Robin Maclean
Aquaculture Industry Engagement Policy Manager
Marine Scotland

23rd July 2018

Dear Robin,

Thank you for suggesting a meeting on 25th July to discuss our concerns about the impact of aquaculture on Scotland's marine environment and communities.

This letter is divided into two parts: background information, then our questions.

BACKGROUND INFORMATION

The Coastal Communities Network

The Coastal Communities Network is a collaboration of locally-focused 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. Working together, the aim of the Network is to better connect coastal communities across Scotland, share community knowledge and expertise, and build community action on marine conservation. Network members are spread across Scotland, from St. Abbs in the South East, to Fair Isle in the far North. Not all Network members share the same issues, but where they do, the Network supports these members to come together to speak with a shared voice.

Between them these groups represent thousands of people in Scottish coastal communities. We care about representing our communities and we are here to stay.
For more information, see the website at https://www.communitiesforseas.scot/

One concern of members of the CCN's west coast groups is the harm caused by open-pen marine fish farming, particularly in light of the industry's proposed doubling of capacity, as described in its *'Strategic Plan for Aquaculture Growth 2030',* which is supported by the Scottish Government. No 3rd sector parties were invited to help draw up this plan, which requires considerable investment by the Scottish taxpayer and changes to Scotland's environmental regulatory framework.

Scotland's National Marine Plan policy AQUACULTURE 14 states that:

> *'The Scottish Government, aquaculture companies and Local Authorities should work together to maximise benefit to communities from aquaculture development.'*

Contrary to this, the people and communities we represent feel that the industry and government have emphasized community benefits without taking proper account of the risks

Coastal Communities Network, Scotland
C/o Fauna & Flora International
5 Rose Street
Edinburgh, EH2 2PR

Website www.communititesforseas.scot
Email info@communitiesforseas.scot
Telephone 0131 243 2790

posed by open-net fish farming, as it is currently practiced, to our sustainable jobs and to the environment in which we live.

The industry's claims about the economic benefits are exaggerated. A socio-economic study of Wester Ross, submitted to the REC Committee's inquiry, shows that aquaculture can hit more sustainable jobs. Not all coastal communities want more fish farms, but Scottish and Local Government policy is biased in the industry's favour.

Strategic Goal B - Target 7 of the *Scottish Biodiversity Strategy Report to Parliament 2011-2013* states that, in accordance with the country's commitment to the UN's 'Rio' Convention on Biodiversity: *'By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.'*

Rather than being managed sustainably to conserve biodiversity at present, Scottish salmon farming is experiencing crises due to sea lice and disease outbreaks, dramatically increased fish mortalities, the contamination of sea lochs by organic waste and pesticides, declines in the west coast's wild salmonid populations and the illegal disturbance of cetaceans by Acoustic Deterrent Devices.

The thousands of people we represent are increasingly aware of these problems and are losing faith in the safety and quality of Scottish salmon. A PR disaster is brewing for the industry, and for the Scottish Government if it is seen to uncritically support industry expansion while these problems remain unresolved.

The Scottish Government's policies and the Community Empowerment Act are supposed to show a commitment *'to supporting our communities to do things for themselves, and to make their voices heard in the planning and delivery of services'* but the communities most affected by aquaculture are not being consulted properly about its planning and regulation, or given sufficient information about its impacts to allow them to make good decisions.

Communities' opinions are material considerations in the local planning process, the only democratic part of the consenting process, but councillors on Argyll and Bute's Planning Committee routinely dismiss such informed public objections on the impact on wild salmonids. The Head Planner tells us that these objections will continue to be outweighed by advice from Marine Scotland unless that advice says that aquaculture development will have a significant impact.

Marine Scotland is not giving adequate advice to the LPAs on the impact of aquaculture on wild salmonids, and on the LPAs' obligation to undertake Strategic Environmental Reviews of this impact, at a larger scale than individual waterbodies.

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The latest research

The '*Interactions and effects of sea lice on wild salmon'* section of the Scottish Government's website (http://www.gov.scot/Topics/marine/Salmon-Trout-Coarse/Freshwater/Research/Aqint/sealice), says: *'Currently there is no information on the impact of sea lice from aquaculture on wild salmon in Scotland.'*

We are not convinced that this is the case. It is contradicted, for instance, by the *'Summary of Science'* section of the same website, which says:

> *'Salmon aquaculture can result in elevated numbers of sea lice in open water and hence is likely to increase the infestation potential on wild salmonids. This in turn could have an adverse effect on populations of wild salmonids in some circumstances.'* …

And that:

> *'Scientific evidence from Norway and Ireland indicates that early protection against salmon lice parasitism results in reduced absolute marine mortality, increasing recapture rates of experimental salmon, and reduces the time spent at sea, indicating that salmon lice can influence the population status of wild salmon.'*

These are the same species of fish, impacted by the same species of parasite, in countries that straddle us geographically, so this information is clearly relevant to Scotland. The same Government web page acknowledges that Scottish sea trout are impacted as well:

> *'there is scientific evidence that individual Scottish sea trout can experience physiological detrimental burdens of salmon lice in areas with salmon aquaculture*…'

Both species are Priority Marine Features of conservation concern. The impact on Sea trout is made worse by their longer exposure to sea lice in coastal waters as they do not migrate.

The *'Summary of information relating to impacts of salmon lice from fish farms on wild Scottish sea trout and salmon',* on the Government's website, does add that:

> *'The magnitude of any such impact in relation to overall mortality levels is not known for Scotland'* … *'the effects on* (sea trout) *populations in different areas is not known' and 'the magnitude of any such impact in relation to overall mortality levels* (of wild salmon*) is not known for Scotland'.*

However, this does not take account of the most recent research, which shows a clear risk of significant harm to the west coast population of wild salmonids. The most recent studies cited on the *'Summary of inf*ormation' web page were published two years ago.

The 2018 SAMS report for the parliamentary inquiry into the environmental impact of salmon farming considered the impact on Scotland's wild salmonids due to sea lice:

> *"there is a gradually emerging body of evidence, from studies elsewhere, that sea lice not only have the potential to have a negative effect on wild salmon, but that in many situations this is likely to be the case... any additional pressure, such as increased*

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sea lice burdens, is undesirable, and could further erode the conservation status of vulnerable wild populations".

Genetic introgression was described in the report as having a population level effect on wild salmon on the west coast. The SAMS report is clear that there is a significant risk of disease transfer from farmed to wild fish but that there is a large knowledge gap. This alone should be enough to trigger the precautionary principle.

New research, too recent to be included in the SAMS report, adds more evidence of widespread harm:

A study on Skye (pub. March 2018) shows that sea lice numbers are higher on wild sea trout living closer to fish farms, than on those further from them, and concludes:

'our data add to the empirical evidence that L. salmonis *from farms can cause fatal infestations of wild* S. trutta *and highlight the importance of limiting* L. salmonis *abundance on farms to improve wild salmonid survival.'*

(The influence of aquaculture unit proximity on the pattern of L. salmonis *infection of anadromous* S. trutta *populations on the Isle of Skye, Scotland*. I. Moore *et al*. Journal of Fish Biology (2018)).

This study was peer reviewed and non-partisan, being part-funded by Grieg Seafood, while Marine Harvest Scotland and The Scottish Salmon Company assisted with field work, sample collection and site access permission.

Previous studies found similar results in other parts of the west coast, for instance, almost a decade ago at the Scottish Government's Loch Shieldaig Research Site, Middlemas *et al* (2010) found, across five successive farm cycles from 2000 to 2009, that the percentage of sea trout with lice, and those above a critical level, were significantly higher in the second year of a two-year farmed salmon production cycle. These patterns were mirrored in 2002– 2003 across the Scottish west coast.

Their conclusion states: *'The results suggest a link between Atlantic salmon farms and sea lice burdens on sea trout in the west of Scotland*.'

