

From: [REDACTED]  
To: [REDACTED] Cathy.Tilbrook; [REDACTED]  
Subject: Potential talk by [REDACTED] on Startle Tech acoustic deterrent  
Date: 25 October 2019 12:12:55

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Folks,

We have had an offer from [REDACTED] [REDACTED] to give us an update on the GenusWave tech. He's doing a similar talk for MS in Aberdeen, but this would open it up to more of us here. He's given me a few dates, November is looking incredibly busy, but we might be able to do this on ~Tues the 26<sup>th</sup> between 11am and 2pm (room wise at least). Idea being he'd come to BBY and then we can VC out to anyone who can make it.

Other potential dates are the 14<sup>th</sup> Nov after 14:30 or the 15<sup>th</sup> Nov.

Please get back to me and confirm if you would be interested in this & whether the 26<sup>th</sup> could work... please pass on to anyone else who you think might be interested.

Thanks,

[REDACTED]

The abstract is below:

*Conventional acoustic deterrent devices (ADDs) are widely used to keep seals away from fish farms and fisheries. These devices aim to deter animals by emitting sound at high source levels and duty cycles, i.e. the time and duration during which sound is emitted. The long-term success of these devices is often limited since habituation, the decrease in responsiveness to the signal, can be a significant problem. ADDs have been highlighted as a potential concern as some devices cause long-term habitat exclusion in non-target species and may have the potential to cause threshold shifts in hearing in target and non-target species.*

*An alternative can be found by inducing a startle reflex response, which causes flight and avoidance behaviour without habituation in the majority of seals. This approach only requires brief, isolated sound pulses to be emitted at very low duty cycles. Making this effective for specific species can be achieved by choosing a frequency band where the hearing sensitivity in the target-species (e.g. seals) is higher than in non-target species (e.g. porpoise & dolphins). This method has been shown to be successful in deterring seals from fish farms while not affecting the distribution of harbour porpoise in two different study areas on the West coast of Scotland. In a long-term test, a startle-reflex based system caused a ~91-97% reduction in seal predation losses over the course of one year while emitting sound less than 1% of the time. Therefore, additional benefits of this approach include a reduced level of noise pollution in areas, such as the West coast of Scotland, where there are fish farms using ADDs to deter seals. Ongoing research efforts focus on making this method available to the aquaculture market and to widen the method to other applications and species, such as the mitigation of marine mammal collision risk around marine renewable energy installations and mitigating the risk of hearing damage around marine construction sites (e.g. pile-driving).*

**Dr [REDACTED] [REDACTED] | Marine Ecology Adviser | Sustainable Coasts and Seas**

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**From:** [REDACTED]  
**To:** [REDACTED]  
**Subject:** Shieldaig Community Council's objection to Scot Salmon Co application for expansion on Loch Torridon  
**Date:** 01 May 2019 07:26:04  
**Attachments:** [Fish Farm Planning Doc Response 2.pdf](#)

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Dear [REDACTED]

Thank you for your reply on 17<sup>th</sup> April regarding SNH's current stage of looking at Scottish Salmon Company's planning application to Highland Council (19/01413/FUL) for a new 4 cage site at Aird, Ardheslaig next door to their existing 10 cage site on Loch Torridon. I've attached the Shieldaig community council's response which takes in several issues of concern for us which are specifically ones for SNH>

When you are in a position to let us tell us we'd like to know what SNH's response is to this SSC application.

Many thanks

[REDACTED] [REDACTED] [REDACTED] Shieldaig Community Council

Tel: 01520 [REDACTED]

# Shieldaig Community Council

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30th April 2019

Dear Planning Team

**IV54 Loch Shieldaig Ardheslaig North Aird - PLANNING APPLICATION NUMBER: 19/01413/FUL PROPOSAL: Marine Fish Farm - Atlantic salmon: new site consisting of 4 x 100m circumference circular cages**

**Please see the attached document and its appendices which sets out our objections to the above planning application.**

We are **strongly** objecting to the application because: (A) many aspects of the case advanced by Scottish Salmon Company in support of its application are either disingenuous or incorrect (as detailed in the attached document) and (B) no further expansion of fish farms should take place inside Loch Torridon until proper environmental controls are in place **and** enforced by the regulatory bodies.

We trust that proper weight will be attached to this Community's views, and we intend to share our views with local politicians and interested third parties to ensure that this is the case.

Yours faithfully



Shieldaig Community Council

## SHIELDAIG COMMUNITY COUNCIL

### RESPONSE TO PLANNING APPLICATION NUMBER: 19/01413/FUL

**PROPOSAL: Marine Fish Farm - Atlantic salmon: new site consisting of 4 x 100m circumference circular cages**



*Shildaig village*

### **Executive Summary:**

This Shildaig Community has always been broadly supportive of the salmon farming industry. A number of residents are employed in the industry or have worked within it previously. Shildaig residents were among the first to introduce salmon farming to Loch Torridon. We are not opposed to the principle of salmon farming; we are opposed to the expansion of this salmon farm at this location. The Council should be aware that this objection is shared throughout the Community as a whole and we attach a petition at Appendix B to illustrate the strength of that view.

We are **strongly** objecting to the Proposed Site because:

- whereas the Proposed Development will lead to more farmed salmon being sold to meet stated Government targets, some marginal gains to the Stornoway employment statistics and some incremental gains to the supply network (e.g. feed and freight), the cumulative effect of the Proposed Site on the environment and the local Community as a whole will in fact be negative;
- aspects of the case advanced by Scottish Salmon Company (“SSC”) to demonstrate mitigation of these negative effects are either disingenuous or incorrect; and
- for the reasons outlined in the November 2018 report of the Rural Economy and Connectivity Committee (“RECC”) of the Scottish Parliament (SP Paper 432) (the “RECC Report”), no further expansion of fish farms should take place inside Loch Torridon until proper environmental controls are in place and enforced by the regulatory bodies.

## **Our Community:**

The Shieldaig Community Council area includes Shieldaig village and the coastline west of the village up to Fearnmore, including Ardheslaig. The site for the proposed additional four pens (the “**Proposed Site**”) is therefore bordered to the West, South and East by the Shieldaig Community Council area.

Shieldaig village is situated directly opposite the existing Aird fish farm (the “**Neighbouring Site**”) and the Proposed Site. The village has a linear layout along the seafront (see the above photo) and along the higher ground behind giving the majority of the houses in the village an open view of the loch towards the Proposed Site. The Shieldaig Community Council area encompasses around 127 households (85 occupied, with the remainder being second homes or holiday rentals). It is a thriving community with its own primary school, pub, hotel, village hall, shop and church. There is also a new camp site presently being constructed on elevated ground overlooking the Proposed Site. The Community Council area is a popular holiday destination, being located near the Torridon mountains and situated on the North Coast 500 tourist route.

Whereas the majority of the Community’s residents are heavily reliant on tourism none of the Community’s residents are employed at the Neighbouring Site, and no new jobs for the Community will be created as a result of the Proposed Site. We have demonstrated the strength of feeling in the Community **against** the Proposed Site by attaching a petition at Appendix B, which has been signed by a majority of residents.

## **Reasons for the Shieldaig Community Council’s objection:**

### **(1) New evidence of the long-term presence of chemicals used by the industry and their toxicity/ Increased benthic and chemical impact in the Loch.**

The application will result in the maximum potential biomass at the site being increased to 2400 tonnes and a corresponding increase in chemical bath and infeed treatments. Paragraph 4.2.1.10 of SSC’s Planning Statement states that *“The modelling results indicate that short term deposition of waste would be restricted to the area beneath the cage groups. Beyond the immediate area no measurable impact is predicted due to the flushing characteristics of the Site.”*

### **The Community does not accept this statement because it believes the modelling method is inaccurate and/or unreliable.**

The application sets out evidence (p.15 Appendix K to SSC’s Environmental Impact Assessment) that whereas the majority of the biomass should settle in the vicinity of the site, 22% (i.e. nearly one quarter) of the biomass will be “exported from the model domain”. That equates to up to 528 tonnes of biomass being distributed around the loch in circumstances where:

- SSC has **not** conducted an accurate modelling exercise on the complex tidal flows and currents in the loch.

Paragraph 3.5 of Appendix K (Modelling Report) states that “AutoDEPOMOD” was the method used for modelling the effects of the increased biomass at the Proposed Site.

AutoDEPOMOD is a Government funded particle tracking computer model, developed by the Scottish Association for Marine Science, which predicts the impact of fish farm discharges on the seabed. NewDEPOMOD is the updated version which incorporates a range of new features. In October 2018 SEPA released a report (*Evaluation of a New Seabed Monitoring Approach to Investigate the Impacts of Marine Fish Farms*) where the NewDEPOMOD showed that the impact of fish farms extends beyond the boundaries revealed by AutoDEPOMOD. In its conclusions SEPA stated:

*"The new highly sensitive test for EmBz found that the chemical was present at nearly all sampling stations. This indicates that environmental exposure to EmBz was wider than has previously been found. Tef was also found to be present at a number of locations. A small proportion of these sampling stations also failed the current environmental quality standards for both these chemicals and a significant portion failed the proposed environmental quality standard for EmBz.*

Accordingly, we are in a position where applicants such as SSC use AutoDEPOMOD (which SEPA knows gives inaccurate results), and are issued a licence on this basis. This is absurd as it is widely known in the industry that NewDEPOMOD is a better depositional modelling system, particularly for sites on sloping ground like the Proposed Site. Meanwhile, neither SEPA or the SSC can be sure how the biomass and increased chemical treatments will be distributed and the extent of its detrimental effect in the Loch.

Closer examination of Figure 4.1 of the Modelling Report in Appendix K - which shows the modelled deposition of the increased biomass under the cages - reveals quite how flawed AutoDEPOMOD is. The model shows an even distribution of the biomass, despite the fact that the cages are positioned over a steep slope (going from 20 metres depth to 50 metres). One would expect the fish feed and faeces to flow somewhat down the slope, and not upwards.

The SEPA Report also stated that: *"Statistical analysis showed that EmBz had the biggest negative effect on the crustacean abundance and richness. This effect was detectable below the current [environmental quality standards], this adds to the weight of evidence that the current [environmental quality standards] 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."*

Loch Torridon has a well-established langoustine, crab and lobster fishing industry. At least nineteen villagers receive a direct financial benefit from the fishing industry.

Given that Loch Torridon is already acknowledged by SEPA to have levels of contamination that exceed current environmental quality standards and its proven detrimental impact on the local fishing industry it appears nonsensical to even contemplate further expanding salmon farming in the Loch.

- Furthermore, according to the Highland Council's own Aquaculture Framework Plan for Loch Torridon (2011), the Loch's flushing characteristics are constrained due to its topography

and narrow fjordic openings so that “*as a whole the Loch takes approximately 9 days to flush. However, each basin has its own flushing characteristics with some of the deeper waters having exchange rates significantly slower than this*”. Recommendation 54 of RECC Report acknowledges that the siting of salmon farms in locations with limited flushing characteristics **should be avoided**.

- As stated by Marine Scotland in its Scoping Opinion, the Environmental Impacts Report does not fully consider the effects of all the consented biomass in the Loch. The current consented biomass is 7285 tonnes. Over and beyond a few references, the application effectively ignores the existence of the MOWI fish farm in Inner Loch Torridon.

**The Community therefore comprehensively rejects the claim that Policy 63 (Water Environment) is met by the SSC’s application.**

## **(2) Effect of Acoustic Deterrent Devices (ADDs) on the Habitat.**

The Non-Technical Planning Statement states at paragraph 6.6 that “*The detection range of a bespoke Acoustic Deterrent Device system for the Proposed Development, is limited to areas out with the cSAC [The Inner Hebrides and Minch Special Area of Conservation].*” Further, Table 5.5 of the Environmental Impact Report (Interaction with Predators), SSC states that there are no outstanding issues to be addressed with regards to ADD deployment and the proximity of the cSAC.

**SSC has submitted no evidence to support these claims.**

The Inner Hebrides and Minch Special Area of Conservation is designated under the EC Habitats Directive as a special conservation area for the harbour porpoise “*For which this is considered to be one of the best areas in the United Kingdom*”. Appendix A, Figure A4 (Natural Heritage Designations) shows a map of the Special Conservation Area which stops at the entrance to Loch Torridon, approximately 500 metres from the Proposed Site. Appendix N (ADD Usage and Deployment Plan) recognises that the ADDs can have a negative effect on cetaceans. This issue is recognised in the Scoping Opinions by Scottish Natural Heritage (SNH), SEPA and the Highland Council (Table 5.5 of the Environmental Impact Assessment Report).

SSC has responded by stating that it keeps records of its ADD activations and mitigates the effect of its ADDs by keeping a wildlife log and manually switching off the system if its employees sight any cetaceans.

We do not believe this is an effective mitigation because:

- The site is not permanently manned meaning for the majority of the time no one is actually around to spot cetaceans and turn off any devices. Even if employees are at the site, it is absurd to suggest they will be looking around for cetaceans whilst working. By way of example, members of the Community visited the site by boat at 10.30am on 30<sup>th</sup> April. The ADDs could be heard operating, even from above the water, and there was no one present on site to turn them off. It is fair to assume they had been operating like this since the previous day and overnight, if not over several days or weeks.
- Even if staff were present, paragraph 3.2 (of the Appendix N) states that disabling will **not** occur if seal mortalities are being recorded. As the ADDs are only deployed if seal mortalities are recorded, presumably this means they are therefore never turned off, even if a cetacean is spotted.
- A new scientific paper published by The Scottish Marine Institute in October 2018 (“Mapping widespread and increasing underwater noise pollution from acoustic deterrent devices”) demonstrates that Acoustic Deterrent Devices (ADDs) **“are a significant and chronic source of underwater noise on the Scottish west coast with potential adverse impacts”**. The study’s data shows that ADD detections have been made both immediately outside Loch Torridon and inside the cSAC. Indeed, the paper states that ADDs can be detected **“at a considerable distance from active fish farms”** (20km+). Scottish Natural Heritage confirmed in 2017 that “There is scientific evidence, both empirical and modelled, which shows that ADDs can cause disturbance and displacement of cetaceans” (including the harbour porpoise). Scottish Natural Heritage further concluded that this problem is “particularly relevant in restricted environments (e.g. straits or narrows) where cumulative ADD use can present a barrier to passage by cetaceans”. Loch Torridon is a restricted environment and as the Proposed Site is 500 metres from the narrow entrance to the Loch, SSC’s ADD usage may act as a barrier to passage of cetaceans into and out of the loch (see Appendix A).
- Finally, although the Marine Noise Registry does not currently contain detailed information on ADD use in fish farms, the SSC disclosed in 2017 that it used two ADDs at the Neighbouring Site broadcasting at 12kHz and not the low range frequency (1-2kHz) which is less harmful to cetaceans and for which its units are enabled. It should be noted that SSC states in Appendix N that they currently deploy 10 devices and that four more will be deployed at the Proposed Site; and

The Community Council does not agree with the conclusion of Scottish Salmon Company that *“impacts that may affect the integrity of the cSAC were all considered to not be significant, and were thus scoped out of the requirement for further assessment.”*

This statement is yet another example of how SSC claims to have addressed the potential negative consequences of the Proposed Development, but on closer examination these claims are specious.

**We conclude that SSC has failed to show that its expanded activities in Loch Torridon will not materially affect the integrity of the Special Conservation Area.**

**(3) The Proposed Site is known to be within migratory routes for wild salmon and trout.**

The RECC report made several recommendations where farming may be close to wild salmon or sea trout migratory routes. These recommendations apply to the Proposed Site. In particular, it states that:

- *“a precautionary approach should be taken which will seek to minimise the risk to wild salmon wherever possible”* (Recommendation 40); and
- *“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**.”* (Recommendation 45).

SSC’s Planning Statement claims that “these recommendations were considered throughout the design evolution of the Proposed Development and the EIA process.” The Shieldaig Community Council is forced to conclude that even if these Recommendations were indeed “considered” by SSC, they were rejected regardless of the risks. We believe that this attitude is typical of SSC’s approach to the inconvenient truth, which is that Loch Torridon is not a place where fish farming activities should be expanded.

For example, it is stated on page 6 of Appendix D (Sea Lice Monitoring Strategy), that there is a Marine Scotland research station at the head of Loch Shieldaig. The Planning Statement states that “this data will be reviewed as part of the baseline information study [into lice numbers]” and elsewhere dismisses Marine Scotland’s lice monitoring activities as “ad hoc” (page 6 of Appendix D - Wild Fisheries/Sea Lice Monitoring Strategy).

In fact, the Marine Scotland research station has accumulated annual data on lice levels in the Loch since 2001. The lice collection technique used at the research station is standardised and time scheduled (i.e. definitely not “ad hoc”). In every year but one the data shows that levels of lice on wild sea trout caught by the research station peak in the second year of salmon production in the loch (i.e. the data shows that the levels of lice in the loch directly correlate with the cycle of the salmon farming activities in the loch). In our opinion, the link between lice levels in the loch and the activities of the salmon farm is comprehensively proven, and that those elevated lice levels directly impact the wild sea trout (and potentially wild salmon) in the Loch. The Environmental Impact Report effectively dismisses this link because of “the relatively small scale of the Proposed Development” meaning the effect should be “not significant” (page 60 of the Report). However, the Proposed Development is a 43% increase of the site as a whole.

**SSC cannot demonstrate that its activities do not significantly affect migratory sea trout and salmon**

**(4) The site is within the Wester Ross National Scenic Area and the UNESCO Wester Ross Biosphere.**

Fish farms are not attractive. Three professional photographers operate in the area. None of their published images incorporates a fish farm because (put simply) fish farms spoil the view. See Appendix A. An enlarged fish farm will have a larger footprint and will be more visible (notwithstanding that SSC states that four additional pens will not materially change the view). While it is true that the cages will have a low profile in the water, the Planning Committee should be aware that:

- Large fish farm production vessels regularly visit the Neighbouring Site, and periodically anchor in the Loch facing the village. The Environmental Impact Assessment Report states that boats visit (i) once every quarter to deliver feed (ii) once every six months to grade the fish (iii) twice a month in the last six months of the production cycle to harvest the fish and (iv) an indeterminate number of visits to treat fish for lice, pick up mortalities etc.. In practice, we have recorded large vessels visiting the site over consecutive days several times a week. In the 10 day period from Saturday 12 April 2019 to Sunday 21 April 2019 we recorded large vessels visiting the Neighbouring Site over 7 out of the 10 days, during which at least one of the ships remains on site all day. These ships are the Nordic registered AAS PROVIDER (46 metres long and 533 tonnes) and the AQUA SENIOR (49 metres long and 610 tonnes). In Appendix A, we include a photo looking East over Loch Torridon from the iconic NC500 tourist route which shows how the presence of a ship affects the profile of the site.
- Shieldaig is frequently cited as one of the prettiest villages in Scotland and is directly on the iconic NC500 tourist route. The Community is far more reliant on tourism than on fish farming and the views across the water from in and around the village should be protected at all costs.
- Tourists travelling around the NC500 route from or to Applecross encounter from elevated points multiple views of the Proposed Site (see Appendix A). Whereas a Seascape Landscape and Visual Impact Assessment (SLVIA) has been carried out for the Proposed Development from key viewpoints identified through pre-application discussions, the SSC concludes that the impact of four additional cages is not material. The photos taken of the Proposed Site have been taken in low light which has the effect of merging the cages into the (artificially darkened) background. The reality is that the site is much more visible than has been portrayed (compare the photos in Appendix A to the photos supplied in the Annexes to Appendix O of the Application).

