are transferred from onshore recirculating (closed-containment) sites to sea cages and will spend only one year at sea, rather than two. This may mean that fewer die from lice, disease and the stress of being in rougher conditions offshore. However, larger fish can host more sea lice before dying, so the overall output of

lice may go up. Under the present two-year production system, the farms discharge less pollution in the first year when the fish are smaller, but this will no longer be the case with super smolts.

The Scottish Government accepts that closed containment technologies (land or marine) may solve certain problems, but it is content to wait until the Norwegians have tried and tested them at commercial scales. It argues that these methods can introduce their own unique set of potential issues, particularly with regard to energy requirements, water quality, water chemistry and dissolved gas management.

Scotland has enough renewable energy to power fish farms connected to the mains. The issue is with the increased spend on the energy needed for pumps. There are enormous savings to be had from no longer needing to treat fish with pesticides, physical treatment vessels, cleaner fish, and no longer having losses due to lice or the side effects of these methods.

A great deal of research and development investment is required and the larger Norwegian-owned companies are working on proof of concept in Norway but Scotland has the engineering and fish biology expertise to lead the way. Better regulation here would encourage Scottish producers, net-pen suppliers and others to innovate, without waiting for Norwegian companies, and without continuing to licence new damaging open-net farms.

5. Whether there are any examples that might provide useful insight on how this is done elsewhere:

Denmark and Sweden have banned new open-net farms in their waters. British Columbia and Washington State are removing all of theirs, to protect wild salmon. Tasmania's state government has recently announced a year-long moratorium on expansion while it makes a 10-year plan to deal with environmental impacts.

In 2019, Canada's Prime Minister announced a goal that all salmon farming in British Columbia should take place in closed cages [within five years. The ambition was repeated](#) by the country's fisheries minister Bernadette Jordan in November 2020. Among the alternatives being considered for open cages is to move the entire production to land-based facilities, closed fjord facilities or offshore installations.

'The overwhelming message from First Nations in the area is that they do not want these farms here. They feel that they should have an influence on their fjord areas, and I agree with them', the Fisheries Minister said [to the Canadian news channel CBC](#) December 18, 2020.

In 2020, Denmark's Environment Minister [announced that she was putting forward two new bills](#) that will put 'an end to the expansion of marine production', with a focus on moving production towards land-based facilities. The minister said that the aquatic environment is in crisis and 'the sea should not be a dustbin'. 'The aquatic environment is cramped in several places, but with the right technology that is constantly improving, environmentally friendly fish can be farmed in land-based fish farms, focusing on both purification and recycling of water. This is the path we should take, instead of expanding marine farming at risk to the aquatic environment.' The new law came into force on 1st January 2021.

In January this year, Norway's Minister of Fisheries and Seafood announced a [new aquaculture strategy](#) to look at sea lice, escapes and high mortality. A new scheme is also being drawn up to get more salmon farming into closed containment facilities.

[He has said](#), 'we want a development that also facilitates closed containment facilities. Customers are increasingly demanding documentation of sustainability and the environment, and although we know that Norwegian farmed salmon is one of the healthiest things you can eat, some are increasingly overlooked'.

The acting CEO of Akvafuture, which produces salmon in closed-containment facilities at three locations in Northern Norway, said: 'Now we have a new minister for fisheries who is moving ahead and will leave sustainable initiatives from himself for a whole industry in the future. The aquaculture industry is a highly regulated industry, with long production cycles, so to achieve disruptive innovation, a jump-start is needed from a political point of view – as it now seems to be coming ... It is only the imagination that limits where salmon production in closed systems in the sea in three, five and ten years if this new strategy materialises... Sea lice is a foreign word in our organisation'.

[The company expects to produce around 6,000 tonnes by 2021](#). 'However, as we are too small to have weekly harvest volume into the market, it is difficult to build a brand around this. Volume needs to be raised to connect consumers with a willingness to pay for these services with those players who actually take these measures. This adaptation would be the case in an unregulated market, which salmon production naturally cannot be. This is probably what (the minister) and the government see and want to facilitate.'

Scotland's regulatory system should also be facilitating this change, not streamlining consenting of older, dirtier methods of production.

Appendix 1:

The 2018 Scottish Parliamentary Inquiry into salmon farming Recommendations

[The 2018 Scottish Parliamentary Inquiry into salmon farming](#) made the following recommendations regarding the protection wild fish from the impact of sea lice from fish farms. None of them have yet been adopted.

The RECC RECOMMENDATION 15:

'The Committee notes the various views expressed in evidence relation to the different sea lice trigger levels and thresholds that are applied by the industry itself and by Marine Scotland for reporting and intervention purposes. It considers that the work of the FHF provides an opportunity to remove confusion around this issue and develop proposals that are appropriate both to the FishHealth management needs of the Scottish industry and to the regulatory regime. It considers, however, that these should be challenging and set a threshold that is comparable with the highest international industry standards.'

The highest international standards are agreed by NASCO, of which the UK is a member. NSACO says that fish farms should not add at all to the sea lice burden in the sea.

The Aquaculture Stewardship (farm certification) Scheme sets 0.1 adult female louse per fish as a maximum level during the wild smolt migration. [Marine Scotland's](#) enhanced monitoring threshold is 2 AF lice per fish and its intervention threshold is 6.