Specifically on salmon, a review by the Norwegian Institute for Nature Research, published this year, (*Impacts of salmon lice emanating from salmon farms on wild Atlantic salmon and sea trout*. Thorstad, E.B. & Finstad, B. 2018. NINA Report 1449: 1-22), concludes:

'*In sum, the combined knowledge from scientific studies provides evidence of a general and pervasive negative effect of salmon lice on salmonid populations in intensively farmed areas of Ireland, Norway and Scotland.*

Premature migratory return, increased marine mortality and reduced growth of survivors that are induced by elevated salmon lice levels inevitably imply a reduction in numbers and body size of fish returning to freshwater for spawning, and hence in number of fish available to fisheries.

Levels of additional mortality by salmon lice as indicated in several scientific studies may result in salmon stocks not achieving river specific conservation limits and, if sustained over time, could result in significant cumulative reductions in adult salmon recruitment.'

SARF has just published (June 2018) the results of a three-year sea louse inoculation control study. It compared the number of tagged wild salmon smolts returning to the River Lochy (west coast) to the Conon (east coast. Only 2 of the 3229 smolts tagged in the Lochy were detected again as adults, while 52 of the 4012 smolts tagged in the Conon were detected: 21 times more, in proportion to the numbers tagged in each river. The evolution of sea lice to resist chemotherapeutants was not controlled for in this study and may explain the low returns of treated and untreated classes of west coast salmon smolts. There is no doubt that these results show a crisis of salmon recruitment in the west coast river.

The Marine Scotland Science report *'Using Catch Data to Examine the Potential Impact of Aquaculture on Salmon and Sea Trout'* states that, based on trends in the farming (west coast) area between 1952-2009, of all-Scotland salmon rod catch and pre-fishery abundance, that:

'From roughly 1990 the farmed areas decline relative to non-farmed areas, which is consistent with there being an impact of salmon farming on wild salmon'.

The study points out that this does not prove a causative link and also says:

'Salmon farming is one of a range of factors which may affect survival of wild salmon and sea trout. At present it is not possible to determine either the absolute or relative influence of these different factors.'

Electrofishing surveys and fish counter data are independent of rod-catch effort, which varies from year to year. West coast counters, for instance on the River Awe, shows that wild salmon returns are in steep decline in the 'aquaculture zone'.
After the first 30 weeks of 2017, the Awe's salmon figures were at an all-time low; just one third of the 2016 figures.

In *'Collapse of Loch Maree Sea Trout: How Culpable is Salmon Farming?*' A. F. Walker. 2016, Dr Walker (formerly senior scientist at the Scottish Government's Fisheries Research Services) concludes that,

'the introduction of salmon farming in Loch Ewe close to the River Ewe's estuary played a prominent part in the changes in sea trout stock dynamics in the River Ewe system, leading to the collapse of the angling fishery in Loch Maree. The rapid change in sea trout stock structure there in the late 1980s was consistent with many other badly affected sea trout fisheries throughout the West Highlands and Islands following the development of local intensive coastal salmon farming. There is no evidence of a collapse of sea trout catches or loss of large specimens in North Coast rivers' …

'In marked contrast to these observations, a long term investigation (Walker, 2006b) of the sea trout and brown trout population of a large headwater stream (Findhu Glen Burn) in the upper River Earn catchment, in eastern Scotland, found no significant change in the

marine growth, body size, age, or sex composition of the stock over a 23-year period, during 1980 to 1986 and 1990-2003.'

'A synchronous collapse of sea trout abundance, marine growth, survival and total fecundity and angling fisheries in western Ireland occurred soon after the introduction of salmon farming in Killary Harbour, the sea loch receiving the flow from the River Erriff, the National Index Catchment for Ireland (Gargan et al., 2016). Long-term trapping and marking studies there and in the nearby Burrishoole system found sharply reduced marine survival levels between 1988 and 1990 and a failure of stock recovery (Poole and Whelan, 1996; Poole et al., 2006).'

'there appears to have been no decrease in lice problems for the industry despite their efforts to control sea lice and deep concerns remain within the industry over site to site infective lice transmission, which can take place over large distances (≥30 km)....it has been established beyond reasonable doubt that epizootics of infective stages of sea lice are likely to come from caged salmon held in very large concentrations, unless adult lice levels on the farms are controlled to nearly zero levels. Also, the problem worsens in warmer conditions due to accelerated lice development and our seas are known to be warming.'

'By 2014, it was reported at NASCO (2016) that the numbers of captive farmed salmon in the North Atlantic had risen to 1900 times the numbers of wild salmon, sea trout and anadromous Arctic charr … the international salmon farming industry patently is already failing adequately to control sea lice and related disease infection to levels which are safe for wild salmonid fish populations (NASCO, 2016).'

'…in combination, physical damage on farmed fish caused by sea lice increases the risk of diseases spreading from intensive cage-rearing to wild salmonids…Captive populations can be treated with medicines, but wild fish cannot. In addition, sea lice infections beyond low threshold levels can cause significant physiological challenges to wild sea trout and salmon post-smolts, increasing their vulnerability to predation... Those heavily lice-infested wild fish which survive long enough to mature grow less well, are smaller in body size and produce fewer eggs. The combination of smaller and fewer adults can cause drastic reductions in total egg deposition.'

'…given the critical status of sea trout stocks in the River Ewe and other north-western systems and lack of evidence of any sustained recovery on the horizon, many people believe it is incumbent on Government to require more radical conservation measures to be implemented, including stronger controls on the management of sea lice and infectious diseases and re-siting of the salmon farms which are presently in close proximity to important sea trout and salmon rivers.'

… 'The best solution appears to lie with closed-containment.'

'Under Scots law sea trout enjoy the same legal protection as wild salmon and, in 2007, both brown trout and sea trout were included in the UK Biodiversity Plan Priority Species List.'

As a member of the EU, the UK is a signatory of the North Atlantic Salmon Conservation Organisation. Under 'Impacts of aquaculture' in the '*EU-UK (SCOTLAND): REPORT OF IMPLEMENTATION PLAN FOR MEETING OBJECTIVES' 2009 (para* 3.21) NASCO says:

> *'In many rivers in the areas of Scotland where fish farming takes place, catches and stocks of both salmon and sea trout have declined in the past two decades. … in general the overall decline started before the salmon farming industry developed. Nevertheless, it is likely that impacts of aquaculture, and most probably the effects of sea lice and escapes of farmed fish, have contributed to the decline in stocks.'*

NASCO urges all its member states to achieve zero impact of sea lice on wild fish and zero escapes of farmed fish. There is no safe density of sea lice for wild salmonids, above the natural background level.

This is reinforced by Marine Scotland Science's advice to LPAs on sea lice levels, regarding planning permission:

> *'Information from the west coast of Scotland suggests lice from fish farming can cause a risk to local salmon and sea trout… The greater the number of lice on the farm the greater the risk to wild salmon and sea trout….it should be noted that adherence to the suggested criteria for treatment of sea lice stipulated in the industry CoGP may not necessarily prevent release of substantial numbers of lice from aquaculture installations.'*

The SAMS report 2018 concluded that,

> *'the main treatment methods used in Scotland are experiencing reduced efficacy in dealing with sea lice on farms. ...The legislative and voluntary frameworks that underpin the management of lice levels on farms are not transparent. They appear neither to be succeeding in controlling sea lice, nor capable of addressing the environmental effects of the lice' … 'With the currently high marine mortality rate for wild salmonids, and threatened status of many river stocks, any additional pressure, such as increased sea lice burdens, is undesirable, and could further erode the conservation status of vulnerable wild populations.'*

<u>Marine Scotland's advice to Local Planning Authorities</u>

It is widely acknowledged by the Scottish Government and Local Planning Authorities that a higher biomass of farmed fish held in open nets poses a greater risk of harm from sea lice, disease and escapes, but there are few ways for the biomass of fish held in a farm to be limited: FHI are only allowed to cap fish biomass to benefit the farmed fish and SEPA maintains that it can only limit biomass to reduce pollution.
This leaves Argyll and Bute and the Highland Councils as the main arbiters of how many fish are farmed on the mainland's west coast, giving them responsibility for the cumulative impact on wild salmonids and other marine animals and habitats, of all the sea lice, disease agents and pollution produced by every farm that has already been consented, as well as a large part of the industry's proposed doubling of capacity. This is why MS's advice to the LPAs matters so much.