Please see photos of the Neighbouring Site at Appendix A which show that local views (in a UNESCO Biosphere and the Wester Ross National Scenic Area no less) are indeed marred by the existing fish farm, and that the Proposed Site (increasing the surface area of the fish farm by over 40%) will only make the situation worse;

- the Planning Statement does not mention that boats passing into the Loch, including a regular visitor, the Hebridean Princess cruise ship, and the tourist boats operating in the loch cannot avoid passing by the fish farm pens (which are located adjacent to the passage leading to the narrow entrance to the outer loch). Paragraph 6.7 of the Non-Technical Planning Statement states that "A small number of wildlife boats also use Loch Torridon, but do not often visit the vicinity of the Proposed Development. The impact on these trips is

anticipated to be minimal.” It should be noted that this statement is not correct. The trip boats almost always visit the pens because the tourists notice them and ask to be shown the pens. They often demonstrate consternation at the sight of the salmon jumping in such heavy concentrations. It should also be noted that the pens cannot just be seen from the water, they can be smelt (they reek of fish).

- In anything more than 10 mph of wind, houses lying downwind of the fish farm, including in Shieldaig village, can hear the drone of the generators on the automated feed barge, which effectively destroys the peace of the remote location. Paragraph 4.4 of the Code of Best Practice states that generators should be muffled. SSC is not in compliance with the Code of Best Practice.

SSC states in its application that "The Planning Act states that decisions on planning applications must be made in accordance with the Development Plan" (paragraph 4.1 of the Planning Statement) and states in paragraph 5.4 that The West Highland and Islands Proposed Local Development Plan ('the Proposed WestPlan') (due for adoption imminently) will be used by the Council as a material consideration in the determination of planning applications until such time as it is adopted. **The SSC omits to mention that the Proposed WestPlan specifically states in relation to Shieldaig that there is a "need to protect public views over open water".** The Community believes that the extension of the Proposed Site runs entirely counter to the Proposed WestPlan because the Proposed Site is directly opposite the village.

**SSC has failed to demonstrate that the Proposed Site, when taken with the Neighbouring Site will have no material adverse visual impact on the area.**

#### **(5) Economic and Employment Claims.**

SSC seeks to support its application with reference to local employment. Specifically, it states on page 19 of the Planning Statement that "the Proposed Development would result in increased opportunities and job creation *in the area*, both during and post-construction". Presumably, the SSC means the wider Highlands and Islands Area because the Proposed Site will provide no new additional jobs for the local Community. Further, the Planning Statement states that the proposed addition of four new pens will "*directly*" support 3-4 new jobs in Stornoway and 7 new supply chain and wider economy jobs. SSC should be asked to evidence this as the Community does not understand how the addition of four additional pens can support these claims.

SSC also claims that the four new pens will contribute "An extra £1.2m in total GVA for the Scottish economy" (para 1.6.1 of the Planning Statement). The Community notes that "Gross Value Add" (GVA) is commonly used as a figure to support the "contribution" of fish farming to the Scottish economy. However, GVA is not truthfully "contributed" to the Scottish economy (as most people would understand that term) because GVA is simply the gross value of the salmon produced and sold by the salmon farmers. The money actually contributed to the Scottish economy by salmon farmers is significantly lower (whether in direct terms, in wages and taxes - or indirect terms, by supporting ancillary businesses such as freight). While SSC does support the Community's annual

regatta, for which it is grateful, the fact is if SSC's fish farms disappeared overnight, nobody in the Community would suffer the loss.

Notwithstanding that the application for the Proposed Site has only detrimental effects to the local environment and no benefits to the local economy, paragraph 4.2.4 of the Planning Statement states "*the Proposed Development .... would make a significant contribution to the local economy*".

Nowhere is this statement evidenced or otherwise supported in the Planning Application. In short, the Shieldaig Community Council believes that SSC is exaggerating the economic benefits to the local community to serve its own strategic business interests in the expansion of a favoured site. Beyond direct employment and possibly feed contracts, we see no evidence of any "significant" benefit to the Scottish or local economy. In particular, it should not be assumed that all the third party contactors who benefit from SSC's operations are in fact Scottish. For example, the two ships which regularly service the Neighbouring Site are Norwegian registered vessels. Indeed, the ultimate owner of SSC is a Swiss company linked to a Ukrainian businessman Yury Lopatinsky!

**Shieldaig Community Council believes that SSC's claims regarding financial benefits to the economy as a result of the Proposed Site should be disregarded as being unsubstantiated.**

Furthermore, at least nineteen people in the Community directly benefit from the local langoustine and crab fishing industry, which is potentially threatened by the fish farming activities if further expansion is allowed.

SSC also states that the expansion of the Aird site is "*crucial to the ongoing long term viability of the existing farms in Loch Torridon....., as well as SSC's other operations in the region....*" (SSC only operate in West Scotland and the Highlands and Islands). In the absence of any evidence for this statement, we suggest that SSC is making an exaggerated claim to put pressure on the Council and to justify further expansion because:

- Based on SSC's own estimates, the additional pens will result in an additional GVA of £1.2 million, which (according to SSC's latest available accounts) is less than 0.7% of SSC's total GVA (of £180m in 2018). We therefore estimate that the four new pens will produce less than £300,000 profit (based on a 25% profit margin), compared to total profits after tax in 2018 of approximately £45 million; and
- In respect of its 2018 financial results, SSC announced that it had "record earnings" driven by "a strong operational performance across the value chain, good biological performance and a strong market environment". This led to a corresponding increase in dividends and share price.

To describe the Proposed Site as "crucial" for SSC's operations "in the region" is absurd.

#### **(6) Unacceptable fish mortality rates.**

The Community believes that until SSC is able to significantly improve the current mortality rates, it is simply unacceptable to seek further expansion. In particular, SSC must devise a solution to overcome the incidence of gill health disease. In September 2018 SSC reported 7,683 kg of mortalities at Aird. The RECC Report states:

*"The Committee does not underestimate the serious challenge which gill health disease presents to the industry. Indeed, it has difficulty in understanding how expansion of the industry can reasonably occur if this issue is not satisfactorily resolved."*

*The Committee notes that, as suggested by many witnesses, one of the primary factors contributing to the increase in the prevalence of gill disease is thought to be rising sea temperatures. It considers that the prevailing sea temperature may also become a discussion point around the location of salmon farms in future and whether siting these in deeper, colder water might assist in overcoming the challenge presented by complex gill disease."*

The Proposed Site lies within the inner loch. SSC concede that average sea water temperatures are statistically higher at the Proposed Site compared to its nearby site at Sgeir Dughall, which is located outside of the inner loch (and in respect of which the Highland Council have refused to waive the ten year operating time limit because of concerns about the ongoing control of sea lice).

The Community argues that further expansion at the Proposed Site simply makes no sense. We believe the attempt to expand is purely a cheap, quick solution to meet growing demand that takes no account whatsoever of environmental considerations.

#### **(7) Lack of Transparency/Co-operation**

Paragraph 10 of the Application Form (Supporting Information) is misleading. The question asked is: *"Are there agreements in place with other nearby fish farms and/or fishing interests? (Yes/No) Please provide details"*. SSC have answered "Yes" and in the details section they state *"The proposed development will be operated in synchrony with the Neighbouring Site, in accordance with the Farm Management Statements (as per Code of Good Practice requirements)."*

The Farm Management Statement is at Appendix G and relates to the three farms run by SSC in Loch Torridon. However, it should be noted that there is **no** agreement in place with MOWI, which operates the other fish farm in Loch Torridon, as recommended by paragraph 3.90 the Code of Good Practice. This is further evidence that SSC's claims that it follows the industry Code of Best Practice are misleading. It also means that SSC's claim that it abides by the Code of Best Practice regarding synchronised lice treatment is untrue.

In Paragraph 3.3.10 of the Environmental Impact Assessment, SSC states that even though there is Farm Management Agreement in place with MOWI, their employees are in regular contact regarding lice etc. SSC should be required to evidence this claim because paragraph 2.2 of Appendix D (Sea lice Monitoring) states that SSC only shares its lice data with MOWI through the Scottish Salmon Producers Association. While SSC states the sea lice data is produced "monthly", there is a three month lag on the data meaning the "most recent" results are from October 2018. The Community's view is that this time lag effectively negates the practical purpose of sharing this data. Recommendation 20 of the RECC Report specifically recommends lice data should be produced and shared on a shorter time frame (as it is in Norway).

We have also found SSC evasive in its communications with the Community Council. At the December 18<sup>th</sup> meeting between SSC and representatives of the Shieldaig Community Council, we

found responses to be unsatisfactory and misleading and we are therefore surprised that the Environmental Impact Assessment states there are no outstanding issues (Table 5.2).

## Summary

The SSC states in its non-Technical Summary that “Where a potential risk to the surrounding environment has been identified, appropriate mitigation has been proposed.” We do not agree that any mitigation is demonstrated, whether in relation to ADD devices, migratory routes or the impact on the environment. SSC has simply noted the risks, and dismissed them, which is not the same as mitigation.

Moreover, SSC’s proposed expansion of its Aird site should not be viewed in isolation. In addition to the Aird site, SSC also operates two other sites in Loch Torridon close to Aird. Furthermore, MOWI also operate a large site in Inner Loch Torridon. The combined potential tonnage of biomass within Loch Torridon at any one time is already over 7,000 tonnes. The Community believes that enough is enough, at least until the industry can demonstrate that the negative environmental impacts can be managed.

In summary, whereas the Proposed Development will lead to more farmed salmon being sold to meet stated Government targets, some marginal gains to the Stornoway employment statistics and some incremental gains to the supply network (e.g. feed and freight), the cumulative effect of the Proposed Site on the environment, the village’s views and the local Community as a whole will in fact be negative. In addition, the proposals will have a negative effect on a UNESCO Biosphere, the Wester Ross National Scenic Area and the Inner Minch Special Area of Conservation. We do not believe that the benefits outweigh the disadvantages.

**Taken together, the recent SEPA and RECC Reports conclude that both more research and a tighter regulatory regime are required to protect the environment against the negative effects of fish farming, particularly for sites like Loch Torridon (closed fjordic nature, migratory routes etc, hydrography, bathymetry etc). The RECC Report was clear (and the precautionary principle should ensure) that there should be no expansion at sites like Loch Torridon until these changes have occurred.**

**For these reasons, the Shieldaig Community Council opposes the application for the Proposed Site.**

## Future Action

The Community has sought a collaborative relationship with the Scottish Salmon Company (SSC). It is therefore disappointing that SSC's own engagement with the Community is isolated to the present planning application process commenced in May 2018, and that their engagement can be broadly characterised as evasive. We are also disappointed that historically there has been virtually no collaboration between the two fish farm companies operating in Loch Torridon, Scottish Salmon Company and Marine Harvest (MOWI), to promote synchronised management of the salmon rearing cycles and to ensure that fallow periods are adhered to. The reinstatement of the Loch Torridon Area Management Group would ensure improved communications between the fish farms, government bodies, local residents and riparian river owners. Whether or not the application for

the Proposed Site is granted, we would ask that increased collaboration and transparency must be a condition of the continued operation of the site to better safeguard the future of the Loch. We would also ask that the feed barge be painted grey to merge into the background (as was previously recommended to SSC) and soundproofed, as recommended by paragraph 4.4 of the Scottish Finfish Aquaculture Code of Best Practice to protect the surrounding area from the noise pollution.

## Appendix A



Image showing the Neighbouring Site, looking North towards the narrow entrance into the Minch. The Proposed Site is to the north. This also illustrates the proximity of the site to the Inner Hebrides and Minch Special Conservation Area which starts at the mouth of the gap at the top of the image.



Image showing the iconic red roofed house and its proximity to the Proposed Site and the feed barge.



Image showing the Neighbouring Site looking East towards the Torrion Mountains and the narrow entrance which divides the inner Loch Torrion with the outer Loch. The MOWI fish farm is located in the inner Loch immediately to the right of the narrows. This image and image 1 above show how the Loch's flushing characteristics are constrained by these two narrow "necks".



Images showing the heightened visibility of the site during the presence of the ships which service the site. The nearby MOWI site is immediately behind the peninsula in the centre of the picture.



## Appendix B – Community Petition



**SHIELDSAIG COMMUNITY COUNCIL**

PETITION IN RESPONSE TO PLANNING APPLICATION NUMBER: 19/01413/FUL

**PROPOSAL: Marine Fish Farm - Atlantic salmon: new site consisting of 4 x 100m circumference circular cages**

We, the undersigned:

- strongly object to the proposal to enlarge the fish farm at the Aird site;
- believe that Loch Torridon is "at capacity" in fish farming terms, unless and until (i) tighter regulations show otherwise and (ii) it is proven that migratory salmon are not affected by fish farming activities

Name	Resident (e.g. Shieldsaig/Arrina)	Telephone
	Shieldsaig	
	Shieldsaig	
	TORRIDON	
	SHIELDSAIG	
	<del>SHIELDSAIG</del>	
	SHIELDSAIG	
	<del>SHIELDSAIG</del>	
	Shieldsaig	
	SHIELDSAIG	
	TORRIDON	
	Tigh Beag, Rhuan Shieldsaig	
	ARTHUR SHIELDSAIG	
Shieldsaig		
11 BAICE SUAS SHIELDSAIG		



Site Name	ADD deployment plan	Recording, reporting and review	SNH planning response	Planning notice	Approx. date of review	LSE vs NAESI	Notes
Outer Hebrides							
Outer Hebrides	Gravir Outer	<a href="#">Yes A2480823</a>	Yes	<a href="#">A2487891 Dec 2017</a>			
Argyll	East Tarbert Bay	<a href="#">Yes A2712433</a>	Yes	<a href="#">A2697075 Sep 2018</a>			
Argyll	Fishnish A	<a href="#">Yes A2842407</a>	Yes	<a href="#">A2859131 Feb 2019</a>			
Argyll	Fishnish B	<a href="#">Yes A2842408</a>	Yes	<a href="#">A2860462 Feb 2019</a>			
Argyll	BDNC	<a href="#">Yes A2494715</a>	Yes	<a href="#">A2549633 Feb 2018</a>			
Argyll	PNG - Shuna	<a href="#">Yes - as per BDNC</a>	Yes	<a href="#">A2549631 Feb 2018</a>			
Argyll	PNC - Shuna	<a href="#">Yes - A2223052</a>	No - early response pre-guidance	<a href="#">A2229478 Mar 2017</a>			
Argyll	Colonsay	<a href="#">Yes - A2856059</a>	Yes (no review process with LPA?)	<a href="#">A2856055 Feb 2019</a>			
Highland	Portree Outer	<a href="#">Yes - A2885231</a>	Yes	<a href="#">A2106779 Oct 2016</a>			Applies to Portree as well as Portree Outer
Highland	Sconser Quarry	<a href="#">Yes - A2521387</a>	Yes	<a href="#">A2425291 Oct 2017</a>			Final version yet to be agreed
Highland	Scalpay	<a href="#">Yes but final version not yet agreed</a>	Yes	<a href="#">A2837744 Feb 2019</a>			2 x Terecos but expect to be amended in line with Sconser Quarry
Highland	Ru Chorachan, Nr Uig	<a href="#">Yes A2364096</a>	Yes	<a href="#">A2336440 Jul 2017</a>			
Highland	Invertote, Trotternish	<a href="#">Yes A2474302</a>	Yes	<a href="#">A2515859 Jan 2018</a>			
Highland	Culnacnoc, Trotternish	<a href="#">Yes as per Invertote A2474302</a>	Yes	<a href="#">A2515861 Jan 2018</a>			
Highland	Maclean's Nose, Ardnamurchan	<a href="#">Yes A3053347</a>	Yes (no review process with LPA?)	<a href="#">A3000729 - May 2018</a>			About to go to Planning Committee
Highland	Rum, Small Isles	No ADDs		<a href="#">A2383065 - August 2017</a>			
Highland	Muck, Small Isles	No ADDs		<a href="#">A2549677 Feb 2018</a>			
Highland	North Aird Ardhleslaig, Shieldaig	Yes (Info in EIA not ADD plan)	Yes	<a href="#">A2940793 - May 2019</a>			Refused at Planning Committee
Highland	Gob na Hoe, Dunvegan	No ADDs	Planning condition - No ADDs	<a href="#">A2624433 - May 2018</a>			Planning notice Jun 2018
Highland	Leinish, Dunvegan	No ADDs		<a href="#">A3053573 - September 2019</a>			Not yet determined
Highland	Pooliel	<a href="#">Yes - A3053551</a>	No - Pre-dates guidance	<a href="#">A1685974 - July 2015</a>			DPEA decision - Nov 2016
Highland	Sgeir Dughall, Torridon	<a href="#">Yes - A3053322</a>	No - Pre-dates guidance	<a href="#">A1958702 - May 2016</a>			Response to DPEA - planning appeal

Jan-20  
not restocked at Feb 2019

Planning notice Jun 2018

See planning notice Apr 2017  
See DEPA planning notice Nov 2018  
About to go to Planning Committee  
See planning notice Aug 2017

Aug-19

LSE but no AESI  
LSE but no AESI  
LSE but no AESI  
LSE but no AESI  
No LSE  
LSE but no AESI  
No LSE  
No LSE  
N/A  
LSE but no AESI

Original ADD plan agreed but expect to be updated in line with planning condition  
Original ADD plan agreed but expect to be updated in line with planning condition  
2x Terecos  
Original ADD plan agreed but expect to be updated in line with planning condition  
2x Terecos  
Follow up response A2993875 - June 2019 also relevant  
SAC not considered by DPEA but EMP conditioned and EMP includes ADD plan  
ADDs according to original plan or updates EMP

**From:** [REDACTED]  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** FW: GSS Pre-Application Discussion: ADDs  
**Date:** 30 August 2019 10:37:00  
**Attachments:** [image001.jpg](#)  
[acv12141-sup-0002-sm2.doc.docx](#)  
[acv12248-sup-0001-appendixs-s3.docx](#)

---

[REDACTED]

Did I ever pass this on to you? Certainly meant to. Sorry if not.

[REDACTED]

[REDACTED] | **Operations Officer, Skye and Lochalsh**

Scottish Natural Heritage | King's House | The Green | Portree | Isle of Skye | IV51 9BS | t: 01463  
[REDACTED] Dualchas Nàdair na h-Alba | Taigh an Rìgh | An Grianan | Port Rìgh | An t-Eilean  
Sgitheanach | IV51 9BS  
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---

**From:** [REDACTED] [mailto:[REDACTED]st-[REDACTED]ac.uk]  
**Sent:** 15 July 2019 08:10  
**To:** [REDACTED]  
**Cc:** [REDACTED] highland.gov.uk; [REDACTED]  
**Subject:** RE: GSS Pre-Application Discussion: ADDs

Dear [REDACTED]

[REDACTED] forwarded your email to me. We are the authors of the study you are mentioning in your assessment. We share SNH's concern for pup survival in the Northern Isles, particularly in the light of the population decline on the east coast. However, we would like to clarify a few issues relating to your interpretation of the results presented in the 2016 paper.

In several ways the paper has already looked at longer-term changes of seal behaviour, even though this is perhaps somewhat hidden. The statistical modelling procedure tested several 'random effect variables' that 'code' for a long-term change of behaviour. This was the case for both the predation and seal & porpoise behavioural response models which tested variables such as '2 months period' & 'quartal' (see methods section and appendix S3 in Goetz & Janik, 2016). A model selection procedure using the Akaike Information Criterion (AIC) was carried to select the 'optimal' model but none of the mentioned candidate variables were retained. The most parsimonious explanation of this result is that no change in the seals behaviour occurred over the course of the 18-month study period.

You are stating that we 'highlight puzzling observations that seal surfacings occurred within 100 m of the transducers and suggest that this behaviour was more common amongst pups during the adult moulting period, coinciding with pups exploring their environment'. However, the paper does not actually suggest '...that this behaviour was more common among pups...', we are merely saying that we observed more seal surfacings within 100m of the transducers during the moult compared to other times of the year (and a higher percentage of these happen to be pups). In fact, our data also shows that there was no significant difference in seal occurrence

between sound exposure and control observation periods. Hence, our data provides evidence that the observed pattern merely reflects the annual pattern of seal abundance in this area, i.e. pups/juveniles start exploring the lochs around the breeding colonies once weaning is complete and then increase home ranges later in the year. Simply put, if you have a lot of seal pups in the local area during the adult moult you will also end up seeing more pups around fish farms. However, the most important result in relation to your concern is that seal surfacing rates were not affected by sound exposure at distances between 100m to 200m. This shows that any effect caused by SalmonSafe was limited to the close proximity of the fish farm and the device did not in any way impact seals that were more than 100m away from the transducers.