The SSPO's voluntary Code of Good Practice urges farmers to try to control sea lice numbers to 0.5 AF lice per fish during smolt migration. There are no penalties and failures to achieve this are frequent.

RECC RECOMMENDATION 17:

'The Committee notes the concerns expressed in evidence that enforcement action in relation to breaches of sea lice levels has not been sufficiently robust to date. It is therefore of the view that if the revised compliance policy is to be effective it must be robust, enforceable and include appropriate penalties.'

RECC RECOMMENDATION 40:

'Although there is a lack of definitive scientific evidence of the various factors that are contributing to the decline of wild salmon stocks, the Committee is nevertheless of the view that a precautionary approach should be taken which will seek to minimise the potential risk to wild salmon stocks wherever possible.'

RECOMMENDATION 41:

The Committee suggests that the siting of salmon farms is key to managing any potential risk to wild salmon stocks and ensuring that the sector is managed responsibly and sustainably

RECOMMENDATION 45:

The Committee shares the view of the ECCLR Committee that the siting of farms in the vicinity of known migratory routes for wild salmon must be avoided.) The Committee understands that there is at present only limited empirical scientific evidence to suggest that wild salmon are infected by sea lice as they pass salmon farms. However, it is noted that the Norwegian Government has taken the

decision to act decisively on this matter. It applies a strict precautionary approach and does not issue licences for salmon farms in the vicinity of wild salmon routes.

RECOMMENDATION 46:

The Committee is of the view that a similar precautionary approach must be taken in Scotland to assist in mitigating any potential impact of sea lice infestation on wild salmon. It therefore recommends that there should be an immediate and proactive shift towards siting new farms in more suitable areas away from migratory routes and that this should be highlighted in the strategic guidance on the siting of salmon farms.

RECOMMENDATION 47:

The Committee recognises that it will take time for the range of current activity by the Scottish Government (e.g. Fish Health Framework initiatives, consenting review) and regulatory bodies (e.g. SEPA finfish sector review) and action on the Committee's recommendations to be completed, with outcomes known, agreed and implemented. (see paragraph 387) Therefore, until this work is completed and the enhanced regulatory and enforcement regime is in place, the precautionary principle should be applied in a meaningful and effective manner in relation to applications for new sites and expansion of existing sites.

RECOMMENDATION 48:

The Scottish Government should provide strong and clear leadership in ensuring that the precautionary principle is applied, producing appropriate policy and guidance documents as necessary. These should make clear that the potential impact on the environment, known wild salmon migratory routes and other species must be comprehensively and robustly assessed and fully taken into account as part of the consideration of salmon farm applications.

The REC Committee notes that as the salmon industry in Scotland has evolved in recent decades, farms may have been located in areas which are now recognised as being environmentally sensitive (such as MPAs or PMFs) or are less well-suited to production for a variety of reasons. It welcomes the fact that some operators are already actively looking to relocate poorly sited farms or to consolidate farms in less sensitive areas.

RECOMMENDATION 53:

However, the Committee considers that there should be immediate dialogue with the industry to identify scope for moving existing poorly sited farms. It recommends that this should be led by Marine Scotland and encouraged with appropriate incentives for operators, such as giving favourable consideration towards allowing increased capacity at replacement sites that are known not to be environmentally sensitive. The Committee considers it to be important, however, that there is no deviation from due process in terms of granting approval for replacement sites

RECOMMENDATION 49:

The Scottish Government should support and assist planning authorities by producing planning guidance which sets out clearly how the precautionary principle should be applied and managed

RECOMMENDATION 50:

Support should also be provided to local authorities to enable planning committees to have access to appropriate training resources so that decisions on applications for salmon farms can be better informed. (see paragraph 391) The Committee is in agreement with evidence which suggests that taking a more strategic approach to the siting of salmon farms in Scotland would be beneficial, not

least in identifying the environmental suitability of both inshore and offshore locations for such developments.

RECOMMENDATION 51:

It is therefore of the view that the Scottish Government should, as a matter of priority, initiate a spatial planning exercise with a view to developing strategic guidance specifying those areas across Scotland that are suitable or unsuitable for siting of salmon farms. This work should take full account of existing strategic documents such as the Marine Plan, and incorporate an assessment of the potential impact of salmon farms on Marine Protected Areas (MPAs) and Priority Marine Feature (PMFs) and the species which inhabit them. The Committee recognises that such work will require input from the wide range of regulatory and advisory bodies which have responsibility for or engage with the sector and may therefore take some time to produce. However, it notes that Marine Scotland is already working to develop heat maps which would identify areas suitable for farmed salmon expansion and is of the view that this work might usefully inform a wider spatial planning exercise

RECOMMENDATION 52:

The Committee acknowledges the role of planning authorities in considering and deciding on planning applications for salmon farms, taking into account a range of social, economic and environmental factors. However, it is of the view that strategic guidance on the siting of salmon farms should also be viewed as a material consideration in planning terms, which would help guide the industry in making applications and planning authorities in deciding on these. The Committee calls on the Scottish Government to consider how this might operate in practice and to consider whether any changes in planning guidance might be required.

RECOMMENDATION 42:

The Committee notes concerns expressed in evidence that none of the existing regulatory bodies currently has responsibility for the impact of salmon farms on wild salmon stocks. The Committee believes that clarity must be provided by the Scottish Government as to how this apparent regulatory gap will be filled and which agency will assume responsibility for its management.