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Argyll & Bute Council acknowledges that its planning department and the councillors on its Planning Committee are the people worst placed to make consenting decisions on salmon farms, as they know the least about wild fish issues, therefore Local Planning Authorities consults MS for advice about the impact of salmon farms on wild salmonids. This advice influences whether the Councils request an Environmental Impact Assessment from developers (which often does not happen when existing farms are being expanded).
MS's advice also determines whether the LPAs are obliged to apply the precautionary principle, as Mr Gilmour, Head of Planning at Argyll and Bute Council, explained in an email dated 15th June:

> 'Where *it is identified through consultation that the proposed development may impact on nationally or internationally significant natural heritage resources, and that impact is uncertain but there is sound evidence indicating that irreversible damage could occur, the Council will then apply the precautionary principle in accordance with the provisions of Para 204 of SPP.*'

The SAMS report, the ECCLR committee's and other research contain sound evidence that aquaculture is causing an impact of national significance on wild salmon and sea trout in the west of Scotland, but MS does not say this to the LPAs when it is consulted by them about planning applications for individual salmon farms.
Argyll and Bute's Planning Officer has described MS as 'sitting on the fence'.

Largely as a result of MS's non-committal advice, the LPAs usually dismiss public objections about harm to wild fish and approve almost every proposal, most recently for the expansion to 3500 tonnes of the existing farm at BDNC Loch Shuna, close to the River Add, a wild salmonid breeding river. Planning permission was granted on a 'proposed, seconded' basis under delegated powers, without an environmental impact assessment, even though this farm will be 40% larger than any other fish farm in Scotland. It is clearly in the wrong place, sited in coastal waters used all year by sea trout, and by wild salmon smolts on migration.
SEPA says there are 10 farms within 15km, holding 16,600 tonnes of fish. The area has some of Scotland's worst records for sea lice. The council did impose an EMP requiring monitoring of wild fish but they have previously told the RECC that these EMPs are inadequate 'sticking plasters'.
According to Mr A'Hearn, SEPA's intention under DZR, to license farms larger than 2500 tonnes, is that they will be sited offshore, where sea lice will not be such a problem. This shows SEPA's perception of the risk of doing otherwise.

<u>Large-scale, cumulative impacts are not being assessed</u>

The National Marine Plan states that the: *'Development and use of the marine environment must not result in significant impact on the national status of Priority Marine Features'*. Wild salmonids are PMFs.

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Furthermore the Marine (Scotland) Act 2010 requires that,

> *'decision makers should act in the way best calculated to further the achievement of sustainable development and use, including the protection and, where appropriate, enhancement of the health of the Scottish marine area'*,

The Scottish marine area is much larger than the scale considered by Local Planning Authorities, when assessing individual fish farm planning applications.

The latest hydrodynamic modelling study (*Temporal variability in sea lice population connectivity and implications for regional management protocols*. T.P. Adams, D. Aleynik, K.D. Black. SAMS. AQUACULTURE ENVIRONMENT INT Vol. 8: 585–596, 2016) shows that the cumulative impact of multiple farms is significant at this largest of scales, because viable sea lice larvae can be transported from the mainland to the Outer Hebrides, and others back again. The study concludes that sea lice cannot be managed effectively unless all farms on a 100km scale are treated synchronously.

Argyll and Bute Council refers consultees to the *'ENVIRONMENTAL IMPACT ASSESSMENT PRACTICAL GUIDELINES TOOLKIT FOR MARINE FISH FARMING'*:

> *'The cumulative effect of new or modified fish farms on the environment and landscape should be assessed with respect to other projects, plans, developments and existing facilities.*
> *Assessing cumulative impacts is an important aspect of EIA's for marine fish farming as there is a potential for individually minor actions to become significant when considered in combination with other major or minor actions, particularly in a sea loch or voe basis. The cumulative impact depends on the capacity of areas to accommodate development,'*

Despite their clear obligation to consider large-scale cumulative impacts, the LPAs only consult Marine Scotland on the individual impact of each new proposal, saying:

> *'You should advise (*whether*): You consider that **the proposed development** will be likely to have "significant effect" on the environment by virtue of its nature, size or location'*.

As a result, MS gives the LPAs non-committal advice, because any single development increases the total biomass of farmed fish by only a small percentage, albeit by thousands of tonnes.

We would be obliged if you would answer the questions we have about these matters, in the next section, in writing as well as verbally.

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Coastal Communities Network

Scotland

On behalf of the named Coastal Communities Network members:

Community Association of Lochs and Sounds (CAOLAS)

Community of Arran Seabed Trust (COAST)

Craignish Restoration of Marine and Marine and Coastal Habitat (CROMACH)

Friends of the Sound of Jura

South Skye Seas Initiative

Save Seil Sound

And supporters:

Sealife Adventures; Ainsley Smith and Co Accountancy

cc
Roseanna Cunningham Cabinet Secretary for the Environment, Climate Change and Land Reform,
Fergus Ewing, Cabinet Secretary for the Rural Economy,
Mairi Gougeon, Minister for Rural Affairs and the Natural Environment,
Edward Mountain MSP, Graeme Dey MSP, Gail Ross MSP, Michael Russell MSP, Claudia Beamish MSP, Mark Ruskell MSP, Kenneth Gibson MSP, Kate Forbes MSP, Donald Cameron MSP, John Finnie MSP, John Mason MSP,
ECCLR Committee clerks, REC Committee clerks,
Angus Gilmour, Head of Planning, Argyll and Bute Council,
Sally Thomas, Head of Policy and Advice. SNH,
Anne Anderson, Chief Officer Compliance and Beyond. SEPA.

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OUR QUESTIONS

Most of the following questions are specific to the impact of aquaculture on wild salmonids. Many also have broader implications for the wider environmental impacts of aquaculture. Please answer these questions in writing as well.

1. Risk of impacting wild salmonids

1.1 **Is Marine Scotland certain that salmon farming poses no risk to the west coast populations of wild salmon and sea trout, after using the available mitigation measures?**

1.2 **Please confirm that marine fish farming will not pose such a risk if it doubles in capacity by 2030.**

1.3 **How does Marine Scotland know with certainty that there is no such risk, given that these species are suffering steeper declines on the west coast than on the east and north coasts?**

1.4 **If there is such a risk, how does MS communicate it to the LPAs?**

2. The presumption against fish farming on the E and N coasts

Mr. Gilmour of A&B Council has stated, that because Scottish Planning Policy says:

'The planning system should: … guide development to coastal locations that best suit industry needs with due regard to the marine environment; and *Maintain a presumption against further marine finfish farm developments on the north and east coasts to safeguard migratory fish species',*

…it therefore follows that:

'Via this policy the Scottish Government has in effect directed finfish farm development to locations on the west coast of Scotland by establishing, on a precautionary basis, a presumption against such development on the north and east coasts. The policy acknowledges that fish farming is likely to have some adverse implications for the interests of wild fish, and identifies that development is therefore best guided to coastal locations on the west coast having regard to the marine environment.'

2.1 **Why is there a presumption against fish farm development on the north and east coasts?**

2.2 **Have the Local Planning Authorities asked Marine Scotland this question, or has MS told them the answer anyway?**

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3. Environmental Impact Assessments

The EIA Directive, The Environmental Assessment (Scotland) Act 2005 and The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 require environmental assessments of developments that are likely to have significant effects on the environment by virtue of their nature, size or location.

Although the Royal Commission on Environmental Pollution (2004) recommended that EIAs should be carried out for *'every application for a new or significantly modified fish farm',* the Local Planning Authorities instead decide whether EIAs are necessary (screening), and which potentially significant impacts they need to cover (scoping).