In conclusion, our data is inconsistent with an interpretation along the lines of a long-term change in the seal's behaviour. The statistics in the paper and supplementary material does provide the answer to the question that you suggest should be subject to future research. The 2015 and 2016 papers in 'Animal Conservation' both show that avoidance responses in seals are time-limited and localised while there are no adverse effects on harbour porpoise. This means that any concerns of habitat exclusion would only be relevant if the seal colonies at Swining 3 were within 100-250m of the farm. However, if your concern is related to the risk of auditory damage then we would like to point you to the discussion and supplementary material of the 2015 paper which demonstrates that no such risk exists. I have attached appendix S2 from the 2015 paper for you to consult regarding the risk of hearing damage and appendix S3 from the 2016 paper for more information on the statistics and model specification.

Finally, regarding your concerns relating to the prototype nature of the device used in the studies. Genuswave Ltd. ([genuswave.com](http://genuswave.com)) is the only company that has fully implement the results from these two peer-reviewed papers in the scientific literature in a commercial product. This is technologically challenging which is why the process has taken time. The duty cycles and source levels you are rightly referring to can be adjusted based on regulatory guidance. The general concern you may be hinting at is certainly justified though. A range of manufacturers with devices on fish farms have made unsubstantiated claims with regard to being 'cetacean/dolphin/porpoise friendly' or posing 'no risk of hearing damage'. To our knowledge, none of these claims are actually backed up by any publications in the scientific literature, even though the University of St Andrews is sometimes falsely quoted to back up these claims.

I will be on Skye for a different project from the 13<sup>th</sup> to 28<sup>th</sup>. I'd very happy to stop by for a chat and answer any additional questions or concerns you may have in relation to our studies.

Best,

██████ & ██████

Dr ██████ ██████  
Honorary Lecturer & Research Fellow  
Scottish Oceans Institute  
Sea Mammal Research Unit  
University of St Andrews  
KY16 8LB, St Andrews  
Scotland/UK

---

**From:** [REDACTED] <[REDACTED]@nature.scot>  
**Sent:** 10 June 2019 10:30  
**To:** [REDACTED] <[REDACTED]@griegseafood.com>  
**Cc:** [REDACTED] <[REDACTED]@nature.scot>; [REDACTED]  
<[REDACTED]@highland.gov.uk>  
**Subject:** RE: GSS Pre-Application Discussion: ADDs

Dear [REDACTED]

Thanks for your pre-application consultation regarding deployment of 'Salmonsafe' ADD devices at two of your fish farms: Uig Bay on Skye and Swining 3 in Shetland. We've reviewed the scientific papers that you listed on the information sheet that accompanied your e-mail.

The results of the trials are promising, especially in relation to effects on porpoise, but need to be treated with a degree of caution because they appear to utilize prototype devices with differing source levels, and operational deployment may not be the same as the trial deployments. We are not aware of any farms where these devices are currently in operation: please let us know if you know of any.

#### Uig Bay

-

The Uig site is immediately adjacent to Inner Hebrides and the Minches SAC for harbour porpoise and within foraging distance of common seal from within Ascribs, Isay and Dunvegan SAC. The 2016 planning permission for Uig Bay fish farm pre-dated the porpoise SAC but required approval of an EMP, including an ADD deployment plan. In our view the proposed device could be used at this site as part of an agreed ADD deployment plan. If you wish to progress this proposal we recommend that you submit a revised ADD deployment plan, detailing the acoustic characteristics of the device and the details of how it would be operated. We have previously provided you with advice on the detailed wording of such plans for other sites (see attachment).

#### Swining 3

-

This site is approximately 500 metres from Yell Sound Coast SAC designated for harbour seal and otter. The 2015 planning consent for this site includes a condition (5iii) prohibiting the use of ADDs. In addition clause 2 of the Aquaculture Management Plan for Yell Sound (which Greig signed up to in August 2018) states '*No use of acoustic seal deterrents in the Yell Sound Area to prevent disturbance to harbour seals within the SAC*'. Our preference for this site would be to maintain the presumption against the use of ADDs. We would ask you to demonstrate that you have tried alternatives and explain why ADDs are needed.

The 2016 scientific paper you referenced, highlights 'puzzling' observations that seal surfacings occurred within 100 m of the transducers and suggested that this behaviour was more common amongst pups during the adult moulting period, coinciding with pups exploring their environment. We have some concerns that the use of the 'Salmonsafe' ADDs may result in behavioural changes which in turn may have knock-on effects for long-term survival of pups.

Given the proximity of the seal SAC, we would want that issue to be investigated scientifically before we would be in a position to support ADD use at this site. It may be that Genuswave have further information on this aspect or further targeted research may be needed. Please let us know if you'd like to discuss this further.

Regards

█

█ █ | **Operations Officer, Skye and Lochalsh**

Scottish Natural Heritage | King's House | The Green | Portree | Isle of Skye | IV51 9BS | t: 01463

█ Dualchas Nàdair na h-Alba | Taigh an Rìgh | An Grianan | Port Rìgh | An t-Eilean

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---

**From:** █ █ [mailto:█ [griegseafood.com](mailto:griegseafood.com)]

**Sent:** 14 May 2019 15:32

**To:** █ █

**Cc:** Kaye █ █ st.█ [ac.uk](mailto:ac.uk)

**Subject:** RE: GSS Pre-Application Discussion: ADDs

Hi █

Thank you for the response, 6 June is great.

Kind regards,

█

---

**From:** █ █ <█ [nature.scot](mailto:nature.scot)>

**Sent:** 14 May 2019 12:35

**To:** █ █ <█ [griegseafood.com](mailto:griegseafood.com)>

**Subject:** RE: GSS Pre-Application Discussion: ADDs

Dear █

Thanks for getting in touch. This is an interesting proposal – we've heard about this device but not seen it proposed at an operational farm before. Clearly the two sites you've chosen raise similar issues (seals and cetaceans) but perhaps with different emphasis. I've consulted our specialists and we proposed to respond to you within our standard customer response period which is 20 working days (so by 6 June) – I hope that's OK.

Regards

█

█ █ | **Operations Officer, Skye and Lochalsh**

Scottish Natural Heritage | King's House | The Green | Portree | Isle of Skye | IV51 9BS | t: 01463

██████ Dualchas Nàdair na h-Alba | Taigh an Rìgh | An Grianan | Port Rìgh | An t-Eilean Sgitheanach | IV51 9BS  
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---

**From:** ████████ ████████ [mailto:██████@griegseafood.com]  
**Sent:** 08 May 2019 14:30  
**To:** Daniel Brazier; SOUTH HIGHLAND; NORTH  
**Cc:** Kaye ████████ ████████ ████████ [st-██████.ac.uk](mailto:██████@st-██████.ac.uk)  
**Subject:** GSS Pre-Application Discussion: ADDs

Good afternoon,

Grieg Seafood Shetland are looking into the possibility of installing a new ADD system at two marine fish farms: Swing 3 in Setterness, Shetland and Uig Bay, Skye.

The system is a targeted acoustic startle technology (TAST) manufactured by Genuswave in conjunction with the University of St Andrews and considered to be less harmful to the surrounding environment than other devices currently on the market. I have attached a document which describes the system and some charts indicating the two farm areas we would like to install these systems on.

Prior to Grieg Seafood Shetland applying to the local authorities for planning permission, we would like to consult SNH to provide some comments regarding the two proposals.

Please let me know if you require any further information and we would appreciate any comments to be sent to myself no later than 22<sup>nd</sup> May 2019.

Kind regards,

██████

██████ ████████

Environmental Assistant  
Grieg Seafood Shetland Ltd



Grieg Seafood Shetland Ltd – Co Reg No: 93192

✉ Gremista, Lerwick, Shetland ZE1 0PX

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## 1 **Supporting Information 2: Potential effects on target and non-target species**

### 3 **General considerations**

5 Two of the main effects of ADDs that may be of concern with regard to non-target and  
6 target species, are damage to the auditory system and behavioural impacts (Götz &  
7 Janik, 2013). Physiological effects of exposure to noise initially occur as a temporary  
8 shift of the auditory threshold (TTS). Temporary threshold shift is typically modelled  
9 using sound exposure level (SEL), a measure of energy flux density, as a predictor  
10 variable (Southall et al 2007). Sound exposure level can be calculated as  
11  $SEL = SPL + 10 \cdot \log(\text{exposure time [s]})$  with SPL being the sound pressure level in dB  
12 referenced to 1  $\mu\text{Pa}$  (see Madsen, 2005).

### 14 **Fish**

16 Hearing abilities in fish vary considerably across taxa but many species have relatively  
17 low sensitivity to sound pressure at frequencies above 800 Hz (Popper & Fay 1993). A  
18 good example for this is the farmed fish investigated here. Salmon have poor hearing  
19 above 400 Hz (Hawkins & Johnstone 1978) and are therefore unlikely to be affected by  
20 our startle sounds. However, some species evolved specific adaptations for high  
21 frequency sound pressure detection. For example, herring have relatively high sensitivity  
22 to sounds up to several kHz and would be sensitive to the proposed frequency band  
23 (Enger 1967). Temporary threshold shift has been investigated in detail in goldfish  
24 (*Carrassius auratus*), a species with good sound pressure detection capabilities up to  
25 several kHz (Smith, Kane & Popper, 2004). Smith et al. found a linear correlation  
26 between the logarithm of exposure time and the amount of temporary threshold shift  
27 (TTS) caused by exposure to white noise in an experimental tank. When extrapolating  
28 the linear regression line presented in their paper down to zero (Fig. 4 in Smith et al.  
29 2004) one can deduct that exposure to 170 dB re 1 $\mu\text{Pa}$  for 1 min is unlikely to cause  
30 TTS. Hence, assuming 1min exposure to 170 dB re 1 $\mu\text{Pa}$  as a criterion, a sound  
31 exposure level of 188 dB Pa<sup>2</sup>-s re 1 $\mu\text{Pa}$  would mark the onset of TTS. The sound  
32 exposure level of a single emission from our deterrent device (173 dB Pa<sup>2</sup>-s re 1 $\mu\text{Pa}$ ) is  
33 below that value. Therefore, even fish with highly specialised hearing positioned directly  
34 next to the transducer would be unlikely to experience TTS as the result of exposure to

1 single pulses. Impact of longer term exposure is more difficult to predict but will depend  
2 on duty cycle and sound emission patterns. Oscars (*Astronotus ocellatus*) exposed  
3 continuously to 300Hz tones at 180 dB re 1 $\mu$ Pa for 1h suffered hair cell damage but  
4 exposure to the same signal at a duty cycle of 20% did not result in any damage  
5 (Hastings et al. 1996). The duty cycle of our deterrence method was considerably lower  
6 (0.8%) suggesting that auditory damage in fish from the sounds we used is unlikely.

7  
8 A well-known behavioural response to sound in fish is a C-start which involves a brief,  
9 directional movement away from the sound source. Startle responses (C-starts) in  
10 herring reliably occur at sound pressures of about 15 Pa (Blaxter et al. 1981) which  
11 corresponds to a sound pressure level of 143 dB re 1 $\mu$ Pa. In our study, a received level  
12 of 143 dB re 1  $\mu$ Pa was only exceeded at distances of less than 100m. Furthermore, C-  
13 start reflexes elicited by pulsed sounds do not necessarily lead to large-scale avoidance  
14 responses (Wardle et al. 2001). Anecdotal evidence for a lack of behavioural responses  
15 to the sound pulses tested in our study also comes from divers that were inspecting the  
16 fish cages during cleaning operations. They reported the presence of schools of Atlantic  
17 mackerel (*Scomber scombrus*) that were moving slowly around the device at distances  
18 of 30-200m. Purser and Radford (2011) showed that a 10 s noise stimulus played at  
19 power spectral densities reaching 150 dB/Hz re 1 $\mu$ Pa can influence parameters of  
20 foraging performance in fish. While this stimulus did not affect overall food intake, subtle  
21 effects of noise exposure were found (Purser and Radford 2011). Effects on wild fish  
22 need to be considered on a case by case basis but current data indicate that our stimuli  
23 are not more likely to influence fish behaviour and hearing than stimuli currently used in  
24 acoustic deterrent devices (ADDs).

## 25 26 **Temporary and permanent threshold shift in seals, porpoise and baleen whales**

27  
28 Physiological effects of exposure to noise typically first manifest themselves as a  
29 temporary shift (elevation) of the auditory threshold (TTS). In common seals, the onset  
30 of a temporary threshold shift occurs at sound exposure levels (SEL) of  $\sim$ 182 dB re  
31 1 $\mu$ Pa<sup>2</sup> s (Kastak et al. 2005). The SEL of a single 0.2s pulse used in our study is 173 dB  
32 re 1 $\mu$ Pa<sup>2</sup> s and the cumulative SEL of 5 pulses is 180 dB re 1 $\mu$ Pa<sup>2</sup> s. Hence, even if an  
33 animal listened to 5 pulses at a distance of 1m from the loudspeaker it would not suffer

1 TTS. This sound exposure scenario seems extremely unlikely since most seals develop  
2 strong avoidance responses after a few exposures (Götz & Janik 2011).

3  
4 Harbour porpoises exposed to short, broadband impact noise developed temporary  
5 threshold shifts at relatively low sound exposure level (SEL) of 164 dB re 1  $\mu\text{Pa}^2$  s  
6 (Lucke et al. 2009). However, impact noise is known to cause a higher risk for the  
7 auditory system than pulsed or continuous noise (Henderson et al. 1991). Previous  
8 studies which tested TTS at higher frequencies (4 kHz, Kastelein et al. 2012) may also  
9 be less appropriate for predicting the effect of the startle pulse (1 kHz) tested in our  
10 study since porpoise hearing is more sensitive at higher frequencies and animals may  
11 therefore be prone to TTS at lower exposure levels. Porpoises exposed to 1.5 kHz pure  
12 tones developed significant TTS at a sound exposure level of 190 dB re 1  $\mu\text{Pa}^2$  s  
13 (Kastelein et al. 2013). Such a sound exposure level would be reached after continuous  
14 exposure to a received level of 180 dB re 1  $\mu\text{Pa}$  for 10s. The duration of our startle pulse  
15 is 200 ms, hence, a porpoise would only be affected when exposed to 50 pulses within  
16 one meter of the loudspeaker. Given the duty cycle of 0.8% (~2.4 pulses per minute) this  
17 means that an animal would have to stay within 1m of the loudspeaker for almost 21min.  
18 Alternatively, an animal would receive the same noise dose (SEL=190 dB re 1  $\mu\text{Pa}^2$  s) if  
19 it was exposed to the equivalent of 4000s of continuous noise within 20m of the  
20 loudspeaker (assuming spherical spreading). Taking the duty cycle and pulse duration  
21 into account, such an exposure would only be reached after 5 to 6 days. Given the  
22 movement patterns found in our study these exposure scenarios are extremely unlikely.  
23 There is currently no direct data on temporary or permanent threshold shifts in baleen  
24 whales but Southall et al. (2007) suggested an SEL criterion of 198 dB re  $\text{Pa}^2$  s for  
25 permanent threshold shift through pulses. As described previously such a SEL would not  
26 be reached in any realistic exposure scenario. Current commercially available deterrent  
27 devices operate at higher duty cycles and source levels and therefore pose some risk of  
28 causing hearing damage at much lower exposure times (Götz & Janik, 2013). Hence,  
29 the noise exposure protocol used in this study is an improvement regarding any  
30 physiological effects on target or non-target species.

1 References

2

3 Blaxter, J. H. S., Gray, J. A. B. & Denton, E. J. 1981. Sound and startle responses in  
4 herring shoals. *J Mar Biol Assoc UK* 61:851-869.

5 Enger, P. 1967. Hearing in herring. *Comp Biochem Phys* 22:527-538.

6 Götz, T., & Janik, V. M. 2011. Repeated elicitation of the acoustic startle reflex leads to  
7 sensitisation in subsequent avoidance behaviour and induces fear conditioning.  
8 *BMC Neurosci* 12: 30.

9 Götz, T. & Janik, V.M. 2013. Acoustic deterrent devices to prevent pinniped depredation:  
10 Efficiency, conservation concerns and possible solutions. *Mar Ecol Prog Ser.*  
11 492, 285-302.

12 Hastings, M. C., Popper, A. N. Finneran, J. J. & Lanford. P. J. 1996. Effects of low-  
13 frequency underwater sound on hair cells of the inner ear and lateral line of the  
14 teleost fish *Astronotus ocellatus*. *J Acoust Soc Am* 99:1759-1766.

15 Hawkins, A. D. & Johnstone, A.D.F. 1978. The hearing of the Atlantic salmon (*Salmo*  
16 *salar*). *J Fish Biol* 13:655-673.

17 Henderson, D., Subramaniam, M, Gratton, M.A & Saunders. S. S. 1991. Impact noise -  
18 The Importance of level, duration and repetition rate. *J Acoust Soc Am* 89:1350-  
19 1357.

20 Kastak, D., Southall, B. L. Schusterman, R.J. & Reichmuth-Kastak, C. 2005. Underwater  
21 temporary threshold shift in pinnipeds: Effects of noise level and duration. *J*  
22 *Acoust Soc Am* 118:3154-3163.

23 Kastelein, R.A., Gransier, R., Hoek, L. & Olthui, J. 2012. Temporary threshold shifts and  
24 recovery in a harbor porpoise (*Phocoena phocoena*) after octave-band noise at  
25 4kHz. *J Acoust Soc Am* 132:3525-3537.

26 Kastelein, R. A., Gransier, R., Hoek, L., Rambags, M. 2013 Hearing frequency  
27 thresholds of a harbor porpoise (*Phocoena phocoena*) temporarily affected by a  
28 continuous 1.5 kHz tone. *J Acoust Soc Am* 134:2286-2292.

29 Lucke, K., Siebert, U., Lepper, P. A. & Blanchet. M. A. 2009. Temporary shift in masked  
30 hearing thresholds in a harbor porpoise (*Phocoena phocoena*) after exposure to  
31 seismic airgun stimuli. *J Acoust Soc Am* 125:4060-4070.

32 Madsen, P. T. 2005. Marine mammals and noise: Problems with root mean square  
33 sound pressure levels for transients. *J Acoust Soc Am* 117:3952-3957.

1 Southall, B. L., Bowles, A. E., Ellison, W. T., Finneran, J. J., Gentry, R. L., Green Jr, C.  
2 R., Kastak, D., Ketten, D. R. Miller, J. H., Nachtigall, P. E., Richardson, W. J.  
3 Thomas, J. A. and Tyack. P. L. 2007. Marine Mammal Noise Exposure Criteria:  
4 Initial Scientific Recommendations. *Aquat Mamm* 33:1-521.

5 Popper, A. N., & Fay, R. R. 1993. Sound detection and processing by fish: Critical  
6 review and major research questions. *Brain, Behavior and Evolution* 41:14-38.

7 Purser, J. & Radford, A. N. 2011. Acoustic Noise Induces Attention Shifts and Reduces  
8 Foraging Performance in Three-Spined Sticklebacks (*Gasterosteus aculeatus*).  
9 *PLoS ONE* 6.

10 Smith, M. E., Kane, A. S. & Popper, A. N. 2004. Noise-induced stress response and  
11 hearing loss in goldfish (*Carassius auratus*). *J Exp Biol* 207:427-435.

12 Southall, B. L., Bowles, A. E., Ellison, W. T., Finneran, J. J., Gentry, R. L., Green Jr,  
13 C.R., Kastak, D., Ketten, D. R. Miller, J.H., Nachtigall, P. E., Richardson, W. J.  
14 Thomas, J. A. and Tyack. P. L. 2007. Marine Mammal Noise Exposure Criteria:  
15 Initial Scientific Recommendations. *Aquat Mamm* 33:1-521.