The SARF040A review *'Environmental Impact Assessment (EIA) Thresholds For Marine Fish Farms' (*2010), says that when these developments might have significant effects on the environment, that the threshold for triggering EIA screening is *'a development or extension to a development, taking the combined new development to a scale greater than 100 tonnes of biomass of fish or 1,000 m2 of farm area.'*

It also says that the following thresholds apply to 'intensive fish farming':

(b) where the development is situated in marine waters, the development is designed to hold a biomass of 100 tonnes or greater; or

(c) the proposed development will extend to 0.1 hectare or more of the surface area of the marine waters, including any proposed structures or excavations'.

Adding that: 'The EIA thresholds apply to a proposed extension to an existing development, taking into account the current scale of the existing development, i.e. the thresholds apply to the entire development, as amended.'

3.1 **Are these the current thresholds for requiring an EIA of individual aquaculture developments, including expansion at existing sites?**

3.2 **If so, why do you not advise the LPAs to request an EIA every time they are exceeded?**

As a result of the IRSAC review, Marine Scotland agreed to review the EIA templates in the light of the new EIA Regulations.

3.3 **How will this review change the EIA trigger thresholds and the scale of your assessment of cumulative effect?**

To complete the EIA process, the Planning Advisory Note PAN58 says:

'the actual impacts of a project and the mitigation measures have to be monitored and compared to those predicted. This is an essential part of the process. It will demonstrate

that the time and money invested in the EIA by all the parties is being taken seriously and enable corrective action to be taken if required'.

3.4 **Has MS ever performed this essential part of the EIA process in relation to wild salmonids, by comparing the actual outcomes, after mitigation measures, with the predicted outcomes?**

When they do not match, has MS taken corrective action?

The EIA screening process is automatically triggered if a project is likely to be located within a 'sensitive area'. Scottish Planning Policy says that Marine Scotland is obliged to explain it's, *'locational policies when identifying areas potentially suitable for new development, and sensitive areas which are unlikely to be appropriate for such development'*.

The locational policies and maps included in the National Marine Plan only show MSS predictive modelling *'to estimate nutrient enhancement and benthic impact in sea lochs or similar water bodies supporting aquaculture'*, rather than areas that are sensitive for wild salmonids.

3.5 **Please provide your locational guidelines with regard to impacts on wild salmonids, identifying the areas on the west coast that are suitable for new aquaculture developments, and the sensitive areas defined as unlikely to be appropriate for such developments.**

4. Strategic Environmental Assessment

Scotland's National Marine Plan includes the following objectives and marine planning policies for the expansion of aquaculture:

'With *due regard to the marine environment and carrying capacity, support for the industry's target to grow marine finfish (including farmed Atlantic salmon) production sustainably to 210,000 tonnes; and shellfish, particularly mussels, to 13,000 tonnes sustainably by 2020.'*

AQUACULTURE policy 1: *'Marine planners and decision makers should seek to identify appropriate locations for future aquaculture development and use, including the potential use of development planning briefs as appropriate.*
System carrying capacity (at the scale of a water body or loch system) should be a key consideration.'

AQUACULTURE 7: *'Operators and regulators should continue to utilise a risk based approach to the location of fish farms and potential impacts on wild fish.'*

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The Environmental Assessment (Scotland) Act 2005 introduced the legal requirement that public plans, programmes and strategies be assessed for their potential effects on the environment, by a Strategic Environmental Assessment.

There is clear evidence of a significant risk that the cumulative impacts of open-net aquaculture extend beyond the waterbody/loch system scale, and, as the industry expands, that there will be a greater risk of exceeding the carrying capacity of the west coast marine environment for wild salmonids and other species.
These large-scale, cumulative impacts are not assessed by the LPAs, or included in guidance to their planning committees when they are assessing individual fish farm planning applications. This has been done in Norway however. In the NINA report it says: *'The Norwegian Scientific Advisory Committee for Atlantic Salmon has estimated the likely effect of salmon lice on the population level in an analysis that - for the first time - covered the entire country, including both farm-free and farm-intensive areas (Anon. 2017). The annual loss of wild salmon to Norwegian rivers due to salmon lice was estimated at 50 000 adult salmon for the years 2010-2014. This corresponds to an annual loss of 10% of wild salmon due to salmon lice, on a national level (i.e., 10% of the total pre-fishery abundance). Salmon lice from fish farms are identified as one of the two largest threats to wild Atlantic salmon in Norway (Forseth et al. 2017).'*

4.1 **Has Marine Scotland conducted a Strategic Environmental Assessment of the cumulative impacts of salmon farming on wild salmonids on the west coast, and on other marine organisms and habitats, as required under the Environmental Assessment (Scotland) Act 2005?** This SEA should of course include the impact of industry's plans to double its capacity by 2030.

4.2 **If it has, please provide details of the screening process undertaken to assess whether a SEA is required for the cumulative impact on the environment of all of Scotland's fish farms, and of the scoping stage undertaken to determine the scope of what should be considered in this SEA, as required by the 2005 Act.**

4.3 **Please provide details of the consultations that you are obliged to have undertaken with public bodies, the private owners of salmonid fisheries, recreational anglers and those likely to be affected by aquaculture, to determine this cumulative impact across the whole area.**

4.4 **Please provide the Environmental Report on all these impacts and plans for monitoring changes in the impacts over time, to ensure that the biological carrying capacity of the west coast is not compromised.**

This SEA should include an assessment of the whole area's biological carrying capacity for marine fish farms, the cumulative impact of all the fish farms in Scotland, currently existing and under the proposed doubling of capacity, on coastal and marine species and habitats,

Coastal Communities Network, Scotland
C/o Fauna & Flora International
5 Rose Street
Edinburgh, EH2 2PR

Website www.communititesforseas.scot
Email info@communitiesforseas.scot
Telephone 0131 243 2790

including wild salmonids, and the socio-economic impact on local communities and other users of the marine environment, through their effects on existing sustainable jobs including those in tourism and in creel fishing, where fish farm pesticides can kill commercially valuable crustaceans.

The latter is of real concern to our coastal communities. The SARF098C 'PAMP2 Refreshment Study: *'The association between emamectin benzoate use and crustacean assemblages around Scottish fish farms*' (2017) shows that emamectin benzoate use correlates with the reduction by a half, on average, of crustacean abundance at considerable distances from salmon farms in Shetland.

5. The Precautionary Principle

At the European Environmental Bureau's annual conference on 7 November 2017, the Cabinet Secretary for the Environment, Roseanna Cunningham, reaffirmed her commitment to EU environmental principles, saying:

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

5.1 **Was the Cabinet Secretary for the Environment consulted during the development of the *Strategic Plan for Aquaculture Growth 2030*, and if so, will the Scottish Government make her contributions publicly available?**

5.2 **How are the principles of 'polluter pays' being applied to aquaculture?**

The National Marine Plan contains the policy WILD FISH 1:

> *'The impact of development and use of the marine environment on diadromous fish species should be considered in marine planning and decision making processes. Where evidence of impacts on salmon and other diadromous species is inconclusive, mitigation should be adopted where possible and information on impacts on diadromous species from monitoring of developments should be used to inform subsequent marine decision making.'*

Where information is inconclusive and when there is a risk of significant environmental harm, Scottish public bodies are obliged to apply the precautionary principle. There are many such gaps in information regarding the impact of open-net fish farming on Scotland's wild salmonids.

5.3 **Where is the precautionary principle being applied in Scottish Government policy towards wild salmonids and other marine life on the west coast?**

Given the SAMS report's conclusions that:

'the main treatment methods used in Scotland are experiencing reduced efficacy in dealing with sea lice on farms. ...The legislative and voluntary frameworks that underpin the management of lice levels on farms are not transparent. They appear neither to be succeeding in controlling sea lice, nor capable of addressing the environmental effects of the lice'

and:

'With the currently high marine mortality rate for wild salmonids, and threatened status of many river stocks, any additional pressure, such as increased sea lice burdens, is undesirable, and could further erode the conservation status of vulnerable wild populations.'