16 Wardle, C. S., Carter, T. J., Urquhart, G. G., Johnstone, A. D. F., Ziolkowski, A. M,  
17 Hampson, G. & Mackie, D. 2001. Effects of seismic air guns on marine fish. *Cont*  
18 *Shelf Res* 21:1005-1027.

19  
20  
21

### Appendix S3: specification and results of Generalized Linear Mixed Models

Date set	Model specification (random and fixed effects retained)	Predictor	Coefficient $e^B$	Confidence Interval (5%, 95%)	P value
<b>Predation Models: GLM(M)s</b> Log link Fixed effects considered: sound exposure Random effects considered: 'quartal' & '2 month period'					
Test site: Comparison sound versus pre/post exposure	Negative binomial 1 Zero-inflation: no Random effects: none Offset: days per period	Intercept	1.605	0.645, 3.990	0.309
		Sound	0.0893	0.023, 0.346	0.0005
Test site: Comparison test versus control site	Negative binomial 1 Zero-inflation: no Random effects: quartal Offset: days per period	Intercept	1.287	0.376, 4.403	0.688
		Sound	0.0290	0.0037, 0.230	0.0008
Short-term test 1	Negative binomial 1 Zero-inflation: no Random effects: none Offset: none	Intercept	40.70	32.48, 51.00	<0.0001
		Sound	0.074	0.020, 0.278	0.0001
Short-term test 2	Negative binomial 1 Zero-inflation: yes Random effects: none Offset: none	Intercept	22.751	14.51, 35.67	<0.0001
		Sound	0.749	0.283, 1.985	0.561
<b>Visual observation of marine mammals: GLM(M)s</b> Log link Fixed effects considered: sound exposure, moulting period (seals) Random effects considered: 'quartal'					
Seal surfacings: <100m	Negative binomial 1 Zero-inflation: no Random effects: none Offset: observation hours (effort) per day	Intercept	4.52	2.096, 9.759	0.0001
		Sound	0.427	0.171, 1.067	0.0684
		'Moult'	3.257	1.296, 8.182	0.0120
Seal surfacings: 100-200m	Negative binomial 1 Zero-inflation: no Random effects: none Offset: observation hours (effort) per day	Intercept	5.667	2.578, 12.454	<0001
		Sound	0.679	0.307, 1.503	0.172
Porpoise surfacings: <200m	Negative binomial 1 Zero-inflation: no Random effects: none Offset: observation hours (effort) per day	Intercept	1.327	0.435, 4.053	0.619
		Sound	1.051	0.340, 3.253	0.930
<b>Sound propagation model: General Linear Model</b> Link: Identity (linear), Variables considered: $\text{Log}_{10}(\text{Distance})$ Recording depth (as factor) Coefficients untransformed on scale of predictor					
Sound propagation	Gaussian, Linear	Intercept	179.48	175.28, 183.67	<0.0001
		$\text{Log}_{10}(\text{Distance})$	-17.24	-19.46, -15.02	<0.0001

The error distributions tested in the first step of the model selected process were: Poisson, negative binomial with parametrization 1 and 2 (each with and without a zero-inflation argument specified).

Parametrizations are given by (Skaug H et al. 2013)

Negative binomial 1: variance =  $\phi\mu$

Negative binomial 2: variance =  $\mu(1 + \mu/\phi)$

where  $\mu$  represents the population mean and  $\phi$  is the dispersion parameter.

**From:** [REDACTED]  
**To:** [Cathy Tilbrook](#)  
**Subject:** FW: advice please - response from Cathy for Francesca re ADD & Canna  
**Date:** 03 September 2019 13:50:16

---

Hi Cathy

Happy to discuss – but Nick has asked for a bit more on point 2 below. Please can you provide this detail when you are back in the office?

Thanks

M

---

**From:** Nick Halfhide  
**Sent:** 03 September 2019 13:46  
**To:** [REDACTED]  
**Subject:** RE: advice please - response from Cathy for Francesca re ADD & Canna  
[REDACTED]

Thanks for this. It is helpful but I am not sure that point 2 fully answers Francesca's question. We may be working towards a common position with MS but are we at odds in the meantime?

Can you have another word with Cathy and I will then go back to Francesca?

Nick

**Nick Halfhide | Director of Sustainable Growth**

Scottish Natural Heritage | Great Glen House | Leachkin Road | Inverness | IV3 8NW | t: 01463 [REDACTED] m: [REDACTED]

Dualchas Nàdair na h-Alba | Taigh a' Ghlinne Mhòir | Rathad na Leacainn | Inbhir Nis | IV3 8NW

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**From:** [REDACTED]  
**Sent:** 02 September 2019 10:23  
**To:** Nick Halfhide  
**Subject:** FW: advice please - response from Cathy for Francesca re ADD & Canna  
Nick

Here is Cathy's response. How do you want to feed this back to Francesca?

Thanks

M

---

**From:** Cathy Tilbrook  
**Sent:** 02 September 2019 09:33  
**To:** [REDACTED]  
**Subject:** RE: advice please

Hi [REDACTED]

Sorry for delay. Briefly, to respond to Francesca's queries:

1) Recent coverage of our response to the Screening / Scoping Advice we provided on the Canna fish farm. How is our relationship with Mowi? Has it been impacted by this case? **This shouldn't affect our relationship at all. The advice we provided was not unusual for EIA screening/scoping and would not have ruffled any feathers at Mowi. We will continue to liaise closely with the company as the application progresses.**

2) Acoustic Deterrent Devices – what is the latest position on this regarding our advice and position on ADD, and how this sits with Marine Scotland's position?

**MS officials are currently reviewing the ADD regulatory regime, and will be producing an internal paper for Ministers by the Autumn. We have provided information to assist in this review, including suggestions relating to marine EPS licensing. We have not yet seen the draft paper. In the meantime, we continue to provide advice on ADD deployment (within the Inner Hebrides & Minches SAC and in some cases outwith the site) in line with our current draft policy, which requires recording and active management and reporting of ADD usage through an Environmental Management Plan.**

I hope this is helpful but happy to discuss.

Cheers, Cathy

**Cathy Tilbrook | Head of Sustainable Coasts & Seas**

Scottish Natural Heritage | Battleby | Redgorton | Perth | PH1 3EW | t: 01738 [REDACTED] | m: [REDACTED]

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Please note my email address is now: [Cathy.Tilbrook@nature.scot](mailto:Cathy.Tilbrook@nature.scot)

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**From:** [REDACTED]

**Sent:** 26 August 2019 18:48

**To:** Cathy Tilbrook

**Subject:** advice please

Hi Cathy

I'm following up on a query from Nick , which Francesca has raised.

Can you please advise on the following two points

- 1) Recent coverage of our response to the Screening / Scoping Advice we provided on the Canna fish farm. How is our relationship with Mowi? Has it been impacted by this case?
- 2) Acoustic Deterrent Devices – what is the latest position on this regarding our advice and position on ADD, and how this sits with Marine Scotland's position?

Happy to discuss.

Many thanks

[REDACTED] | **Director Support Manager**

Scottish Natural Heritage | Silvan House | 231 Corstorphine Road | Edinburgh | EH12 7AT | t:

[REDACTED] m: [REDACTED]

Dualchas Nàdair na h-Alba | Taigh Silvan | 231 Rathad Chros Thoirphin| Dùn Èideann| EH12 7AT

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**From:** [REDACTED]  
**To:** [REDACTED]  
**Subject:** RE: Flodigarry FF - Informal queries  
**Date:** 06 September 2019 17:55:00

---

The Dunans one – VP7. I've got no evidence that it is wrong it was an initial reaction. Need to look at it again in the field. I'll let you know if I have any real concerns after that.

A

---

**From:** [REDACTED] [mailto:[REDACTED]@live.com]  
**Sent:** 06 September 2019 16:53  
**To:** [REDACTED]  
**Subject:** Re: Flodigarry FF - Informal queries

No problem, cant get hold of [REDACTED] at OTAQ at the moment will try again Monday.

All photomontages based on buoys deployed in June 2018 apart from the one from the site of the proposed visitor centre which was done in April this year and compiled from existing images and ZTV data. Is there a particular image that you think is out? Have had the views out on site and we had to get one redrawn but those submitted, i thought, were okay.

Thanks

[REDACTED]

Sent from Samsung Mobile on O2

----- Original message -----

**From:** [REDACTED] <[REDACTED]@nature.scot>  
**Date:** 06/09/2019 16:23 (GMT+00:00)  
**To:** [REDACTED] <[REDACTED]@live.com>  
**Subject:** RE: Flodigarry FF - Informal queries

That's really helpful. When you speak to OTAQ ask them about Modes as well as outputs. We've been having lots of recent discussions about Patrol Mode (which is closer in output to the level you specify) and only sounds one transducer at a time) and Standard mode which is much higher output but fires randomly in the way you describe. Given the option an early stage in Patrol Mode is preferable. All need to be activated in response to predation (and you've already detailed a reasonable approach to that).

Would be good to see more on the C-PODs. Nice idea but have to say we're sceptical at the moment.

Remind me – are locations and scale of the farm shown in photomontages based on bouys in the water? There are a few where the angle of farm in relation to coast looks a bit odd.

█

---

**From:** █ [mailto:█@live.com]  
**Sent:** 06 September 2019 15:51  
**To:** █  
**Subject:** RE: Flodigarry FF - Informal queries

Hi █

Thanks for getting in touch much appreciated, for information I have spoken to █ this week and he is minded that this application will need to be re-advertised because at some point in the process the ES part 1 has been removed from public view on the portal, we only became aware of this when Alison asked last week. There are a couple of other documents that we believe were submitted but which haven't reached epc.

Response to your comments in red below.

Kind regards

█

Sent from [Mail](#) for Windows 10

---

**From:** █  
**Sent:** 06 September 2019 11:37  
**To:** █  
**Subject:** Flodigarry FF - Informal queries

█

You asked for any initial comment/feedback on sufficiency of the EIA report. I'm sure the Council could deal with much of this via conditions but if you have any comments/further info at this stage that would help our response.

### ADDs

OTAQ Sealfence is proposed and source level is quoted as 109dB. This does not correspond with figures we've seen for this device in other applications. Can you confirm that is correct and clarify what mode(s) would be used. – **will need to check with OTAQ and get back to you on this but this figure was provided by them for the south sites. If used, it is the intention is that the ADDs would operate in a random, intermittent pattern.**

Further consideration is needed re. the deployment and use of the 'hydrophones'.

Assessing possible cetacean detections is usually a specialised role. It is noted within the ADD flow chart that the visual and acoustic detections will be checked prior to activation of the ADD system, but there is no detail as to how this will be achieved? We are aware that OTAQ were considering the use of CPODs, and we understand that usually, these log detections that are downloaded once retrieved. Is this a system that has a real time monitoring function? We are also aware that cetacean detections can be masked by the ADD noise output, particularly with CPOD devices, and so we would like to see detail of the system. – **Yes, normally retrieval of a card and download is required but we had been looking at systems with real time telemetry capabilities which would send info to the feed barge, will get you additional information.**

Given the potential cumulative ADD noise from your multiple farms it would be good practice to produce a cumulative plan for all of the consented farms. The sorts of issues that it would need to cover would be ensuring that multiple farms were not operating with ADDs on at the same time. **Good point, should be relatively straight forward to incorporate in to a revision of a plan – surprised this hasn't been specified already. Given that sites are to be at different production stages they are unlikely to experience the same levels of predation pressure at the same time, but will look into this further.**

### Benthic

As you've identified there is a lot of 'tide swept coarse sands with burrowing bivalves'. Did you try to define how much? Have you got any charts which show the transect routes and grab locations overlaid on the depositional footprint? **We have map from preliminary transect discussion with SEPA, which broadly shows the different substrates in the transect survey areas with the depositional footprint overlaid, please see attached. There is a map showing the position of the grab samples in the benthic annex, there is a map showing the route of the video survey in the survey report. From the chart and looking at fishing activity sand and gravel extends several km north and west of the site and up towards the Shiant Bank pSAC much of this is dredged for scallops.**

How do you decide between *Antedon* and *Leptometra*? **Working on the basis that experience of *L.celtica* elsewhere (Sunart in particular) is that they stand more upright and appear taller on their aboral disk with longer cirri attaching them to substrate. Tide swept nature of the Flodigarry site also tends to suggest *Antedon* but admittedly they do tend to be more gregarious than the Flodigarry video indicates. I know that some of the surveys in Loch Dunvegan reported *L.celtica*, Corlarach in particular from memory, but I was never entirely convinced from those videos.**

### Feed barge

What colour is the proposed Gael Force feed barge? **Grey**, Presumably you've decided to avoid a white barge because it attracts unnecessary attention to the farm? **The depiction of the AKVA barge as white was a misunderstanding by the landscape architect, never the intention to use white at Flodigarry based on the condition attached to the south sites, there is a comment and visual to that effect later on the SLVIA. (As an aside the large boat shaped barge looking like a boat wasn't the end of the world in my view). Missing from the online portal are revised visuals from key viewpoints showing the Gaelforce Seamate barge, I attach now for your information.**

Please point me to the relevant bit of the docs if the info is already there and I've overlooked it! **Think I have covered everything above!**

Regards



**██████████ | Operations Officer, Skye and Lochalsh**

Scottish Natural Heritage | King's House | The Green | Portree | Isle of Skye | IV51 9BS | t: 01463

██████████ Dualchas Nàdair na h-Alba | Taigh an Rìgh | An Grianan | Port Rìgh | An t-Eilean

Sgitheanach | IV51 9BS

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Thoiribh an aire airson adhbharan gnothaich, 's dòcha gun tèid sùil a chumail air puist-dealain a' tighinn a-steach agus a' dol a-mach bho SNH.

\*\*\*\*\*

**From:** [REDACTED]  
**To:** "registrydingwall@sepa.org.uk"  
**Subject:** CAR/L/1110925 - COLONSAY MARINE PEN FISH FARM  
**Date:** 26 September 2019 18:14:00  
**Attachments:** [SNH response to Colonsay fish farm extension 18\\_02657\\_MFF - 8 Feb 2019 \(A2856016\).pdf](#)

---

Dear [REDACTED]

Thank you for your consultation dated the 10 September 2019 requesting comments on the proposed variation of the CAR licence for Colonsay Marine Pen Fish farm. For your information, I have attached our response to the planning application which provides comment on the proposed variations for alterations to the fish farm (planning ref: 18/02657/MFF).

The proposal lies within the **Inner Hebrides and the Minches Special Area of Conservation (SAC)** selected for its harbour porpoise. Background information on the SAC can be found at: <https://www.snh.scot/professional-advice/safeguarding-protected-areas-and-species/protected-areas/international-designations/natura-sites/harbour-porpoise-candidate>

The site's status means that the requirements of the Conservation (Natural Habitats, &c.) Regulations 1994 as amended (the "Habitats Regulations") or, for reserved matters, the Conservation of Habitats and Species Regulations 2010 as amended apply. Consequently, SEPA is required to consider the effect of the proposal on the SAC before it can be consented (commonly known as Habitats Regulations Appraisal). The SNH website has a summary of the legislative requirements (<http://www.snh.gov.uk/docs/A423286.pdf>).

In our view, it is unlikely that the proposal will have a significant effect on any qualifying interest of the SAC, either directly or indirectly. An appropriate assessment is therefore not required. This is because of the scale of the SAC in comparison to the proposed scale of the variation.

Please don't hesitate to contact me should you have any further queries.

Kind regards,

[REDACTED]

[REDACTED] | **Operation Officer – Argyll and Outer Hebrides**

Scottish Natural Heritage | Cameron House | Albany Street | Oban | PA34 4AE | t: [REDACTED] | m: [REDACTED]

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## Scottish Natural Heritage Dualchas Nàdair na h-Alba

All of nature for all of Scotland  
Nàdar air fad airson Alba air fad

Director of Planning and Development  
The Highland Council  
Glenurquhart Road  
Inverness  
IV3 5NX

FAO: [REDACTED]

Your ref: 19/03093/FUL

Date: 12 November 2019

Dear [REDACTED]

### **TOWN & COUNTRY PLANNING (SCOTLAND) ACT 1997 NEW FISH FARM SITE - 12 X 120M CIRCUMFERENCE CIRCULAR CAGES IN 80M X 80M GRID PLUS FEED BARGE FLODIGARRY, TROTTERNISH, ISLE OF SKYE**

Thank you for your consultation on the above proposal.

#### **Summary**

- The proposed development lies within an area of international importance for harbour porpoise. In our view, assuming that the proposed mitigation is implemented, harbour porpoise will not be adversely affected by the proposals. It is for you to determine, within the context of its own policies, whether conditions are necessary to secure the mitigation.
- The fish farm is on the edge of Trotternish National Scenic Area (NSA) which is of national importance for its landscapes. While the proposal will have some adverse effects on views out to sea from within the NSA this will not affect the integrity of the NSA.
- The most significant landscape and visual impacts will be along the section of coast immediately adjacent to the development. This will erode some of the special qualities of the Trotternish and Tianavaig Special Landscape Area (SLA) in that locality. It is for you to judge the importance of those effects in the context of your own policies.
- The Priority Marine Features (PMF) '*Tide swept coarse sands with burrowing bivalves*' is extensive at this site and will be affected by these proposals. However we advise that the proposals do not raise any issues of national interest.

#### **Background**

We provided Environmental Impact Assessment (EIA) scoping advice in June 2017. The Environmental Statement has taken that advice into account.

Scottish Natural Heritage, King's House, The Green, Portree, Isle of Skye, IV51 9BS  
Tel: 01463 [REDACTED] [www.snh.gov.uk](http://www.snh.gov.uk)

Dualchas Nàdair na h-Alba, Taigh an Rìgh, An Àilean, Port Rìgh, An t-Eilean Sgitheanach, IV51 9BS. Fòn: 01463 [REDACTED] [www.snh.gov.uk](http://www.snh.gov.uk)

## Appraisal of the impacts of the proposal and advice

### 1. Inner Hebrides and the Minches Special Area of Conservation

The proposal lies within Inner Hebrides and the Minches Special Area of Conservation (SAC) designated for its harbour porpoise. The site's status means that the requirements of the Conservation (Natural Habitats, &c.) Regulations 1994 as amended (the "Habitats Regulations") or, for reserved matters the Conservation of Habitats and Species Regulations 2010 as amended apply. Consequently, The Highland Council is required to consider the effect of the proposal on the SAC before it can be consented (commonly known as Habitats Regulations Appraisal). The SNH website has a summary of the legislative requirements (<http://www.snh.gov.uk/docs/A423286.pdf>).

In our view, this proposal is likely to have a significant effect on harbour porpoise within Inner Hebrides and the Minches SAC because Acoustic Deterrent Devices (ADDs) are included as part of the range of predator control measures. These may disturb harbour porpoise. Consequently, The Highland Council is required to carry out an appropriate assessment in view of the site's conservation objectives for its qualifying interest. To help you do this we advise that, in our view, **based on the information provided to date, the proposal will not adversely affect the integrity of the site**. The appraisal we carried out considered the following factors:

- A range of measures are proposed to reduce the chances of seal attacks and minimise ADD use including '*using new generation nets marketed for their seal resistance, incorporation of seal blinds into cage design, maintenance of net tension, lower stocking densities and regular removal of mortalities*' (Section 5.5.3). We particularly support the use of new generation seal resistant nets at the outset.
- The site is on the edge of the Minch in a relatively unconstrained area in terms of cetacean movements (as opposed to sounds or narrows).
- Annex 2B (*Statement on the use of ADDs*) provide details on ADD usage. This includes measures to ensure that ADDs are only activated in the event of a significant seal predation event, would not sound continuously, and would be switched off promptly.
  - ADDs would only be switched on if >50 fish are killed due to seal predation and then only if it is the second such event within the last 5-7 days. ADDs would be used for a maximum of 14 days with a minimum of 7 days between usage periods.
  - When in use the ADDs will not sound continuously. The intention is for the ADDs to be triggered by the panic reaction of the fish but there is doubt as to whether this will work at the stocking densities envisaged. In the event that it does not the devices will be set to sound intermittently/randomly. They also plan to switch off the ADDs at night (between 6pm-8am).
- The source level quoted for the proposed ADD is also lower than similar devices. However, the system proposed (OTAQ Seal Fence) has powerful

transducers and the quoted level may be dependent on the mode of use: we recommend that this should be confirmed.

- They propose to deploy hydrophones to record cetaceans in the vicinity of the farm. We recommend that further details be provided on this system since ADD use may displace cetaceans beyond the range of the hydrophones.
- OSH have committed to keeping a log of ADD use and to make this available to THC and SNH on timescales to be defined by THC.
- The proposed Flodigarry and Balmaqueen fish farm sites would be sufficiently close that cumulative impacts (wider habitat exclusion) may occur if ADDs were in use at both farms at the same time. We therefore recommend that a single integrated plan be produced if both farms are permitted.

**We recommend that you consider whether it is necessary to impose conditions to achieve the above mitigation.** You may wish to carry out further appraisal before completing the appropriate assessment.

Other cetacean species have also been recorded in the wider area. In particular the west coast of Scotland and the Hebrides supports a population of approximately 45 bottlenose dolphins. In addition, there are above average predicted and observed densities of minke whale, particularly during the summer months (July-Sept). All cetaceans are European Protected Species. Similar issues regarding disturbance/habitat exclusion apply to those species and effects on them would also be mitigated by the measures outlined above.

## 2. River Kerry Special Area of Conservation (SAC)

The Flodigarry site lies 34km from River Kerry SAC (in Wester Ross) which is designated for Freshwater Pearl Mussel (FWPM). FWPM populations require healthy juvenile salmonid populations to complete their life cycle. We have considered the potential impacts of sea lice from this proposal (in combination with other existing farms) on the SAC.

In our view there is **unlikely to be a significant effect on the SAC** in this case because:

- Two surveys have indicated that the pearl mussel population uses both salmon and trout as the host for the larval stage. However, salmon is the principal and disproportionately the most important host.
- Recent survey results in the Kerry suggest that fish densities were sufficient to support recruitment.
- The salmon post smolts (the most vulnerable life stage) arising from the Kerry will tend to head out to sea as they emigrate towards the North Atlantic/Norwegian Sea. As such, they would not be expected to interact with sea lice emanating from the proposed farm.

## 3. Shiant Isles Special Protection Area (SPA)

The proposed fish farm is approximately 21km from the SPA which is classified for a range of breeding seabirds including fulmar, common guillemot, puffin, kittiwake, razorbill and shag. The farm is within foraging distances of many of these species

but in our view there is **unlikely to be a significant effect on the SPA** in this case because:

- The proportion of their potential foraging area affected by this proposal is insignificant.
- Mitigation measures have been included to reduce the risk of bird entanglement, including well tensioned nets and avoiding the use of secondary anti-predator nets.

The ES refers in various places to '*appropriate mesh size*' to reduce the risk of bird entanglement but does not provide any detail. We can provide further advice on appropriate mesh size if required.

#### 4. Landscape

A Landscape and Visual Impact Assessment has been carried out by a chartered landscape architect as requested. The methodology follows the relevant guidance, scoping advice and reflects pre-application discussions. The resulting assessment is systematic, thorough and well balanced. The viewpoints chosen appear representative and, where necessary, err on the side of 'worst case'. The visualisations are of good quality with marker buoys used to define the edges of the farm which should mean that the photomontages are reasonably accurate.

Two proposed fish farms have been assessed in the LVIA but only one has currently been applied for so we have focussed our assessment on the impacts which are specific to the Flodigarry proposal at present.

##### a. Trotternish National Scenic Area (NSA)

The Flodigarry fish farm site lies just outside the northern boundary of the NSA. We agree that '*the special qualities of the NSA require consideration due to potential for intervisibility with the proposed sites and proximity*'.

The proposals would be visible from Flodigarry, Staffin and the northern summits on Trotternish Ridge (see ZTV for detail). We have considered the published special qualities for the NSA, and in particular the '*distant views over the sea*' across the Minch and to the mountains of Wester Ross.

The proposals would introduce detracting man-made features into sea views from Flodigarry. In the worst cases (e.g. VP7), the framing of the landform and apparent mis-alignment of the cages with the coast mean that the fish farm would likely be a dominant and discordant feature. However many of the receptors are motorists on the main road and these views tend to be glimpsed. In other views the farm is much less prominent, set off to one side of the view, often partly or fully concealed by landform or trees, and so unlikely to dominate the views over the sea. In more distant views, such as from Staffin, the farm would not be prominent with attention instead focussed on adjacent landslip landforms and offshore islands.

Walkers are considered to be sensitive receptors but visibility of the farm from key routes such as the Loch Hasco path is predicted to be limited. The fish farm would be visible in more distant views from the ridge (e.g. Sron Vourlinn and Meall na Suiramach) but would be a minor feature in a wide vista. The farm would be well aligned with the coast, inferior in scale to the open water and seen in the context of existing human development.

Other special qualities of the NSA relate to the inland landscape of Trotternish and the sea cliffs within the site and will not be affected.

We advise that the proposal would be likely to have significant localised adverse effects on the 'distant views over the sea' quality but that these are not widespread and, taken overall, **will not have an adverse effect on the integrity of the NSA.**

#### b. Trotternish and Tianavaig Special Landscape Area (SLA)

The proposed fish farm lies just outside the boundary of Trotternish and Tianavaig SLA, a site of regional landscape importance which is protected via the Local Development Plan. However the development is of a type which is specifically listed as a 'sensitivity to change' and would affect the special qualities of the coast. We therefore agree with the LVIA that *'the special qualities of the SLA require consideration due to potential for intervisibility with the proposed sites and proximity'*.

We agree with the overall conclusion of the LVIA (17.4) that there would be *'locally significant impacts on seascape and undeveloped coast, largely contained to areas adjacent to the proposed development'*. We also agree that *'for much of the adjacent coastal margin, including the A855 corridor impacts would be largely negligible'* (17.4). There is acknowledgment *'there could be an increase in the perception of incongruous commercial marine development extending further north up previously undeveloped coast'* (17.8), although this is more difficult to confirm.

Sites/zones where significant levels of landscape and visual impact have been identified include:

- The seascape impact assessment concludes that significant major to substantial adverse impacts are predicted close to the fish farm and at up to 1km distant (10.2).
- We agree that significant effects on landscape character are likely to be largely limited to the coastline immediately adjacent to the development (Galta Mor to Steall a Ghreip)' (11.3; 11.35).
- This section of coast has a higher level of tranquillity and perceived wildness to the rest of the coastline (though it very localised). Those qualities would be eroded by the development (12.3; 12.5).
- We agree that visual impacts would be greatest for the closest viewpoints. Impacts at VP3 – Coast path at Galta Mor, and VP4 – Coast path South of Steall a Ghreip, would be major to substantial. The fish farm would be a large incongruous development which would create a new man-made focus and vie for attention with Eilean Flodigarry, possibly diminishing its apparent scale (VP4).
- The receptors most affected would be marine users and those walking the Balmaqueen to Flodigarry section of the Skye Trail where both the character and views from the path would be significantly affected (12.28). However, the Environmental Statement predicts that the numbers affected would be small (and has tried to quantify them – see sections 5.11.3 & 5.11.4).

The LVIA does a good job teasing out the specific landscape and visual impacts of this proposal but **it is for you to decide how much weight to attach to the significant but localised impacts in the context of your own policies.**

Two sets of photomontages have been provided and these demonstrate that a feed barge with a white superstructure would attract undue attention to the

development, especially in distant views where the cages are less prominent. If consented, **we recommend that you consider whether it is necessary to condition the feed barge to ensure a recessive colour scheme** (suggested in 6.3.5 of ES).

## 5. Priority Marine Features (PMFs)

Priority marine features (PMFs) are habitats and species that Scottish Government considers to be marine nature conservation priorities in Scottish waters.

### a. Tide swept coarse sands with burrowing bivalves

Benthic visual surveys and grab samples were carried out in June 2018. These appear to follow the relevant guidance and have reasonable coverage of the predicted depositional footprint. The quality of the video footage is adequate to assess the biotopes present.

The seabed comprises primarily coarse sand with varying amounts of pebbles, cobbles and boulders. The species present are typical of these habitats. Assessment of the video and grab samples indicates that these habitats are likely to be examples of the Priority Marine Feature '*Tide swept coarse sands with burrowing bivalves - Moerella spp. with venerid bivalves infralittoral gravelly sand*'. This habitat has a limited distribution with most records from Shetland, Orkney, the west coast of Scotland and Outer Hebrides (see map at <https://marinescotland.atkinsgeospatial.com/nmpi/default.aspx?layers=1143>). However correct classification of the feature requires identification of species within the sediment and this probably accounts for the limited records rather than it being of a restricted distribution. The tide swept nature of this feature means it is found on open coasts or at mouths of sea lochs. The habitat can be extensive where it occurs, as appears to be the case here.

Overall, the habitat is considered to have a low sensitivity to organic enrichment. Tolerance is assigned as medium with recovery high. However since suspension feeders are first to disappear in organically enriched areas, the shallow burrowing bivalves in this feature are likely to have lower tolerance than other groups. The low level of sensitivity, combined with an energetic environment, mean that significant habitat changes are likely to be restricted to the immediate depositional footprint of the farm.

Taking the above into account, we advise that the **proposals do not raise any issues of national interest regarding this PMF.**

### b. Black guillemot

Black guillemots (also a PMF) breed along the adjacent coastline and are likely to forage in the area. Although they can forage in water up to 50m deep they generally prefer water less than 30m deep. There is also some information which suggests an association with sub-littoral kelp beds. The fish farm is proposed in waters >40m depth and kelp beds were not seen in the benthic visual footage.

Research suggests that individual birds have favoured feeding areas. While effects on small numbers of birds cannot be discounted, significant effects on the population are unlikely. **We advise that these proposals do not raise any issues of national interest regarding this PMF species.**

Please let me know if you would like clarification or any further advice regarding this case.

Yours sincerely,

[REDACTED]

Area Officer, Skye and Lochalsh  
[REDACTED] [snh.gov.uk](http://snh.gov.uk)

**From:** [Redacted]  
**To:** [Redacted] [McNee](#), [Redacted]  
**Cc:** [Redacted]  
**Subject:** Noise guidance - paper to CSG  
**Date:** 12 September 2019 09:30:39  
**Attachments:** [image003.jpg](#)  
[image005.gif](#)  
[image006.gif](#)  
[image009.jpg](#)  
[image010.jpg](#)  
[image011.jpg](#)  
[CSG\\_1909\\_03\\_Threshold-approach-to-underwater-impulsive-noise.docx](#)  
[CSG\\_1909\\_03a\\_Annex1.docx](#)

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Dear all,

Please find attached the paper (CSG\_1909\_03) prepared on the noise guidance for CSG 17-18<sup>th</sup> September. The current noise guidance is attached also as an Annex to the paper.

Apologies for not being able to prepare this in consultation with you all, but timings were too tight. We have tried to include and respond to stakeholder queries on the basis of the stakeholder and regulator workshops and inter-agency discussions.

The draft guidance attached is also not final – as you know, we continue to work on it on the basis of ongoing consultations.

If you have any thoughts on the attached then please do let us know. All useful preparation for the CSG if we understand agency position.

Many thanks

All the best

[Redacted]

Dr [Redacted]

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# Threshold Approach to Underwater Noise Assessment and Management in Harbour Porpoise SACs

Cover note by: [REDACTED] [REDACTED]

## Summary

The following paper re-presents the SNCB threshold approach to underwater noise assessment and management in harbour porpoise SACs. The approach was first presented to CSG in September 2017 and was endorsed by CSG as the foundation for SNCB advice to regulatory authorities and other stakeholders (excluding its application in Scotland<sup>1</sup>).

The risks of CSG not re-affirming support for the approach are presented, as are developments that have taken place since 2017.

## Action Requested

CSG are requested to re-affirm their 2017 decision to endorse the threshold approach & associated guidance.

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<sup>1</sup> Application in Scotland was not considered necessary primarily due to a different set of noise issues relevant to the single Scottish harbour porpoise SAC in the Inner Hebrides & Minches.

# Threshold Approach to Underwater Noise Assessment and Management in Harbour Porpoise SACs

Paper by: [REDACTED] [REDACTED]

## 1. Introduction

In September 2017 CSG discussed a time-area threshold approach to underwater noise management in harbour porpoise SACs<sup>2</sup> and were presented with the joint agency (excluding Scotland<sup>3</sup>) draft guidance for approval. CSG endorsed the recommended approach with a strong emphasis on adaptive management and the intention was to publish the guidance for use by regulatory authorities at that time.

Due to continuing concerns by the regulators at that time, publication was postponed while further commentary was received, and the regulators formed a pilot working group on matters of implementation. While points of detail have continued to be queried and addressed through SNCB inter-agency working mechanisms, the real crux of the problem has always been implementation of the approach by regulatory authorities. Implementation requires in-combination assessment and management across sectoral and regulatory boundaries (e.g. across renewable energy and oil & gas sectors). The primary activities of management concern outside of Scotland are pile driving, seismic exploration and UXO clearance operations, all of which create loud impulsive underwater noises.

An impasse has persisted which has been unsatisfactory for all stakeholders and the guidance has remained unpublished. In recent months DEFRA has stepped in to take a lead facilitation role, convening and chairing regulatory meetings and most recently a stakeholder workshop on 12 July 2019. The main objective of the stakeholder workshop was to give all stakeholders a chance to say their piece and to move the debate to a point where the guidance is accepted (in the absence of viable alternatives) and work can move forward to practical implementation.

The workshop was a significant step forward and practical points of implementation started to be seriously aired. While there are theoretically other approaches (e.g. statutory limits on sound levels propagated – currently advocated by the NGOs) no practical alternatives to the SNCB approach have been forthcoming.

As part of the overall re-invigoration process, JNCC has undertaken to provide further points of transparency and clarification to the stakeholder group. In addition, JNCC agreed to seek a re-affirmation from the inter-agency (SNCB) Chief Scientists Group of the time area threshold approach and associated guidance, given the elapsed time since last approval.

The draft final revised guidance document is provided as a separate Annex 1 document to this paper.

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<sup>2</sup> CSG17\_septNI\_09\_CONFIDENTIAL. *Decision on the Area Threshold Approach to Underwater Noise Assessment & Management in Harbour Porpoise SACs*

<sup>3</sup> Primarily due to a different set of noise issues relevant to the Inner Hebrides & Minches SAC

## 2. Quick recap on the 2017 CSG agreement

The guidance is an aide to regulators in meeting the Article 6(3) habitats directive test for plans and projects – i.e. that plans and projects [meaning ‘human activities’] should not adversely affect the integrity of protected sites – in this case harbour porpoise SACs. Article 6(3) of the habitats directive requires (human) activities to undergo an assessment to determine whether or not they will have an adverse effect on site integrity. The focal issue here is underwater noise disturbance of harbour porpoise as relates to the disturbance attribute of the site conservation objectives – namely that there is no significant disturbance to the species.

The Conservation Objectives for the harbour porpoise sites (outside of Scotland) are:

To avoid deterioration of the habitats of the harbour porpoise or significant disturbance to the harbour porpoise, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to maintaining Favourable Conservation Status (FCS) for the UK harbour porpoise.

To ensure for harbour porpoise that, subject to natural change, the following attributes are maintained or restored in the long term:

1. The species is a viable component of the site.
2. There is no significant disturbance of the species.
3. The supporting habitats and processes relevant to harbour porpoises and their prey are maintained.

The SNCB approach to noise assessment is one of cumulative noise assessment across activities / industry sectors with the aim of assessing and managing the cumulative footprint of loud impulsive noise sources within a SAC boundary.

In September 2017, CSG endorsed the recommended 10% seasonal average disturbance threshold, meaning that porpoise can be ‘sonically excluded’ from up to 10% of the area of a SAC (averaged within a season) before a conclusion of adverse effect on site integrity is triggered. Put differently, this translates to 10% of the total SAC area (or habitat) being unavailable to harbour porpoise during the course of a season. Note that there is also an instantaneous (daily) limit of 20% of the area embedded within the approach – i.e. disturbance footprint should never exceed 20% of the SAC area (meaning that porpoise should never be excluded from more than 20% of the SAC area (or habitat) in any one day).

CSG also asked for strong emphasis that adaptive management is part of the approach.

### 3. What are the key maritime activities in focus

It is worth noting that seawater is a superb sound conducting medium, meaning that underwater noises radiate out considerable distances from a point source. The sound sources of primary concern in the UK Economic Exclusion Zone (EEZ), acknowledging the particular issues in Scotland which are not addressed here, relate to a small number of big industry activities:

#### 3.1. *Pile driving*

Comes in various shapes and sizes but the primary concern is large steel monopiles for windfarm base installation. In essence a very large hammer is used to drive large diameter monopiles into the seabed. This is a high energy activity that creates very high peak level sound pulses underwater. Note that there are alternative foundation types for offshore windfarms – such as pin piles (lower energy), gravity bases and suction cups. The choice of method is usually determined by a combination of factors including geological conditions, ease of deployment and cost. Note that sound production is a by-product of piling activity and not the objective, meaning that noise abatement techniques are theoretically<sup>4</sup> an option.

#### 3.2. *Large scale seismic surveys*

Employ arrays of high-pressure air-guns towed behind ship to produce loud, repetitive underwater sound pulses. This technology is used for acoustic penetration of the seabed and sub-surface rock strata to visualise geological formations and search out potential oil and gas bearing structures over wide areas of sea. There can also be a temporal element to this at a reservoir scale, to re-examine the geological evolution of reservoirs during the production lifetime as hydrocarbons are extracted. There is currently no viable alternative to seismic survey for these purposes. Note that sound production is the objective of seismic surveys, meaning that noise abatement is extremely challenging.

#### 3.3. *Unexploded ordnance clearance*

Is required for certain marine construction projects, including major infrastructure projects such as offshore windfarms and cable laying. The hotspot for UXO clearance is the southern North Sea, where returning WW2 bombers typically dumped unused ordnance because it would have been unsafe to land with the ordnance onboard. There are thousands of pieces of unexploded ordnance in the southern North Sea [see Annex 2] and projects in the area are usually accompanied by UXO clearance campaigns in the project footprint. UXO clearance is typically a case of controlled detonation, resulting in high energy impulsive underwater sound. Note that sound production is a by-product of UXO clearance, meaning that noise abatement, although challenging, could be an option<sup>5</sup>.

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<sup>4</sup> Developers have been reluctant to use noise abatement techniques in the UK for a number of reasons including cost, feasibility, maturity of technology and health & safety.

<sup>5</sup> There is a slow burn technique for UXO clearance, but it does not currently have a foothold with UK offshore wind developments.

## **4. What are the key points of contention (and what has changed since 2017)**

There have been a number of points of contention raised in relation to the SNCB approach since its inception, mainly driven by a limited set of empirical evidence.

### **4.1. *The choice of time/area thresholds***

The choice of threshold value is effectively arbitrary but there is a rationale for it.

The threshold approach to underwater noise disturbance was developed by the inter-agency marine mammal working group. The approach sets a cumulative impulsive noise footprint threshold – i.e. the proportion of the SAC habitat that is rendered unavailable due to acoustic disturbance. The threshold was developed in the context of the ASCOBANS<sup>6</sup> conservation objective, which aims ‘to allow populations to recover to and/or maintain 80% of carrying capacity in the long term’. In the absence of other data/metrics to inform what would be a significant reduction in habitat, the SNCBs chose to use this objective to provide guidance on what magnitude of temporary habitat loss might be considered significant in SACs. This is based on the assumption that there is a directly proportional relationship between loss of access to habitat and carrying capacity and a further assumption that the distribution of porpoise density is uniform within the site<sup>7</sup>.