5.4 **Mitigation cannot reduce the risk to the conservation status of vulnerable wild populations to zero, so why is the precautionary principle not being applied?**

5.5 **Why is the industry's expansion being encouraged and facilitated by Government policy, before new mitigation methods have been shown to reduce the risk posed by sea lice to zero?**

6. Aquaculture Working Arrangements and Biodiversity Duty

As a result of the IRSAC Review, Marine Scotland is reviewing the Government's aquaculture Working Arrangements Document, which divide responsibilities fish farm consultation/consenting between SG agencies and Local Planning Authorities.

The Working Arrangements document (5.3.3) says that Marine Scotland Science: 'the Environment Programme', deals with benthic impacts, impacts of nutrients on the water column, local capacity (Locational Guidelines) and impacts of chemotherapeutant use. The Fish Health Inspectorate deals with containment, sea lice treatment strategies, husbandry, fish health and welfare, management areas and CoGP compliance (i.e. entirely to do with farmed fish). Freshwater Fisheries deal with the risk to wild salmonid populations, and the fisheries that depend upon them (in freshwater, to judge by the name), adding *'During the statutory consultation process the Freshwater Laboratory will undertake consultation concerning wild fish populations and fisheries with other Statutory Consultees (SNH, DSFB)'.*

6.1i **Which part of Marine Scotland has primary responsibility for protecting wild salmonids when they are at sea?**
At present it seems that no agency has this responsibility.

Coastal Communities Network, Scotland
C/o Fauna & Flora International
5 Rose Street
Edinburgh, EH2 2PR

Website www.communititesforseas.scot
Email info@communitiesforseas.scot
Telephone 0131 243 2790

SNH regularly comments on the impact of aquaculture on PMFs, e.g. on *Swiftia* at Dounie, Sound of Jura. Wild salmon and sea trout are PMFs, but SNH say they cannot comment on wild fish impacts other than in SACs for salmon or pearl mussels, and in freshwater. Instead they refer all marine impact queries to MSS.
However, as wild salmonids are UKBAP species, the Aquaculture Working Arrangements document shows that SNH is allowed to comment directly on wild fish interactions, as follows:

'Where SNH have a concern over wild fish impacts, Area Officers will liaise with MSS freshwater fisheries to discuss the issues and information that may be readily available. Area Officers will then discuss the issues with the SNH freshwater advisor prior to responding to (planning) applications.'

6.2i **Why does SNH never comment on threats to wild salmonids at sea, when responding to screening and scoping requests? Will SNH's role be changed by the review?**

Biodiversity Duty

The ECCLR Committee reported to the REC Committee that it was

'unclear all agencies are fully discharging their duty in the Nature Conservation (Scotland) Act 2004 to further the conservation of biodiversity with respect to salmon farming.'

MS has a statutory duty to further the conservation of biodiversity, so that:
'by 2020 areas under… aquaculture … are managed sustainably, ensuring conservation of biodiversity' (Scottish Biodiversity Strategy Report to Parliament)
The Scottish Government's overall *Biodiversity Duty Report 2012-2014* mentions Marine Scotland only once in passing.

6.1ii **Has Marine Scotland published a Biodiversity Report?**
6.2ii **Does MS have a biodiversity 'delivery agreement' with SNH?**

Marine Scotland is a statutory consultee during the Local Planning Authorities' screening and scoping and planning permission process. Argyll and Bute LPA says it has no expertise in assessing wild fish impacts. To fulfil Marine Scotland's and the LPAs' Biodiversity Duties, MS is obliged to give sound advice to LPAs, as the Head of Planning at Argyll and Bute points out:

'In order to satisfy the Biodiversity Duty under the 2004 Act the Council;
Has regard to the views of statutory and other public body consultees in the decision-making process given that they in turn have a Biodiversity Duty responsibility under the Nature Conservation (Scotland) Act 2004.'

6.3 **As the LPAs' role in biomass determination affects sea lice numbers, why does Marine Scotland not advise and oblige the LPAs to limit biomass to take account of the cumulative impacts of sea lice on wild fish?**

Coastal Communities Network, Scotland
C/o Fauna & Flora International
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SEPA says it deals only with pollution, so its Biodiversity Duty does not apply to consenting farmed fish biomasses that will have impacts on wild salmonids via sea lice and disease transference. During SEPA's CAR licence process Marine Scotland is a statutory consultee and is obliged to give sound advice to SEPA, so as to fulfil Marine Scotland's and SEPA's Biodiversity Duties.

6.4 **As SEPA's role in biomass determination affects sea lice numbers, why does Marine Scotland not oblige SEPA to limit biomass, to take account of the cumulative impacts of sea lice on wild fish?**

6.5 **Is this aspect of SEPA's role included in the review?**

6.6 **Given SEPA's intention, under DZR, to license farms larger than 2500 tonnes, sited offshore, where sea lice will not be such a problem (according to Mr A'Hearn's statement), please give an example of such an offshore site that will have no impact on wild salmonids and other species.**

The fish farm at Muck for instance, is only 12km from SACs for pearl mussels. These die out without wild salmonid hosts. BDNC Loch Shuna is close to shore, as are Carradale N and S (all proposed 3500t expansions).

7. Acoustic Deterrent Devices

Please refer to the attached subsection on the use of ADDs in aquaculture and how they disturb cetaceans. This is a summary.

The head of Policy and Advice of Scottish Natural Heritage wrote to Marine Scotland on 28th July 2018, with the following advice for Ministers:

'ADDs used in aquaculture are of the frequency range and level that has been shown to disturb and displace cetacean species in various scientific studies. SNH advices that the potential for these impacts is real, therefore the requirements for protection conferred upon these species through the Habitats Regulations need to be considered.'

'There is sufficient evidence, both empirical and modelled, to show that ADDs can cause disturbance and displacement of cetaceans.'

'We believe there is sufficient evidence to conclude that cetaceans can be disturbed and displaced by certain types of ADDs. The same evidence pool has been used to support the use of acoustic deterrents as pre-piling mitigation (offshore wind construction) with the intention of disturbing marine mammals out of a potential injury zone.'

'We consider there is a risk of cumulative exposure in restricted areas (e.g. straits and sounds) where there are multiple ADD sources.'

'current legislative protection requires a precautionary approach where a risk cannot be discounted beyond scientific doubt.'

Coastal Communities Network, Scotland
C/o Fauna & Flora International
5 Rose Street
Edinburgh, EH2 2PR

Website www.communititesforseas.scot
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Disturbance to porpoise has been demonstrated at 100 dB by Kok et al, and hearing injury at 164 dB by Lucke et al. All aquaculture ADDs output more than 179 dB.
Newer versions of ADDs using frequencies lower than the main hearing range of porpoises, instead use frequencies heard by bottlenosed dolphins and minke whales. There is no proof that these devices do not disturb these species. European law requires there to be no doubt about this before allowing their use.

Although European Protected Species licences can be issued to disturb or injure cetaceans, there are 3 conditions that must all be met to obtain such a license, based on Habitats Directive Article 16.
A typical salmon farm could not pass any of these tests.

It is an offence *'to deliberately or recklessly disturb **any** dolphin, porpoise or whale (cetacean*)' under Habitats Regulation 39(2) as amended in Scotland.
The law applies at the level of the individual as well as at a species level.

7.1 **Why then did MS decide that SNH's advice to ministers, that ADDs disturb cetaceans, was not valid?**

7.2 **Why are marine fish farms still breaking the law by disturbing individual cetaceans with ADDs?**

There are more questions in the Acoustic Deterrent Devices subsection at the end.
Please answer these in writing, as well as the questions above.