A 10% seasonal disturbance threshold was proposed for the SACs, meaning that porpoise can be excluded from up to 10% (on average within a season) of the area of a site before a conclusion of adverse effect on site integrity is triggered. Porpoise SACs were selected on the basis of persistently higher densities within them than surrounding areas. The threshold can be adapted in light of new evidence via the adaptive management approach (learning through experience with the cooperation of industry) – a point emphasised in the 2017 CSG decision. There is not currently an equivalent disturbance threshold approach for areas outside SACs, although several European countries are working together to develop thresholds of impulsive noise impact across regional seas.

The SNCB approach described here follows the logic of one of the elements of the German approach, which also uses spatio-temporal limits for the management of underwater noise in their SACs. The other element of the German approach is statutory limits on sound levels propagated. It is worth noting that the SNCB approach does encourage noise reduction through use of a threshold for cumulative noise footprint and there is greater flexibility in choice of mitigation than with a statutory limits approach.

#### **4.1.1. *What has changed since 2017***

Essentially nothing. There is no new evidence on which to justify a change to the threshold, so the 10% seasonal threshold remains.

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<sup>6</sup> A regional agreement for the protection of small cetaceans under the Convention for Migratory Species - <https://www.ascobans.org/>

<sup>7</sup> Tougaard et al 2012.

[http://randd.defra.gov.uk/Document.aspx?Document=13482\\_MB0138ExpertGroupreport\\_harbourporpoiseandpiledriving.pdf](http://randd.defra.gov.uk/Document.aspx?Document=13482_MB0138ExpertGroupreport_harbourporpoiseandpiledriving.pdf)

There has however been the suggestion of a statutory noise limits approach by the NGOs. As far as can be determined this would be about mandating firm noise level limits in statute. Hard noise limits might further<sup>8</sup> drive the introduction of sound level mitigation where this is feasible, but such an approach would be difficult to implement on both technological and cost grounds during the current phase of offshore wind deployment. In addition, because of the challenges associated with mitigating noise at source for seismic surveys, such limits would only be viable if they were either sectorally discriminatory, or if the UK government were willing to sacrifice oil & gas exploration and time lapse reservoir imaging in harbour porpoise SACs.

#### **4.2. The effective deterrent radius (EDR)**

The EDR of 26km has been contentious because it effectively sterilises 2,100 square kilometres around a noise point source. So, if a single point source (e.g. a large monopile) were operating in a SAC of 21,000 square kilometre area for a whole season then this one activity alone would utilise the available 10% seasonal threshold – i.e. allowing no other concurrent noise producing activity to take place.

For area comparisons, the following table provides the square kilometre area of each of the 5 porpoise SACs within scope of this approach – and where relevant also provides the summer and winter area (seasonal) figures.

<b>SAC</b>	<b>Season</b>	<b>Area (Km2)</b>
Southern North Sea	Summer	27028
	Winter	12696
West Wales Marine	Summer	7376
	Winter	1460
Bristol Channel Approaches	Winter	5850
North Anglesey Marine	Summer	3249
North Channel	Summer	1604

The 26km EDR is currently the precautionary distance applicable to large monopile foundations and explosives, the two most energetic sound sources that are likely to be encountered (i.e. a maximum). However, common sense and development specific information can be used if neither large monopiles nor underwater explosive campaigns are likely to be a feature of a plan or project. Large monopiles and UXO clearance campaigns are expected to feature in the current pipeline of southern North Sea offshore windfarm developments, therefore an EDR of 26km is appropriate to those developments in the absence of mitigation. This EDR is based upon current empirical data but could be subject to adjustment through the adaptive management approach (i.e. expanding the empirical data set through measurements during monopile installation campaigns).

However, not all windfarms will require large monopile installation. For example, pin piling is another technique used, which is much lower energy. Much reduced impact ranges (1.3—7.4km) have been observed in the Moray Firth in a recent study using this foundation technique. The significance of this difference can be better explained with the simplified example as above.

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<sup>8</sup> The SNCB approach will also encourage sound level mitigation where it is not otherwise possible for marine works to operate within threshold.

So, taking the hypothetical case of a 21,000 square kilometre SAC, the monopile disturbance area (2,100 square kilometres) would be 10% of the SAC area (hitting threshold) whereas the pin pile technique would be 0.03 – 0.8% of the area (well within threshold). Re-running the calculations with a hypothetical SAC area more representative of a west coast SAC, say 5,000 square kilometres, the large monopile disturbance would be 42% of the SAC area (exceeding threshold), whereas the pin pile technique would be 0.1 – 3.4% (well within threshold).

Information used should be site and project specific where possible, and ideally new technology would need testing to gain empirical data in terms of disturbance and EDR. The EDR for large scale seismic survey is currently set at 10km and there is scope for further validation here too. Running the seismic EDR for the hypothetical 5,000 square km SAC gives a disturbance area of 6.3% (within threshold), although further scenario development is needed for a moving point source.

#### ***4.2.2. What has changed since 2017***

Flexibility has been introduced to the guidance with respect to the choice of EDR. It has been clarified in the guidance that there is scope for project specific information to be used in determining EDR. This should ideally be on the basis of validated evidence for a particular technology type. It is possible that clarification on this flexibility has not been made explicit enough in the guidance to date, so this is being rectified.

#### ***4.3. Implementation by Regulators***

Note that in encompassing all maritime industries that produce loud impulsive underwater noise, the SNCB approach is intended to enable fair treatment of all industries – i.e. not singling out a particular industry type on the basis of regulatory jurisdiction. The benefit from a nature conservation perspective is that the approach requires active cross sectoral regulatory cooperation in managing in-combination activities. At the end of the day it is the impact of noise in terms of lost habitat availability (through disturbance) and site integrity that is the issue of concern for SNCBs. Practical implementation is not within the SNCBs gift to determine and is an aspect that government and regulators need to solve and there are signs of progress on that front.

#### ***4.3.3. What has changed since 2017***

Defra have now taken the chairing role of a North Sea regulators group looking at implementation issues. This group has met roughly quarterly since late 2018 and part of their work has been considering potential tools to aid managing noise across sectors (such as regulator hosted marine works spreadsheets, or further development of the UK marine noise registry). The SNCBs have contributed to these discussions as far as has been possible when requested.

Defra also convened a stakeholder<sup>9</sup> workshop (12 July 2019) to help move the debate beyond detailed critique of the rationale behind the SNCB guidance and onto matters of practical implementation. No alternatives to the SNCB approach were forthcoming from this workshop. JNCC agreed as part of this process to seek a re-affirmation from the inter-agency (SNCB) Chief Scientists

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<sup>9</sup> Stakeholders included NGO's, marine regulators, industry body representatives and SNCB's.

Group on the SNCB approach and to provide certain points of clarification for the wider stakeholder community (e.g. about how the approach was derived).

Following on from the workshop discussions, Defra are also considering a joint (Defra/BEIS) ministerial submission on the way forward.

## **5. Summary of implications for maritime activities**

In some cases there may be no significant implications, particularly if mitigation is already embedded in a project or if there isn't a cumulative effects issue. In other cases there may be choices necessary with respect to marine works being restricted to less noisy options, applying noise abatement technologies, or making adjustments to marine works schedules to avoid 'over threshold' in-combination activities. The 26km EDR for windfarm installation is based on large monopiles as currently used in southern North Sea offshore wind farm installations. There are lower noise options, such as pin piles, gravity bases, floating turbines and suction cups. The guidance provides flexibility to assess case and site specific EDR based on evidence provided in Environmental Impact Assessments. So, for example, if a new windfarm were proposed in a west coast SAC using a pin pile installation technique it would be reasonable to look at the appropriate validated evidence for porpoise disturbance against such an installation method and the site-specific sound propagation characteristics. The one published disturbance study to date based on pin piling indicates a much reduced EDR would be appropriate.

In the case of seismic survey campaigns this is more difficult to mitigate since high source level noise production is the objective. Evidence to date suggests a smaller EDR (10km) but one which could still be quite challenging in terms of permitting within the smaller west coast sites. However, it is worth considering the realism of such campaigns being launched in the potentially sensitive west coast areas. Data from the UK marine noise registry from 2015-2018 indicates that these are relatively quiet areas [see Annex 3].

Most sites on the west coast were designated based on seasonal high densities, either summer (April to September) or winter (October to March) – [see Annex 4]. The exception to this is the West Wales Marine SAC, which has a smaller winter sub-area (which geographically coincides with Cardigan Bay SAC for bottlenose dolphins) embedded within the wider summer area. Therefore, for most of the west coast sites, the time / area threshold approach to noise management only applies for six months of the year, meaning seismic campaigns could take place unrestricted in 'non-designation' months. A fair proportion of seismic activity in the UK EEZ already takes place during winter months.

## **6. Expectation of stakeholders**

The one expectation shared by all stakeholders is clarity and certainty on the process they should be following to assess noise. Industry have repeatedly asked for fair treatment across sectors and the renewables sector are clear that they do not want to be singled out. All stakeholders agree that the evidence base is not ideal and needs to be improved. Strategic enabling actions alongside targeted consent conditions may help with this.

## Paper 3: Threshold Approach to Underwater Noise Assessment and Management in Harbour Porpoise SACs

BEIS Renewables and MMO are engaged and striving for successful implementation of the SNCB approach. They want to conclude on their Review of Consents and would ideally not wish to go against SNCB advice, but they are also cautious of other regulators not applying the approach.

BEIS OPRED<sup>10</sup> would prefer a more business as usual approach, given that oil gas surveys have taken place in sites for years and they were designated with that baseline activity. Whilst that approach might work if activity levels were to remain constant or decrease, the reality is that noise levels in the southern North Sea SAC in particular are currently and for the foreseeable future increasing, due mainly to the installation of offshore wind farms. OPRED has been reluctant to sign up to the approach, in part due to the different time scales involved in the different sectoral consenting regimes. This could mean oil gas (seismic) surveys being excluded from sites (at least for 6 months of the year) if the noise 'quota' in the managed season has already been taken up by large monopile windfarm construction activity. Conversely the offshore wind sector feel vulnerable to oil & gas (seismic) consenting because this can be done on a much more rapid timescale than renewables consents – thereby 'cheating' them of noise quota if not managed in a fair and equitable way.

NGOs want windfarm construction to use noise abatement methods in all piling and explosive events. They seem less concerned with seismic noise at the moment, instead focussing on offshore windfarm construction and consistency with other European countries where noise abatement has been required<sup>11</sup>.

The SNCBs would prefer noise to be managed in a reasonably precautionary and proportionate way that is fair across industries, so that these important habitats for harbour porpoise are protected. Given the protected status of these areas, and the likely increase in noisy activity for some areas, a business as usually approach is not acceptable.

## 7. The risks

An incoherent strategy for noise management in harbour porpoise SACs is a risk in itself. Aside from not affording the SACs the protection they need it introduces / perpetuates confusion and uncertainty for stakeholders.

The SNCB inter-agency staff have put a huge amount of work into developing and refining the guidance and threshold approach, including several years of interaction with stakeholders (government, regulators, NGOS and industry). The approach was endorsed by CSG in 2017 so the inter-agency groups have operated under the reasonable assumption that their actions carry senior level support.

It has been extremely challenging to get stakeholders onboard with the threshold approach, not least because of the new (and potentially positive) challenge this generates for cross regulatory working and compliance. This has come to a head recently with Defra stepping in to take a lead facilitation role and trying to move the stakeholders beyond technical critique and onto matters of practical implementation.

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<sup>10</sup> Offshore Petroleum Regulator for Environment & Decommissioning

<sup>11</sup> Noting that seismic surveying has not been permitted in German waters for the last few years, probably in part due to statutory limits.

### Paper 3: Threshold Approach to Underwater Noise Assessment and Management in Harbour Porpoise SACs

If CSG does not re-affirm their support for the threshold approach and associated guidance we can expect reputational damage with all stakeholders involved in the process. In addition, stakeholders will quite reasonably expect an alternative strategy (which thus far has not been forthcoming from any quarter).

An incoherent strategy for noise management with different advice provided on a case by case, sector by sector basis with no over-arching framework may well lead to protracted application processes, increased drain on SNCB resources at a country level and more challenge on how decisions are made.

There could be challenge to the evidence for the SNCB threshold, but we have been transparent and clearly emphasised the need for an adaptive management approach. By taking collectively responsibility we strengthen the rationale for improving the evidence base through the adaptive approach while still enabling marine developments to proceed in a proportional manner. In other words, by taking collective responsibility we consolidate the imperative for industry as a whole to cooperate on the commissioning of strategic evidence / research to support the adaptive management approach.

Regulators should take account of SNCB advice but ultimately it is their decision whether to follow it or not. There is a general expectation that if regulators do not follow advice from their statutory advisors that they explain their rationale. The risk is effectively transferred to the regulator.

There is an additional dimension to advisory risk if CSG do not re-affirm their support. All of the porpoise SACs (except Scotland) are multi-jurisdictional in statutory advisory terms. Advisory jurisdictions are shown in the following table:

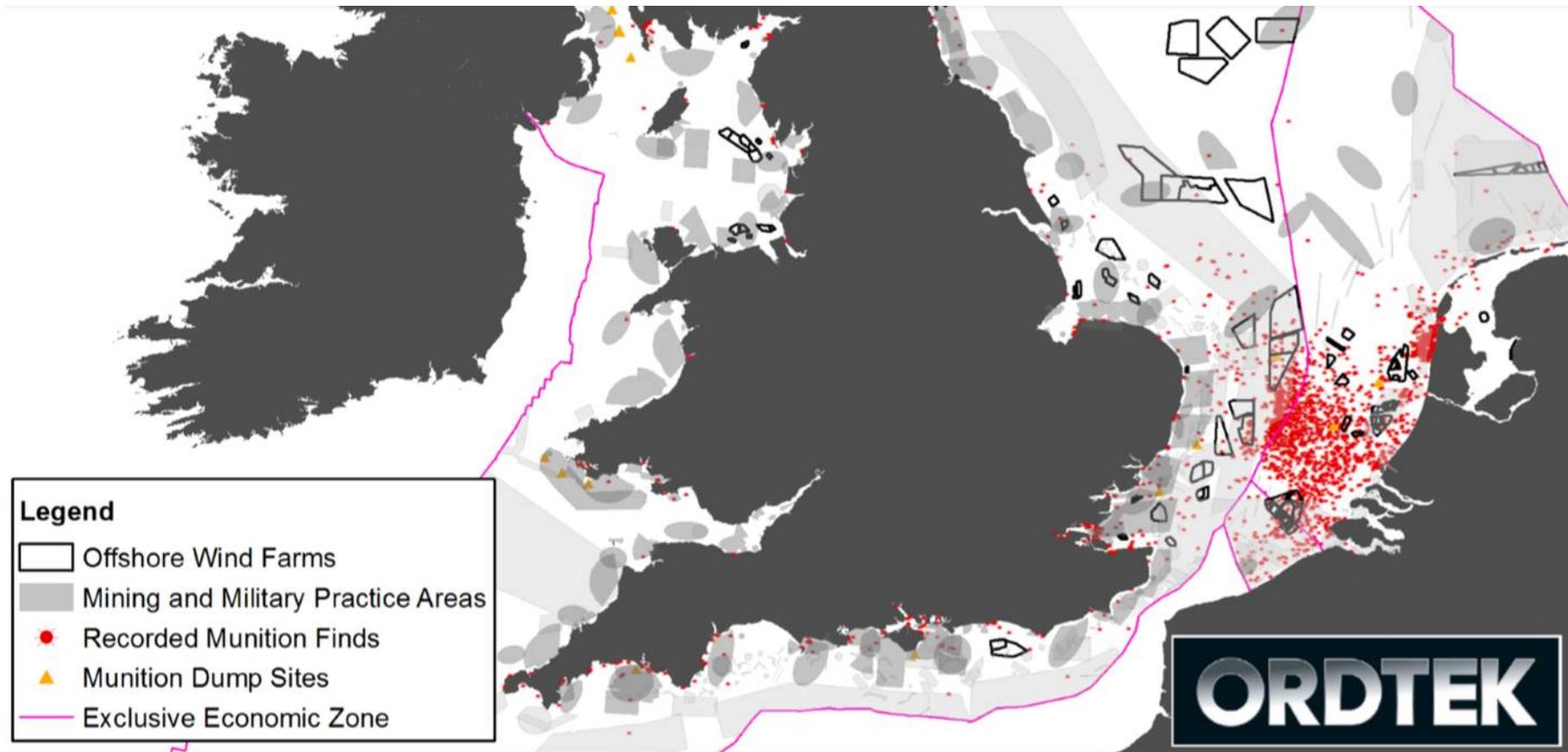
<b>SAC</b>	<b>Advisory Jurisdiction</b>
Southern North Sea	NE, JNCC (delegated)
West Wales Marine	NRW, JNCC
Bristol Channel Approaches	NE, NRW, JNCC
North Anglesey Marine	NRW, JNCC
North Channel	DAERA, JNCC

Non-reaffirmation of the approach would run the risk of incoherent advice to regulatory authorities and other stakeholders emerging from multi-jurisdictional casework.

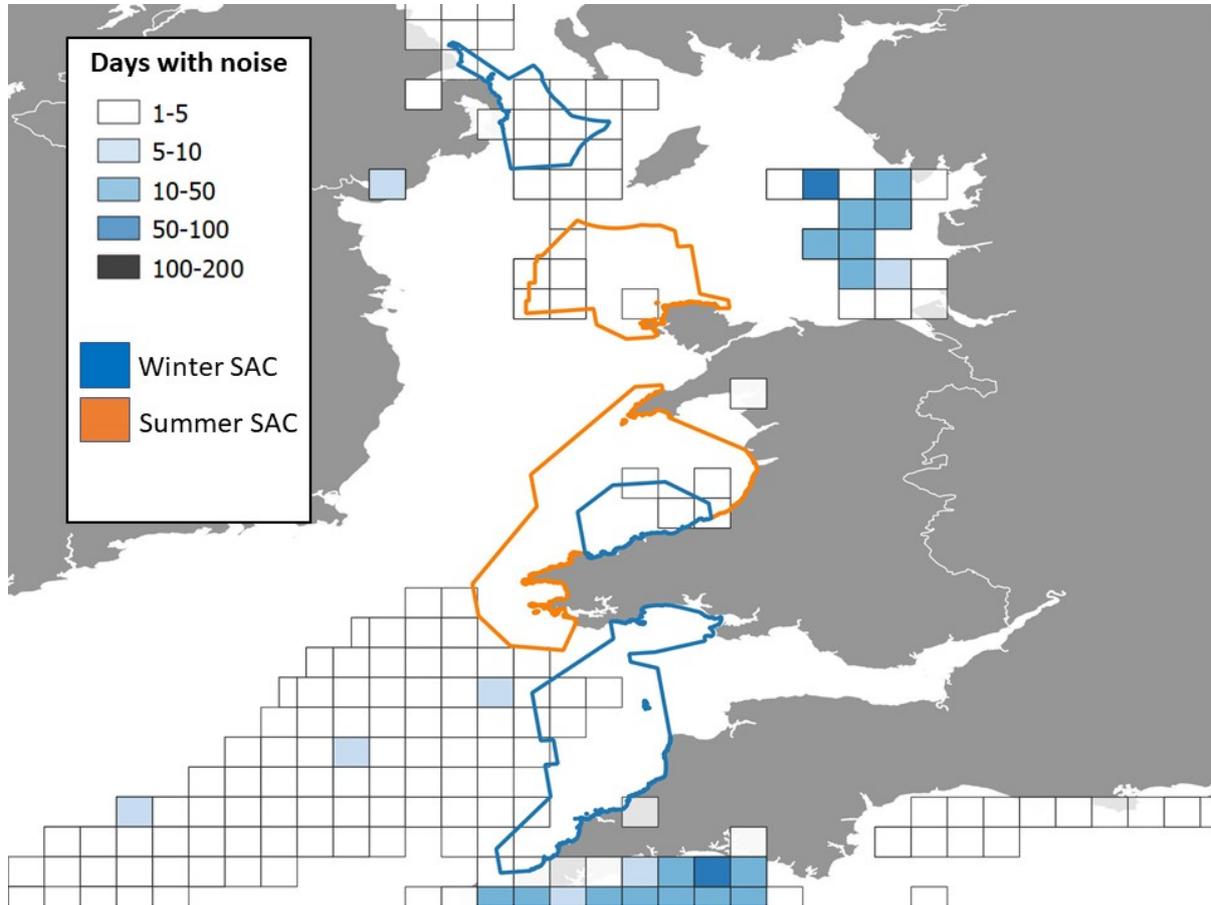
**Annex 1: – Guidance for assessing the significance of noise disturbance against  
Conservation Objectives of harbour porpoise SACs.**

See separate Annex 1 document.

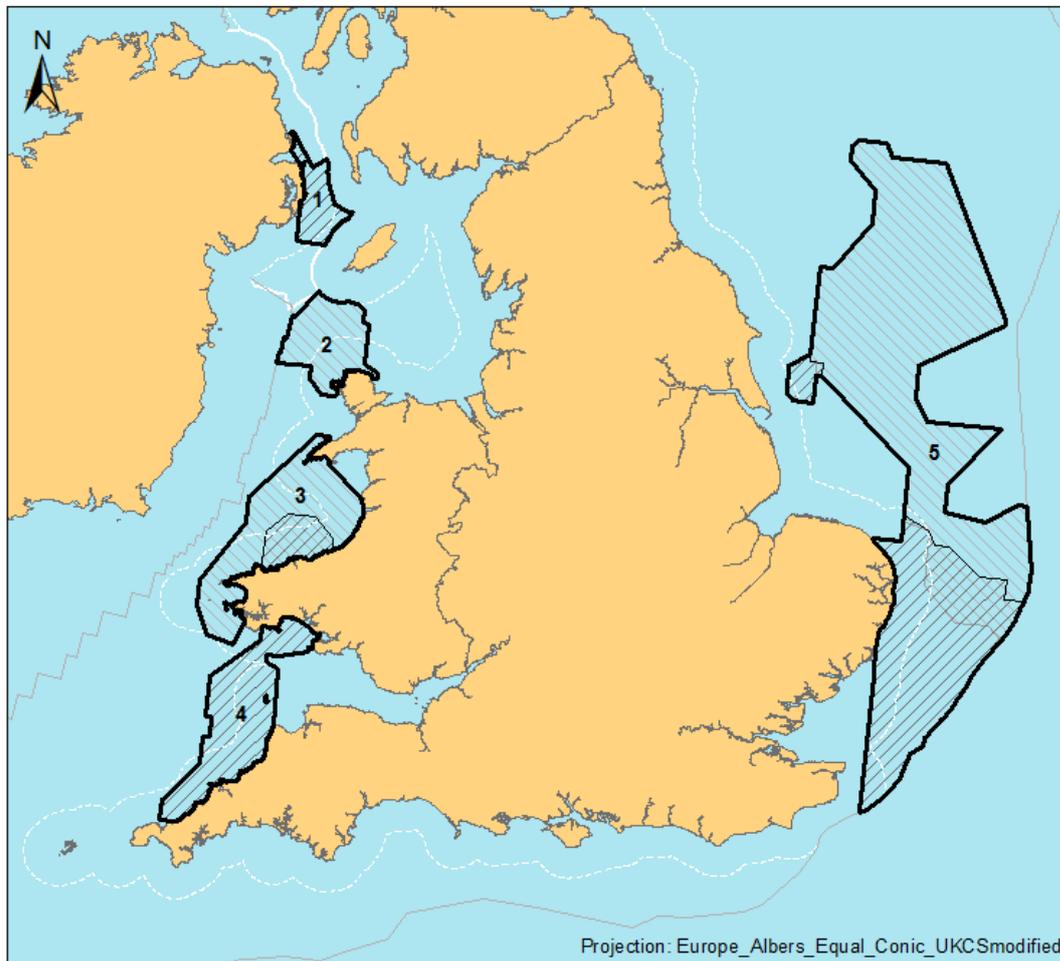
Annex 2: – Map of Unexploded Ordnance in UK waters



**Annex 3: – Marine Noise Registry Output for the Irish Sea and South West Approaches based on all impulsive noise types in the period 2015-2018.**



**Annex 4: – Map of Harbour Porpoise SACs and their seasonality.**



- |  |  |
|--|--|
|  SAC boundary |  UK EEZ (Apr. 2014)                                 |
| 1. North Channel   |  Northern Ireland Adjacent Water boundary (NI 2002) |
| 2. North Anglesey Marine   |  UK Territorial Seas                                |
| 3. West Wales Marine   |  Winter area  |
| 4. Bristol Channel Approaches  |  Summer area  |
| 5. Southern North Sea  |  |

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# Guidance for assessing the significance of noise disturbance against Conservation Objectives of harbour porpoise SACs.

(England, Wales & Northern Ireland)



## Note to users

The advice provided in this guidance document applies to all UK Special Areas of Conservation (SACs) for harbour porpoise, except for those in Scottish waters. Scottish Natural Heritage and Marine Scotland will be developing separate advice for the Inner Hebrides and the Minches SAC.

## 1 Introduction

The harbour porpoise is listed on Annex II of the Habitats Directive, which means Special Areas of Conservation (SACs) need to be designated to protect particularly important habitats for the species and contribute to achieving/maintaining Favourable Conservation Status (FCS) of the species.

A suite of five harbour porpoise Special Areas of Conservation (SACs) in Welsh, Northern Ireland and English waters were designated in February 2019. There is a further SAC in Northern Ireland for which harbour porpoise is listed as a qualifying feature; Skerries and Causeway. Statutory Nature Conservation Bodies (SNCBs) have a statutory obligation to establish and advise on the conservation objectives (COs) for the sites as well as advise on those operations capable of adversely affecting site integrity. Under UK regulations<sup>1</sup>, impacts on these SACs from plans or projects require formal consideration in Habitats Regulations Assessments.

The Conservation Objectives for these sites are:

**To ensure that the integrity of the site is maintained and that it makes an appropriate contribution to maintaining Favourable Conservation Status (FCS) for Harbour Porpoise in UK waters**

In the context of natural change, this will be achieved by ensuring that:

1. Harbour porpoise is a viable component of the site;
2. There is no significant disturbance of the species; and
3. The condition of supporting habitats and processes, and the availability of prey is maintained.

<sup>1</sup> The Conservation of Habitats and Species Regulations 2017; The Conservation of Offshore Marine Habitats and Species Regulation 2017

This document sets out the SNCBs' advice on assessing the risk of significant disturbance as a result of noise and consequently managing noise disturbance within harbour porpoise sites to avoid an adverse effect on site integrity. This advice should be considered by competent authorities when undertaking Habitats Regulations Assessments. The approach applies to all plans and projects within or affecting a site that could cause significant noise disturbance to harbour porpoise, alone or in combination with other plans or projects.

A number of noise generating activities can potentially result in disturbance and injury to harbour porpoise e.g. geophysical surveys for oil and gas exploration (Pirodda et al. 2014); unexploded ordnance (Benda-Beckman et al. 2015); Acoustic Deterrent Devices (Northridge et al. 2010) and pile driving undertaken for the installation of offshore wind turbines (e.g. Dähne et al 2013) or construction of harbours. Those undertaking such activities are required to mitigate against the risk of injury to marine mammals, typically by following the widely accepted JNCC guidelines/protocol<sup>2</sup>. However, these mitigation protocols primarily address the reduction of the injury risk in close proximity to the noise source and not disturbance which can occur many kilometres from the noise source.

Activities with the potential to cause non-trivial disturbance (generally larger scale and longer-term plans/projects) are currently assessed by considering the potential impact on harbour porpoise at the population level by using the best available population estimate of the relevant Management Unit (IAMMWG, 2015). Such assessments are typically carried out as part of Strategic and Environmental Impact Assessments and in support of an application for a European Protected Species licence to derogate the risk of committing a disturbance (and/or injury) offence under The Conservation of Habitats and Species Regulations 2017 and Northern Ireland and offshore equivalents. With the designation of SACs for harbour porpoise, site-specific conservation objectives must ensure that significant disturbance of the species in the designated sites is avoided – thus implementing that required in UK regulations on the conservation of habitats and species.

The designation of harbour porpoise SACs will undoubtedly have consequences as to how some activities operate, and measures may need to be put in place to reduce disturbance of harbour porpoises to ensure that the animals' potential usage of the site is maintained. Implementation of any disturbance management is likely to be challenging given the complexity of marine activities, regulatory arrangements and scientific uncertainty surrounding the significance of noise impacts on harbour porpoise. The approach recommended by SNCBs should encourage best practice mitigation for noise reduction and is intended to be adaptive, i.e. can be updated as new evidence becomes available through monitoring.

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<sup>2</sup>[http://jncc.defra.gov.uk/pdf/jncc\\_guidelines\\_seismicsurvey\\_aug2017.pdf](http://jncc.defra.gov.uk/pdf/jncc_guidelines_seismicsurvey_aug2017.pdf)  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/50006/jncc-pprotocol.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/50006/jncc-pprotocol.pdf)

## 2 Definition of an adverse effect on site integrity in relation to noise disturbance

Noise disturbance within an SAC from a plan/project, individually or in combination, is significant if it excludes harbour porpoises from more than:

1. 20% of the relevant area<sup>3</sup> of the site in any given day<sup>4</sup>, and
2. an average of 10% of the relevant area of the site over a season<sup>5,6</sup>.

Any plan or project which, individually or in combination, could breach the area/time thresholds as set out above should be deemed to have an adverse effect on site integrity; noise management measures such as adjustment of activities schedule, the use of alternative methods and noise abatement mitigation need to be considered in those instances.

## 3 Noise management approach

### 3.1 Background and development

The European Commission provided guidance<sup>7</sup> on what could constitute significant disturbance of a species in a Natura 2000 site: *'Any event, activity or process contributing to the long-term decline of the population of the species on the site can be regarded as a significant disturbance. (...) Any event, activity or process contributing to the reduction or to the risk of reduction of the range of the species within the site or to the reduction of the size of the available habitat of the species can be regarded as a significant disturbance.'* It also states that the intensity, duration and frequency of repetition of disturbance are important parameters.

The Habitats Directive (Article 3(1)) states that the "Natura 2000 network, composed of sites hosting ...habitats of the species listed on Annex II, shall enable the ...species' habitats concerned to be maintained or, where appropriate, restored at a ...at favourable conservation status in their natural range". The sites for harbour porpoises were identified based on habitat models (Heinänen and Skov, 2015) which predicted persistent, seasonal high-density areas of harbour porpoise based on 18 years of data (1994-2011), presumably because they offer good foraging opportunities or other environmental factors that are attractive to harbour porpoise. It is therefore important that harbour porpoise can access and utilise the habitats within the sites. However, as a mobile and wide-ranging species, density and abundance of harbour porpoise within the site varies considerably by season and year and it is therefore not appropriate or practical to aim to maintain a given harbour porpoise abundance in the site.

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<sup>3</sup> The relevant area is defined as that part of the SAC that was designated on the basis of higher persistent densities for that season (summer defined as April to September inclusive, winter as October to March inclusive).

<sup>4</sup> To be considered within the Habitats Regulation Assessment and, if needed, licence conditions should ensure that daily thresholds are not exceeded. Day to day monitoring of compliance is not practicable and therefore retrospective compliance monitoring is required to test whether the licence conditions are being adhered to.

<sup>5</sup> Summer defined as April to September inclusive, winter as October to March inclusive

<sup>6</sup> For example, a daily footprint of 19% for 95 days would result in an average of  $19 \times 95 / 183$  days (summer) = 9.86%  
<sup>7</sup>[http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/Provisions\\_Art\\_nov\\_2018\\_endocx.pdf](http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/Provisions_Art_nov_2018_endocx.pdf)

This guidance recommends that 'significant disturbance' should, therefore, be interpreted as a reduction of range of the species within the site or a reduction in access to available habitat. Given that disturbance, and therefore access to habitat is usually of a temporary nature<sup>8</sup>, management of noise in the sites should ensure that disturbance does not lead to the deterrence of harbour porpoise from a *significant portion* of the site for a *prescribed period of time* thus ensuring the species has sufficient access to important habitat within the sites.

### 3.2 Definition of 'significant portion of the site for a prescribed period of time'

One of the most likely impacts of disturbance on harbour porpoise is the loss of foraging opportunities (Nabe-Nielsen et al. 2017). Wisniewska et al. (2016) reported that tagged porpoises off Denmark foraged almost constantly, 24 hours a day, to meet their energy needs. Some evidence shows that the harbour porpoise has a high metabolic rate compared to terrestrial mammals of similar size (Rojano-Doñate et al. 2018). Failure to acquire sufficient energy may have fitness consequences, potentially giving them low resilience to disturbance (Wisniewska et al. 2016). The small size of the harbour porpoise limits the amount of stored energy it can carry, and it can only survive a few days without feeding (Kastelein et al. 1997).

The effects of displacement away from important habitats such as those within SACs are unknown. Animals may be displaced to potentially lower quality habitat, i.e. prey availability/quality encountered may be lower, the risk of predation and both intra- and inter-specific competition may be higher, all of which could have implications on their ability to survive and reproduce. The extent of habitat (for foraging and other activities) from which harbour porpoise have potentially been disturbed and displaced, i.e. 'gaps' in distribution caused by anthropogenic activity, can be translated into potential effects on population growth rates (Tougaard et al. 2013). In other words, displacement of harbour porpoise from parts of their habitat may result in the carrying capacity<sup>9</sup> (K) of the wider area being reduced. A definition of '*significant portion*' at the site level can, therefore, be based on the effects of the 'loss' of area available to harbour porpoise and therefore the carrying capacity of the site. This could in turn impact the ability of the site to make a full contribution to achieving/maintaining FCS of the species. Long-term, permanent reduction in carrying capacity could manifest itself in population declines (Tougaard et al. 2013). The assumption in the proposed approach for noise management is, therefore, that disturbance of harbour porpoise will result in their deterrence from areas of habitat and consequently affect the carrying capacity of the site.

A small, temporary reduction in carrying capacity is unlikely to prevent the site from contributing to species FCS; however, persistent displacement affecting large areas of the site may do so. In developing this guidance, various approaches to defining acceptable limits of reduction in carrying capacity to marine mammal populations were considered (e.g. The International Whaling Commission and the US Marine Mammal Protection Act). SNCBs chose to use the ASCOBANS<sup>10</sup> precautionary conservation objective for small cetacean populations, i.e. recovery to and/or maintaining  $\geq 80\%$  of carrying capacity in the long term.

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<sup>8</sup> Taking pile driving as an example, it is assumed that harbour porpoise will be excluded from an area of habitat for the duration of pile driving and for a period of time after pile driving has ceased. The length of time it takes for porpoises to return after the cessation of pile driving varies: generally, between a few hours (Tougaard et al. 2009; Brandt et al. 2012; Dahne et al. 2013) and up to 3 days (Diederichs et al. 2009; Brandt et al. 2011).

<sup>9</sup> The carrying capacity of a biological species in an environment is the maximum population size of the species that the environment can sustain indefinitely, given the food, habitat, water, and other necessities available in the environment.

<sup>10</sup> <https://www.ascobans.org/en/species/threats/bycatch>

Whereas this objective was not developed to meet the requirements of the Habitats Directive, nor to be applied to specific locations within the species' range, it does provide an indication of what magnitude of temporary 'habitat loss' might be considered significant.

For current purposes, it is assumed that a directly proportional relationship exists between loss of access to habitat and carrying capacity. Under the assumption of even distribution of prey availability, if some disturbance creates a permanent habitat loss of 1% of the total area, the carrying capacity decreases by 1%. Over some years the population will thus also decrease by 1% (as per Tougaard et al. 2013). It is also assumed, for simplicity, that the distribution of porpoise density is approximately uniform within the site<sup>11</sup>. Using harbour porpoise habitat as a proxy for carrying capacity the SNCBs suggest that the loss of access to habitat within a site should be no more than 20% (thus maintaining 80% carrying capacity). Therefore, the SNCBs advise that noise disturbance within the site does not exclude harbour porpoise from more than 20% of the site on any given day. However, over a season, SNCBs have determined that an average loss of access to more than 10% of the SAC would be considered significant, recognising that within the SAC the abundance of harbour porpoise per unit habitat is persistently higher than the equivalent sized habitat in the rest of the relevant Management Unit. Maintenance of the site's carrying capacity in the long term through management of temporary habitat 'loss' to below defined area/time thresholds is therefore designed to ensure that it continues to contribute in the best possible way to the maintenance of the species at FCS.

Three of the SACs have been identified based on elevated densities of harbour porpoise in either summer (April – September) or winter (October – March) (Heinänen and Skov, 2015, Table 1). The Southern North Sea SAC has both 'winter' and 'summer' areas with a small portion of it having been identified based on elevated densities all year round. The West Wales Marine SAC is mostly a 'summer' site with around a fifth of the site having been identified for year-round elevated densities. The timing of proposed plans or projects should therefore be taken into account when considering whether they could adversely affect the integrity of the site. Plans or projects potentially resulting in disturbance in the sites but operating outside of the season for which the site was identified will be unlikely to cause an adverse effect on site integrity and therefore the noise management approach in this guidance won't apply. This is also relevant in the estimation of the disturbance footprint in the two sites with both a summer and a winter/or year-round areas.

Table 1. Harbour porpoise SAC seasonal areas of elevated densities.

SAC	Season	Area (Km2)
Southern North Sea	Summer	27028
	Winter	12696
West Wales Marine	Summer	7376
	Winter	1460
Bristol Channel Approaches	Winter	5850
North Anglesey Marine	Summer	3249
North Channel	Summer	1604
Skerries and Causeway	Year round	108

<sup>11</sup> The variation in porpoise density within the sites is not well understood because of a lack of information on how they use the site. Future evidence gathering may help to better understand this variation.

### 3.3 Application of the approach in practice - two examples

#### The installation of offshore wind farms in the Southern North Sea SAC example

There are two main stages within the processes for development of an offshore wind farm where this approach should be applied:

1. Habitats Regulation Assessment (HRA) stage of an application prior to the project being given consent; and
2. during the construction phase of the project.

The HRA stage (stage 1) is carried out by the Regulator to rule out, or otherwise, that the plan/project will have an adverse effect on site integrity (alone or in combination). The HRA also considers whether mitigation/management is needed and can be put in place to prevent adverse effects. The implementation of the SNCBs' approach during the construction phase (stage 2) will provide the reassurance that the proposed disturbance area/time thresholds are not being exceeded (alone or in combination) and, therefore, that significant disturbance is not considered to be taking place.

The HRA stage (stage 1) of a project application will need to ascertain that noise disturbance within the site will not exclude harbour porpoise from more than 20% of the relevant area of the SAC on any given day or disturb porpoise from an average of more than 10% of the relevant area of the SAC over a season.

When considering impact pile driving in offshore wind farm construction, the assessment of the extent of noise disturbance, in this example, can be based on an *effective deterrent radius* (EDR) of 26km for a single monopile (Tougaard et al. 2013; Dähne et al. 2013). The area of harbour porpoise deterrence<sup>12</sup> therefore approximates to 2,124 km<sup>2</sup> during a single pile driving event. There may be several factors influencing the extent and duration of an animal's response; these can be related to the characteristics of the noise propagating from the source, environmental conditions, as well as to an individual harbour porpoise's motivation to stay or leave the area. It is therefore likely that deterrence distances will vary on a case by case basis. However, given the uncertainty around noise modelling predictions and the lack of a representative set of field observations that could be matched to each planned wind farm installation, the SNCBs' advice is to use 26km as a precautionary deterrent distance for pile driving associated with the installation of wind turbine foundations. The 26km EDR could also be used for other activities (e.g. UXOs) in the absence of alternative evidence. Different EDRs could be used, if well justified and ideally based on field observations and measurements. There will also be periodic review of the suitability of the 26km EDR for pile driving of wind farm foundations in light of new evidence.