8. Changes to regulation, environmental protection & community involvement:

The *Strategic Plan for Aquaculture Growth 2030* calls for: '*The formation of an **Industry Leadership Group (ILG**) to drive sector growth and ensure alignment between industry and government.*'

8.1 **What does 'alignment between industry and government' entail?**

8.2 **What role will environmental, community and conservation groups have in ensuring the environment is not neglected, in favour of local development plans and industry growth?**

8.3 **Do you believe that growth, as opposed to quality or environmental improvements, should be the sole priority for the ILG?**

Coastal Communities Network, Scotland
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Edinburgh, EH2 2PR

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The Strategic Plan for Aquaculture Growth 2030 calls for: *'An examination of the role of* ***Marine Scotland as both regulator and policy advocate for developmen*****t**. The date set for this recommendation is 'by July 2017'.

8.4 **Does this mean that the remit of Marine Scotland has already changed? If so, what changes have been made? Has the role of Marine Scotland as an independent regulator been compromised?**

8.5 **How will Marine Scotland reconcile the independent nature of its regulatory function with the interests of the aquaculture sector?**

8.6 **Does the Scottish Government intend to remove aquaculture development from the mainstream planning system?**

The *Strategic Plan for Aquaculture Growth 2030* calls for: 'The introduction of **Innovation Sites** to allow controlled trials and development of innovative equipment, technologies, disease control measures, and regulation.

8.7 **What are the criteria for choosing these sites and, if they have already been identified, where are they?**

8.8 **Will you lay out in detail what activities will take place at these sites and give assurances that they will not harm the environment?**

8.9 **Will these sites be subject to standard Local Authority planning applications and require CAR licences?**

8.10 **Which regulatory body or bodies will be responsible for their monitoring and oversight?**

Resources for monitoring and regulation: In view of the far-reaching consequences of the *Aquaculture Growth Plan 2030*:

8.11 **If the aquaculture sector is to double its growth by 2030, will regulatory bodies such as SEPA, SNH and MSS, as well as planning and local authorities, see a commensurate growth in their resources to monitor and regulate the industry?**

Community involvement:

8.12 **Will the Scottish Government involve environmental, community and conservation groups when considering any changes to the regulatory framework?**

Coastal Communities Network, Scotland
C/o Fauna & Flora International
5 Rose Street
Edinburgh, EH2 2PR

Website www.communititesforseas.scot
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Polluter pays: Fish farms rely on using a common good, the sea, to dispose of their pollution, and they degrade the environment in other ways as well, for instance visually, which affects tourism, by limiting access to other users and by releasing sea lice larvae. They also damage private property rights to riparian salmon fisheries.
The notes on the Rural Economy and Connectivity Committee's Meeting with the Norwegian Fisheries Minister on 8 March 2018 (on the RECC salmon inquiry webpage) show that the Norwegian Government received NOK 947 million in fish farm licence fees in 2017. That's £88 million.

8.13 **Why doesn't Scotland collect similarly substantial aquaculture licence fees?**

The money could be spent on monitoring the damage and on environmental restoration. Paying for this through a licence fee would be in accordance with the 'polluter pays' principle advocated by the Cabinet Secretary for the Environment.

In addition, since 2017, Norwegian fish farmers qualify for an increase in capacity if there are no more than 0.1 female lice per fish between 1 April and 30 September, (the salmon migration period), and if they use no more than one drug treatment per production cycle. By contrast the new Scottish Government trigger levels are 3 adult female lice per fish for the escalation of action plans and reporting to FHI, and 8 for enforcement action by MS. Even these measures are not observed, for instance, at the Furnace Quarry farm in Loch Fyne in 2017, FHI stated:
'Lice numbers over 3 and 8 (were) not reported to FHI. Lice peaked at 23.13 AF (adult female) on 21/11/16'. Despite this, FHI was still able to conclude that *'the site meets the requirement of current Scottish industry best practice at the date of inspection…'* Three other Loch Fyne farms exceeded 8 AF lice in 2017. No enforcement notice was served by FHI/MS on any of them.

8.14 **Why doesn't Scotland penalise behaviour like this and adopt a Norwegian-style reward system for responsible behaviour?**

Definitions in the Locational Guidance: The definitions in the locational guidance for current planning policy, which includes a prohibition on expanding fish farm production in 'inshore sea lochs and voes', encourage expansion in unsuitable areas. For instance Seil Sound, Shuna Sound, Loch Shuna and Loch Melfort comprise a single sea loch, and should be recognised as such in the guidelines. Seil/Shuna/Melfort fall within one entity for disease management (area 16d), and are in one Farm Management area (M40) for coordinated fallowing etc., so both government and the fish farming industry regard this as one waterbody.
However, it seems that SEPA define sea lochs more narrowly, as areas bounded on three sides by land; e.g. it recently described Pol na Gille as sited within a 'strait', although this is an integral part of the larger stretch of water described above.

The most important issues for the dispersion of pollution within a given space must be water quality and the rate of turnover, as a result of wind, tide and currents.
Scottish Ministers have so far refused to review the locational guidelines on this basis and it seems they would need input from Marine Scotland before doing so.

8.15 **Does Marine Scotland agree that water quality and turnover is the main/only issue in designating which areas should benefit from the presumption against further expansion?**

8.16 **Has Marine Scotland had regard to data regarding water quality and turnover in advising government which areas should be designated as 'inshore sea lochs and voes'?**

Farm specific, real-time sea Lice data: At the ECCLRC session in March the SSPO promised to publish near real-time, farm specific sea lice data. The ECCLRC reported:

'For that data to be most useful the Committee considers there should be no unreasonable delay in its publication. The industry should be required to publish it in real time. … The industry should also be required to publish consistent and comparable weekly historic data sets on salmon mortality on a farm by farm basis from the time records are available.

… There should be no delay in the industry publishing this information so this should initially be published on a voluntary basis by the end of April 2018.'

8.17 **As this has not happened, how are MS holding the SSPO to its promise?**

8.18 **When will SSPO start to honour this promise?**

9. Priority Marine Features

We welcome the Scottish Government's current review of the protection given to 11 benthic Priority Marine Features. However this narrowly-focused review concerns only the effect of dredging and bottom trawling on these species, when they occur outside the Marine Protected Areas specifically designated for their protection.
Other PMFs are also affected by dredging, bottom trawling and fish farm pollution, including mobile species such as the flapper skate, while many PMFs are found inside MPAs that were designated for different reasons, and may have been overlooked when those MPAs were surveyed prior to their designation.

Sessile and mobile PMFs are also cumulatively affected, at considerable distances, by the effluent, pesticides, sea lice and diseases released by open-net marine fish farms. For instance: Hall-Spencer and Bamber showed that

'maerl habitats are highly susceptible to the effects of fish-farm deposition (possibly compounded by the effects of lice treatment toxicity), showing significant disturbances to the associated crustacean fauna. High organic loading results in the long-term loss of living

maerl, upon which formation of the [maerl] habitat depends, and many species are intolerant of smothering by inorganic particulates.' (Hall-Spencer, J. & R. Bamber (2007). *Effects of salmon farming on benthic crustaceans.* Ciencias Marinas. 33(4): 353- 336.5)

The Scottish Government's, *Scotland's Marine Atlas* also says "Maerl beds are extremely sensitive to physical disturbance and smothering, as a result of scallop dredging, bottom trawling, aquaculture …'

As stated above, wild Atlantic salmon and sea trout are also PMFs.

9.1 **Will Marine Scotland also review the protection of the 11 PMFs inside every MPA, not just in the MPAs designated for their protection?**

9.2 **Will Marine Scotland also undertake a review of mobile PMFs, to ensure that they are adequately protected from dredging, bottom trawling and other forms of harm, including aquaculture?**

10. Containment

The SAMS report says *'An average of 146,000 cultivated adult salmon are reported to enter the sea from salmon farms each year in Scotland',* and: *'In Scotland between October 2002 and October 2017 approximately 2,193,886 Atlantic salmon were reported to have escaped.' 'This number of escapes equates very roughly to about half the total numbers of adult salmon in Scottish rivers.'* The report also says that escaped fish pose risks to wild salmon from interbreeding, competition and by transferring disease. MS is responsible for Containment. Since it is impossible to recapture all escaped fish and any escapes entail a risk to wild salmonids, 100% mitigation of the risk is impossible after the fact, so the containment needs to be perfect.

Storms are a major cause of mass escapes. The Working Arrangements document gives examples of acceptable attestations about containment, including that:

'Each site is assessed for geographic location, wind and wave analysis and hydrographic and bathymetric data with appropriate equipment chosen on these criteria. The 1 in 50 year storm event is the minimum standard to which our equipment is rated and guaranteed by our chosen manufacturers.'

Adding that the company must state that it has fully appraised the site using the above criteria and rated the equipment accordingly.

10.1 **How do the manufacturers assess that their equipment will allow no fish to escape during a 1 in 50 year storm event at a specific site?**

10.2 **What site-specific data do they use to model such a storm?**

Coastal Communities Network, Scotland
C/o Fauna & Flora International
5 Rose Street
Edinburgh, EH2 2PR

Website www.communititesforseas.scot
Email info@communitiesforseas.scot
Telephone 0131 243 2790

10.3 **How do MS judge if they are right?**

10.4 **With the anticipated move into more exposed conditions offshore, how does MS know the equipment will survive the conditions experienced there?**

10.5 **What characteristics does MS assume that the 1 in 50 year storm will have after, say, 25 years of climate change?**

7. Acoustic Deterrent Devices subsection - additional information and questions

Habitats Regulation 39(2)

Porpoise whales and dolphins are highly intelligent animals that rely on sensitive hearing to echolocate, to find food and to communicate. Hearing is as important to them as sight is to us.

It is an offence under European law and Scottish Habitats Regulation 39(2)[1] to '*deliberately or recklessly disturb or injure any porpoise, dolphin or whale*'.
A jet-skier was correctly prosecuted in Banff for such disturbance[9].

In Scottish Waters cetaceans are being illegally disturbed, excluded from feeding grounds and they risk hearing damage from Acoustic Deterrent Devices (ADDs) used by salmon farms to discourage seals. There is a wealth of scientific evidence to back this up.

All ADDs including so-called 'cetacean friendly' ADDs (such as the GeniusWave) output 180dB or more, well above the 100 dB threshold for disturbance[2] and the 165 dB threshold for hearing damage[3], so no ADD can meet the requirements of the law. In one study a single active ADD excluded 96% of porpoises from stations 7.5 kilometres from the device where the received sound level was 113dB[4].

Of 172 Scottish salmon farms 121 use ADDs and 70% of them use 4 or more and up to 20 ADDs per farm.

1 www.legislation.gov.uk/ssi/2007/80/regulation/10/made
2 Kok, A.C.M.,et al,.Spatial avoidance to experimental increase of intermittent and continuous sound in two captive harbour porpoises. *Environmental pollution (2017)*, https://doi.org/10.1016/j.envpol.2017.10.001
3 Lucke *et al.* (2009) Temporary shift in masked hearing thresholds in harbour porpoise after exposure to seismic airgun stimuli. *J Acoust Soc Am 125:4060-70*
4 Brandt, M. J., Höschle, C., Diederichs, K., Betke, K., Matuschek, R., Witte, S., Nehls, G. (2012c) Far-reaching effect of a seal scarer on harbor porpoises (Phoena phocoena). *Aquatic Conservation:Marine and Freshwater Ecosystems:1-11*

Coastal Communities Network, Scotland
C/o Fauna & Flora International
5 Rose Street
Edinburgh, EH2 2PR

Website www.communititesforseas.scot
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The Sound of Mull and Loch Linnie are completely ensonified. All areas surveyed by Cormac Booth[5] had measured sound levels above the 100 dB disturbance threshold established by Kok, excluding most porpoise. Those that remain do so because this is a rich feeding area, but risk hearing damage[6]. Immediate damage due to exposure to loud noise and long-term exposure to moderate levels can both lead to permanent hearing damage[7].

Last year, SNH advised Marine Scotland, the body responsible for enforcing Habitats Regulation 39(2) that: ADDs disturb porpoise, can cause hearing injury and that the protection afforded to cetaceans by the Habitats Regulations must be considered[8].
This year, the Environment Climate Change and Land Reform committee called for an end to ADD use.
Despite this advice Marine Scotland have taken no action to enforce the law.

1. **Why has Marine Scotland not prosecuted any salmon farm under Habitats Regulation 39(2) for deliberate or reckless disturbance or injury to any porpoise, dolphin or whale?**

2. **If it is not the responsibility of Marine Scotland to enforce Regulation 39(2), then which body is responsible for enforcement?**

3. It was not a defence in law for the jet skier prosecuted for disturbing a dolphin[9] that the disturbance was only on one occasion. Nor was it a defence that the disturbance only occurred over a small area. **Given that Scottish Law applies equally to all citizens, do you agree that it is an offence for a salmon farmer to occasionally disturb a cetacean with an ADD, and that it does not matter how large an area the disturbance or injury occurs in, it is still an offence under Habitats Regulation 39(2)?**

4. **Do you agree that Regulation 39(2) provides protection from disturbance at all times, regardless of the circumstances of the mammal at the time of the disturbance in question?**

5. **Do you agree that it is clear from the text of Habitats Regulation 39 that the protection applies at an individual level?**

EPS licensing

5 Booth, C. G (2010). Variation in habitat preference and distribution of harbor porpoises west of Scotland. *St Andrews PhD*
6 Lepper, P.A., Gordon, J., Booth, C., Theobald, P., Robinson, S. P., Northridge, S. & Wang, L. (2014) Establishing the sensitivity of cetaceans and seals to acoustic deterrent devices in Scotland. *Scottish Natural Heritage Commissioned Report No. 517.*
7 Gotz and Janik. Acoustic deterrent devices to prevent pinniped depredation.
8 Obtained under FOI and attached to this email
9 *https://www.banffshire-journal.co.uk/Banff/Jetskier-who-disturbed-dolphins-is-fined-500-2165.htm*

Coastal Communities Network, Scotland
C/o Fauna & Flora International
5 Rose Street
Edinburgh, EH2 2PR

Website www.communititesforseas.scot
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Under Regulation 44 of the Habitats Regulations, disturbance to cetaceans, which are European Protected Species (EPS), can only take place if an EPS licence is granted.[10]

SNH's '*Marine mammals and licencing*' paper offers further guidance, stating that, '*if injury or disturbance [to cetaceans] were likely... to result from the activity a EPS licence would be required in order for that activity to be carried out legally.'*

ADDs are used to exclude porpoise from underwater piling operations. An EPS licence is required for this. The ORJIP project Phase 1 states that a proposed scientific study would require an EPS licence in order to use ADDs during the study.

No fish farms in Scotland hold EPS licenses.[11]

6. **Given that there is scientific evidence demonstrating that ADDs disturb and can injure cetaceans, why has MS not enforced Habitats Regulation 44, by requiring farms that can disturb cetaceans with ADDs to hold EPS licenses?**

In order for an EPS licence to be granted, 3 strict tests must all be passed. A typical salmon farm could not pass any of the tests. For brevity we will consider the test requiring that there must be no satisfactory **alternatives**:
Alternatives to ADDs are being successfully used worldwide.

EC Guidance states *'Where another solution exists any argument that it is not "satisfactory" will need to be strong and robust'*[12] [13]. Here are some examples of strong and robust alternatives:

115 Norwegian farms do not use ADDs and do not shoot seals, as required by their Aquaculture Stewardship Council certification. There is only one marine farm in Scotland that has applied for ASC certification.

7. **Why does Scottish Government allow the same companies to apply lower standards of protection for seals and cetaceans here than in Norway?**

In Shetland, Grieg's Seafoods have shot only one seal since they stopped using ADDs and fitted stronger, more rigid netting in 2015.

10https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide/licensing-dolphins-whales-and-porpoises
11 Our FOI questions to MS 19/1/18 and MS response
12 http://ec.europa.eu/environment/nature/natura2000/management/docs/Aqua-N2000%20guide.pdf
13 SNH Publication, EPS Licensing Guidance – Test 2 (2011) 2.3

Coastal Communities Network, Scotland
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Farms in Turkey[14] and Tasmania[15] fit double skinned anti predator nets. These nets have the additional benefit of preventing escapes, which have been identified by an ICES report as being one of the 2 most important factors threatening wild salmonids, the other being sea lice.

The use of ADDs and killing of marine mammals are prohibited in British Columbia[16]. Companies such as Marine Harvest operate there and in Scotland.

51 Scottish farms do not use ADDs, the companies which still use ADDs are the worst offenders for seal shooting[17] and are not complying with their licensing condition to only shoot seals as a last resort.
Because ADDs are not fully effective[18], and can have a "dinner bell" effect, seal shooting will continue until farms stop using ADDs and fit better nets.

8. **Given that technical methods are used successfully elsewhere in the world to separate seals and salmon, rendering unnecessary the killing of seals or use of ADDs; why does MS not enforce the condition printed on the seal shooting licence, that seals can only be shot as a 'last resort'[19]?**

The other EPS licensing tests require that the use of ADDs would be for 'human health and public safety' or 'over-riding beneficial consequences for the environment' and then, 'favourable conservation status must be maintained'.

9. **We submit that a typical open cage salmon farm could not pass any of the 3 tests. If Marine Scotland disagrees please explain your reasons.**

The 3 tests are derived from Habitats Directive, Article 16. Rosanna Cunningham pledged that she ***'would not allow Brexit to be used as an excuse to roll back our hard-won environmental protections'*** at last year's SEA Scotland Conference.

Our EC complaint considers that an attempt might be made to change the 3 EPS licencing conditions in order to allow farms to obtain EPS licences.

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14 Güçlüsoy, H., Savas, Y. (2003) Interaction between Monk seals Monachus monachus (Hermann, 1779) and marine fish farms in the Turkish Aegean and the management of the problem. Aquaculture Research 34:777-783
15 Pemberton, D, Shaughnessy, P. D. (1993) Interaction between seals and marine fish-farms in Tasmania, and management of the problem. Aquatic Conservation 3:149-158
16 Reference attached to this email
17 FOI information SMRU report
18 Iwama, G., Nichol, L., Ford, J. (1997) Salmon Aquaculture Review: Aquatic Mammals and Other Species, Vancouver. Other references available.
19 MS Seal Shooting Licence Application form.

Coastal Communities Network, Scotland
C/o Fauna & Flora International
5 Rose Street
Edinburgh, EH2 2PR

Website www.communititesforseas.scot
Email info@communitiesforseas.scot
Telephone 0131 243 2790

10. **Should any attempt before or after Brexit be made to change the three tests needed for an EPS licence, will MS undertake to inform the minister that this will be a breach of European Habitats Directive Article 16?**

Article 6(3) and the Precautionary principle / Appropriate Assessment

The precautionary principle is a cornerstone of European environmental legislation. Article 6(3) of the Habitats Directive requires that any new or existing plan or project with the potential to impact a SAC, must be subject to an appropriate assessment. It can only be consented or allowed to continue if it can be proven beyond reasonable scientific doubt that the plan or project, in combination with other plans or projects, will not adversely affect the integrity of the SAC. Article 6(3) has been clarified by ECJ rulings Wadenzee[20] and Sweetman [21]and if correctly implemented provides a high level of protection to the SAC.

The legal requirement, to prove that the activity is ***not*** damaging, reverses the normal burden of proof and embraces the precautionary principle.

ADDs disturb / displace and can cause hearing damage to European Protected Species within the Inner Hebrides and Minches cSAC, which is designated for porpoises and is also important for bottlenosed dolphins and minke whales (all are EPS). For this reason appropriate assessments are required by Article 6(3) of the Habitats Directive on the use of ADDs, both for new and existing consents, to ensure a high level of protection for cetaceans.

Only one appropriate assessment has been carried out so far, at the BDNC Loch Shuna salmon farm, and this fell far short of the requirements of Article 6(3) to prove beyond reasonable scientific doubt that ADD use would not adversely affect the SAC. It also did not consider cumulative effects. A deconstruction of this will be added to our EC complaint.

ADDs would not work to deter seals if they did not produce extremely loud noises. Different species of cetaceans (porpoise, bottlenosed dolphin and Minke whales) have their sensitive hearing ranges at differing frequencies, so changing the frequency will not prevent disturbance to all local species of cetaceans.
No ADD has been proven beyond reasonable scientific doubt NOT to disturb cetaceans, and the potential for hearing damage cannot be ruled out, particularly from long term exposure to moderate levels of sounds from ADDs.

Marine Scotland has a problem, they are failing to enforce the law on Habitats Regulation 39(2) and no ADD has been proven not to disturb or injure any cetacean. Therefore, EPS

20 *Landelijke Vereniging tot Behoud van de Waddenzee v Staatssecretaris van Landbouw, Natuurbeheer en Visserij (2004) Case C-127/02*
21 Sweetman and others. CURIA C-258/11

licences have to be issued to allow ADDs to be used legally, but no ADD could pass the three strict tests required to issue such a licence.

Ministers have promised not to reduce environmental protections after Brexit.
If, by effectively changing the tests, EPS licences could be granted, then Appropriate Assessments would still have to be carried out on a 'plan or project' that was known to be damaging,[22] because a EPS licence has to be issued. No legally and scientifically robust Appropriate Assessment could determine beyond all reasonable scientific doubt that ADD use has no adverse impacts on the integrity of the SAC.

Argyll and Bute Planners inform us that their consent allows the installation of ADD(s), but the use of those ADDs causing disturbance / injury to cetaceans should be consented by Marine Scotland by an EPS licence.

11. **Does Marine Scotland agree that this advice from the Planners is correct? If not please explain your answer.**

View of the ECCLR Committee: report on the environmental impacts of salmon farming. 2018

247. The Committee consider Scotland needs to act now to ensure it does not fall foul of the US Marine Mammal Protection Act, which prohibits the intentional killing or serious injury of marine mammals in all fisheries. The committee considers all fish farms should be required, via legislative or other appropriate means to follow the position of the Aquaculture Stewardship Council in relation to marine mammals. This ensures that farms cannot kill marine mammals.

248. The committee has significant concerns about the use and operation of ADDs and their cumulative impact and considers that all fish farms in Scotland should be required, via legislative or any other appropriate means to follow the position of the Aquaculture Stewardship Council in relation to ADDs. This ensures fish farms cannot use ADDs.

249. The committee considers that the industry should manage the risk of predation through extension of the use of double skinned predator nets.

12. **What specific actions are Marine Scotland taking to ensure that farms cannot kill marine mammals?**

13. **What specific actions are Marine Scotland taking to stop the use of ADDs?**

14. **What specific actions are Marine Scotland taking to encourage the industry to use double skinned predator nets?**

22 http://www.parliament.scot/S5_Environment/Inquiries/20180305_GD_to_Rec_salmon_farming.pdf

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15. **The US Marine Mammal Protection Act does not come into force until 2022, however countries are required to demonstrate compliance, or working toward compliance by 2019. What specific actions are Marine Scotland taking to ensure that Scotland does not face an export ban due to non-compliance with the Act?**

We welcome the 05/03/18 Environment, Climate Change and Land Reform Committee: Report on the environmental impacts on salmon farming[23], which calls for a precautionary approach and a resolution of the environmental problems and states that they are *'not convinced the sector is being regulated sufficiently or regulated sufficiently effectively. This needs to be addressed urgently because further expansion must be on an environmentally sustainable basis*.' ***'The status quo is not an option.'***

A complaint to Europe has been registered with reference number CHAP(2018)00958. It gives fuller legal and scientific details.

23 http://www.parliament.scot/S5_Environment/Inquiries/20180305_GD_to_Rec_salmon_farming.pdf

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