Using pile driving in the Southern North Sea site as an example, two spatially separate pile driving events<sup>13</sup> or two adjacent/concurrent events<sup>\*14</sup> plus one more distant event\*\* wholly

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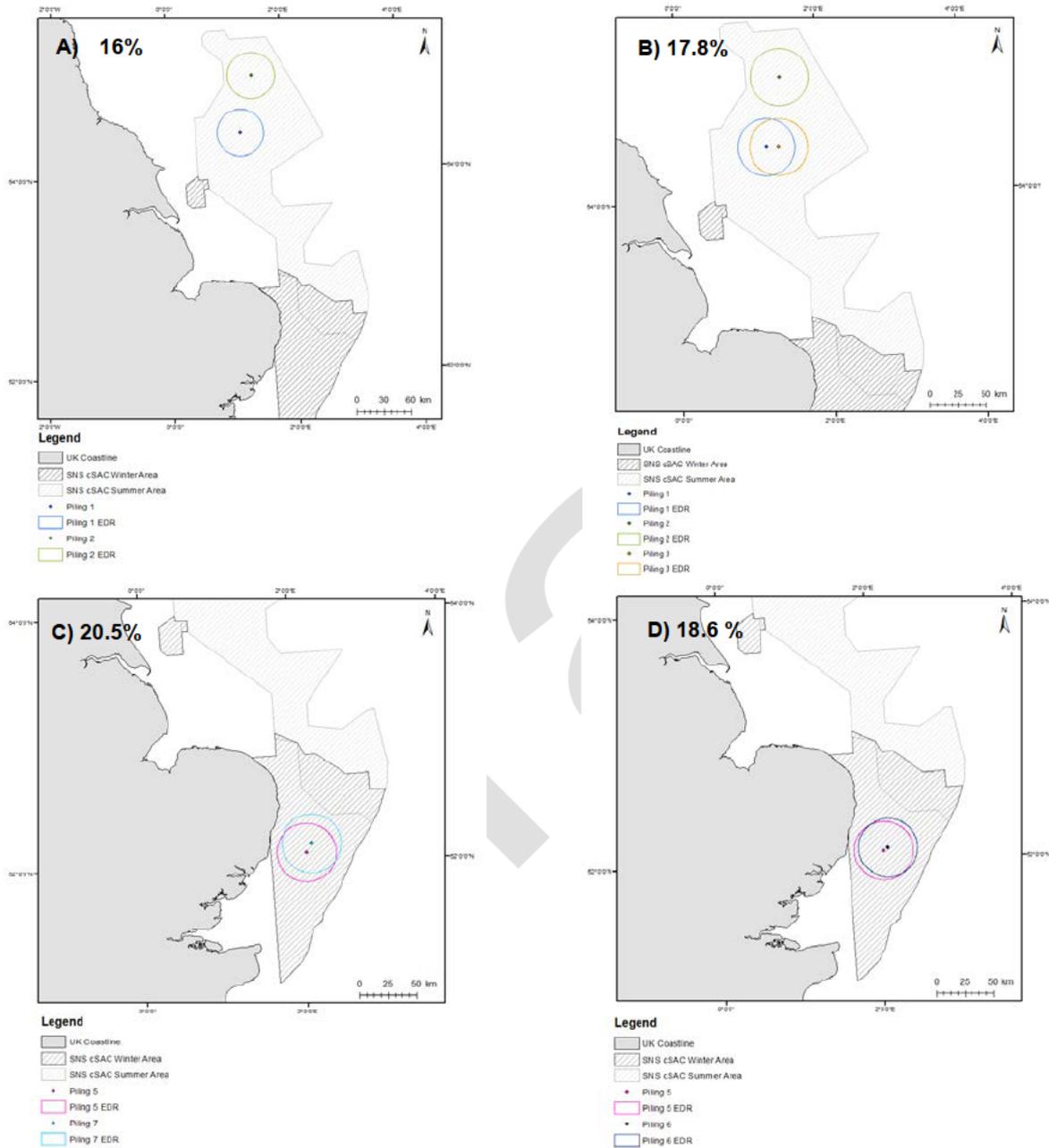
<sup>12</sup> To note that whilst displacement is the response that can more easily be observed, there might be other effects of disturbance that are less obvious (e.g. changes in diving patterns).

<sup>13</sup> An 'event' is the multiple hammer blows required to sink a single pile.

<sup>14</sup> \*Adjacent/concurrent piling events occur on the same day and have overlapping disturbance footprints (the effective deterrent radius far exceeds the distance between adjacent piles).

\*\* a distant piling event would not have overlapping disturbance footprints with other events in the SAC.

within the summer Southern North Sea SAC area on one day could approach the maximum of 20% area of disturbance. In the (smaller) winter area, a maximum of two (if adjacent/concurrent) pile driving events wholly within the SAC could exceed the maximum of 20% disturbance (Figure 1).



**Figure 1: Daily piling scenarios and associated % disturbance for the seasonal areas (A & B = summer; C & D = winter) of the Southern North Sea harbour porpoise SAC. Piling events are separated in (A). The distance between overlapping events are 11km (B), 9km (C) and 5km (D)**

Piling events at the edge (or in some cases beyond the edge) of the site will contribute less to the spatial disturbance footprint within the site. Similarly, EDRs from pile driving events planned near each other would overlap and reduce the spatial footprint, potentially enabling additional activities to take place within the site without causing an adverse effect.

The seasonal threshold, i.e. 10% average, needs to consider the daily activities but it would allow, for example, one pile driving event (or two adjacent) per day over the entire summer season (183 days) in the summer area. Alternatively, in the summer area there could be two distant pile driving events (as in Figure 1A) or two adjacent/concurrent events plus one distant event (as in Figure 1 B) for approximately half (91 days) of the summer season but with no further impulsive noise generated for the remaining 91 days.

When an HRA is carried out by the competent authority, many months before construction commences, there may be considerable uncertainty over project design, schedules and other planned developments. For this reason, a pre-construction condition should be attached to the project's Marine Licence<sup>15</sup> requiring an assessment to be undertaken prior to initiating works to determine if the activities and schedules of this project and of others (relevant for the in-combination assessment) are still within the parameters used to reach the HRA conclusion. Further management and mitigation may be required to satisfy the authorities that the SAC will not be adversely affected. There should be sufficient time between the assessment and the start of construction to allow for the effective implementation of mitigation/management, which could include:

1. Careful spatial planning and phasing of noisy activities.
2. Use of alternative foundations that do not require pile driving (e.g. suction buckets, gravity bases), noting that these may have other impacts.
3. Use of alternative methods of installation (e.g. vibropiling) to reduce the noise footprint.
4. Use of technology to reduce the sound levels at source or to minimise sound propagation and reduce the noise footprint. The use of bubble curtains as mitigation in the installation of a wind farm in Germany has resulted in smaller deterrence ranges (e.g. up to 12 km in Dahne et al. 2017)<sup>16</sup>.

During the construction phase (stage 2), it is recognised that it is challenging for regulators or industry to monitor the daily threshold i.e. 20% limit per day, in 'real' time. Therefore, careful planning through the HRA process is essential. For example, if a plan or project has been consented which could cause noise disturbance up to the allowable maximum daily threshold, then no other noise disturbance should be allowed to take place unless they can be scheduled to occur during days when no other noisy activities are occurring, whilst also ensuring the seasonal threshold is not exceeded.

#### Geophysical surveys in the Southern North Sea SAC example

All activities likely to generate noise disturbance will need to be assessed in the same way as above, but the EDR is likely to be different. For this example, using seismic surveys, a minimum EDR of 10km is proposed. This is based on a single study on the porpoise deterrence radius observed around the operation of a 470 cubic inch capacity airgun array (Thompson et al 2013). It is possible that a different EDR could be used in other assessments,

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<sup>15</sup> For example paragraph 18.2 in: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/753026/RoC\\_SNS\\_cSAC\\_HRA\\_5.0.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/753026/RoC_SNS_cSAC_HRA_5.0.pdf)

<sup>16</sup> To note that a smaller EDR than the 26km would apply for turbine installations using such methods.

if well justified and ideally based on field observations and measurements. There will also be periodic review of the suitability of the 10km EDR in light of new evidence. Unlike a static pile-driving event, a geophysical source will move over several km in a day. Therefore, the daily disturbance footprint should be calculated using a buffer, e.g 10km, around the predicted survey line (s) that can be completed on a single day. For example, a single 16km line will result in ~634 km<sup>2</sup> of area.

Unlike piling during the installation of a wind farm that will last for several months/years, geophysical surveys are usually completed in a few weeks. High resolution surveys typically last one week, whilst larger regional surveys involving the use of airgun arrays may last for a month or occasionally more.

Discussions with industry will be needed to explore ways in which geophysical surveys could take place with as little disruption to windfarm installation operations as possible while in keeping within the advised area/time thresholds within the sites. For example, to assist in reducing the cumulative daily disturbance footprint, activities should be planned as much as possible not to overlap in time. If that is not possible, then protocols for communication between operators would need to be established to avoid multiple noisy activities on the same days. For sites where seasonal areas have been identified, the area/time threshold approach applies to activities occurring within an area and in the corresponding season. Therefore, an option might be to undertake a survey (or part of) in the months when the area/time threshold approach does not apply for that area, thus helping to reduce cumulative seasonal thresholds.

Retrospective compliance monitoring, making use of data in the Marine Noise Registry for example, should take place to assess whether the regulatory processes are being effective in keeping noise below the advised area/time thresholds. Lessons learned will be used to improve assessment and management practices in the context of adaptive management.

### **3.4 Adapting the Approach**

To ensure that this approach advised by the SNCBs is reasonable and effective it should be periodically evaluated as more evidence becomes available. Industries with relevant plans or projects requiring HRA should be encouraged to contribute to evidence gathering to inform such evaluations. Conditions requiring environmental impact monitoring may be required in future consents where it meets a specific management purpose.

A strategic approach arising from the collaboration between industry, government (regulators and SNCBs), academia and NGOs that carefully considers the scale and nature of any impact monitoring, should better enable the success of the implementation and further development of this approach to noise management for harbour porpoise sites.

The advice presented in this document was developed over several years by SNCBs in consultation with industry, regulators and NGOs. During this time, no other approach was proposed that provided a satisfactory alternative to the assessment and management of noise disturbance within harbour porpoise SACs in England, Wales, Northern Ireland and respective offshore areas. It is recognised that the approach is based on assumptions and carries with it considerable uncertainty. It will be challenging to administer and will require close working between all stakeholders, particularly the different regulators. However, this threshold approach does provide clarity to industry as to the limits SNCBs advise they should work

within. The approach is thought to be simple and easy to calculate disturbance impacts. There may, however, be certain noisy activities in the future for which a different approach may be preferable. SNCBs intend to periodically review this advice to ensure it remains workable, effective and takes account of best available evidence.

## References

- Benda-Beckmann, A. M. von, Aarts, G. M., Sertlek, O. S., Lucke, K., Bemmelen, R., Verboom, W.C., Kastelein, R. A., Ketten, D. R., van Bemmelen, R., Lam, F-P A., Kirkwood, R. J. and Ainslie, M. A. (2015). Assessing the Impact of Underwater Clearance of Historical Explosives on Harbour Porpoises (*Phocoena phocoena*) in the Southern North Sea. *Aquatic Mammals*, 41(4), 503-523 <http://doi.org/10.1578/AM.41.4.2015.503>
- Brandt, M.J., Diederichs, A., Betke, K., and Nehls, G. (2011). Responses of harbour porpoises to pile driving at the Horns Rev II offshore wind farm in the Danish North Sea. *Marine Ecology Progress Series*, 421: 205–216.
- Brandt, M., Diederichs, A., Betke, K., and Nehls, G. (2012). Effects of Offshore Pile Driving on Harbor Porpoises (*Phocoena phocoena*). Pp. 281–284 in: Popper, A.N., and Hawkins, A. (eds.) *The effects of noise on aquatic life, Advances in Experimental Medicine and Biology*, vol. 730. Springer, New York.
- Dähne, M., Gilles, A., Lucke, K., Peschko, V., Adler, S., Krügel, K., Sundermeyer, J., and Siebert, U. (2013). Effects of pile-driving on harbour porpoises (*Phocoena phocoena*) at the first offshore wind farm in Germany. *Environmental Research Letters* 8, 025002.
- Dähne M., Tougaard, J., Carstensen, J., Rose, A. and Nabe-Nielsen, J. (2017) Bubble curtains attenuate noise from offshore wind farm construction and reduce temporary habitat loss for harbour porpoises. *Mar Ecol Prog Ser* 580:221-237. <https://doi.org/10.3354/meps12257>
- Diederichs A., Brandt M. J. and Nehls, G. (2009). Effects of construction of the transformer platform on harbor porpoises at the offshore test field “alpha ventus.” Report to Stiftung Offshore-Windenergie, BioConsult SH, Husum, Germany.
- Heinänen, S. and Skov, H (2015). The identification of discrete and persistent areas of relatively high harbour porpoise density in the wider UK marine area, JNCC Report No.544 JNCC, Peterborough.
- IAMMWG. (2015). Management Units for cetaceans in UK waters (January 2015). JNCC Report No. 547, JNCC Peterborough. [http://jncc.defra.gov.uk/pdf/Report\\_547\\_webv2.pdf](http://jncc.defra.gov.uk/pdf/Report_547_webv2.pdf)
- Kastelein R. A., Hardeman J. and Boer H. (1997). Food consumption and body weight of harbour porpoises (*Phocoena phocoena*). In: A.J. Read, P.R. Wiepkema & P.E. Nachtigall (eds). *The biology of the harbour porpoise*. De Spil Publishers, Woerden, The Netherlands, p 217-233.

Nabe-Nielsen, J., Teilmann, J., Tougaard, J. and van Beest, F. M. (2017). Effects of pile-driving noise on harbour porpoise populations. Poster presentation at the European Cetacean Society, Denmark, 1<sup>st</sup> - 3<sup>rd</sup> May 2017.

Northridge, S.P., Gordon, J.G., Booth, C., Calderan, S., Cargill, A., Coram, A., Gillespie, D., Lonergan, M. and Webb, A. (2010). Assessment of the impacts and utility of acoustic deterrent devices. Final Report to the Scottish Aquaculture Research Forum, Project Code SARF044. 34pp

Pirotta, E., Brookes, K. L., Graham, I. M., and Thompson, P. M. (2014). Variation in harbour porpoise activity in response to seismic survey noise. *Biology Letters*, 10(5).  
<http://doi.org/10.1098/rsbl.2013.1090>

Rojano-Doñate, L., McDonald, B. I., Wisniewska, D. M., Johnson, M., Teilmann, J., Wahlberg, M., Højer-Kristensen, J and Madsen, P. T. (2018). High field metabolic rates of wild harbour porpoises. *Journal of Experimental Biology* 221. doi: 10.1242/jeb.185827

Thompson P.M., Brookes K.L., Graham I.M., Barton T. R., Needham K., Bradbury G. and Merchant N.D. (2013). Short-term disturbance by a commercial two-dimensional seismic survey does not lead to long-term displacement of harbour porpoises. *Proceedings of the Royal Society B: Biological Sciences*. DOI: 10.1098/rspb.2013.2001

Tougaard, J., Carstensen, J., Teilmann, J., Skov, H., and Rasmussen, P. (2009). Pile driving zone of responsiveness extends beyond 20 km for harbour porpoises (*Phocoena phocoena*, (L.)). *Journal of the Acoustical Society of America*. 126, 11-14.

Tougaard, J., Buckland, S., Robinson, S. and Southall, B. (2013). An analysis of potential broad-scale impacts on harbour porpoise from proposed pile driving activities in the North Sea. Report of an expert group convened under the Habitats and Wild Birds Directive – Marine Evidence Group MB0138. 38pp.



Scottish Natural Heritage  
Dualchas Nàdair na h-Alba  
**nature.scot**

██████████  
Environmental Assistant  
Grieg Seafood Shetland Ltd

By email to ██████████ [griegseafood.com](mailto:██████████@griegseafood.com)

13 January 2020

Our ref: CPA157742

Dear ██████████

**Proposed modifications to finfish farms at Setterness North and South – Pre-application enquiry**

Thank you for your email of 16 December, requesting comments on the above proposals prior to submission of a formal screening and scoping request.

East Mainland Coast proposed Special Protection Area

The proposals lie within East Mainland Coast proposed Special Protection Area (pSPA) selected for its breeding red-throated diver and non-breeding great northern diver, long-tailed duck, red-breasted merganser and Slavonian grebe.

The Scottish Government has a policy of protecting such sites as if they were designated as set out in Scottish Planning Policy. The legal protection afforded to designated European sites is set out in the Conservation (Natural Habitats, &c.) Regulations 1994 as amended (the “Habitats Regulations”) or, for reserved matters, The Conservation of Habitats and Species Regulations 2017. Consequently, the competent authority is required to consider the effect of the proposal on the pSPA before it can be consented (commonly known as a Habitats Regulations Appraisal). The SNH website has a summary of Scottish Government policy:

<https://www.snh.scot/sites/default/files/2017-06/A1396043%20-%20Scottish%20Government%20Policy%20for%20proposed%20SACs%20and%20proposed%20SPAs%20PDF%20-%2010%20September%202014.pdf>

The proposals are within main concentrations of great-northern diver, and close to main concentrations of red-throated diver and red-breasted merganser. The applicant should supply the following information to allow the relevant competent authority(s) to assess potential impacts on the conservation objectives of East Mainland Coast pSPA:

1. How risk of entanglement in nets will be minimised, including whether predator nets are proposed and whether gill nets are planned to be deployed in the case of escaped stock.

2. The level of anticipated boat traffic and site servicing in relation to the existing fish farm sites, and proposed vessel routes. This should be provided in the context of potential disturbance to red-throated divers (which are considered to have a high sensitivity to visual disturbance) and great northern divers and red-breasted mergansers (which are considered to have a medium sensitivity to visual disturbance).
3. The predicted area of seabed to be affected by deposition at the two sites, and how these spatially differ from the current footprints of the existing sites.
4. Results from the visual benthic survey of the seabed predicted to be affected by the two sites. This will help assess impacts on foraging habitat on pSPA species.

### Yell Sound Coast Special Area of Conservation

The proposal lies close to Yell Sound Coast Special Area of Conservation (SAC) designated for its otters and common seals.

The site's status means that the requirements of the Conservation (Natural Habitats, &c.) Regulations 1994 as amended (the "Habitats Regulations") or, for reserved matters, The Conservation of Habitats and Species Regulations 2017 apply. Consequently, the relevant competent authority is required to consider the effect of the proposal on the SAC before it can be consented (commonly known as Habitats Regulations Appraisal). The SNH website has a summary of the legislative requirements (<https://www.snh.scot/professional-advice/safeguarding-protected-areas-and-species/protected-species/legal-framework/habitats-directive-and-habitats-regulations>).

The applicant should supply the following information to allow the relevant competent authority(s) to assess potential impacts on the conservation objectives of Yell Sound Coast SAC:

5. Information on how the risk of entanglement of otters and common seals in nets will be minimised.
6. How predators will be managed, and likely impacts of predator management on the conservation objectives of Yell Sound Coast SAC otters and common seals.
7. The level of anticipated boat traffic and site servicing in relation to the existing fish farm sites, and proposed vessel routes. The implications of these on disturbance of common seal haul-outs and pupping areas should be assessed.

### Yell Sound Coast Site of Special Scientific Interest

Yell Sound Coast Site of Special Scientific Interest (SSSI) is notified for its otters, and overlaps Yell Sound Coast SAC. Impacts on the SSSI will be assessed as part of the assessment of impacts on the otter interest of the SAC.

### Priority Marine Features

8. The visual seabed survey should identify any Priority Marine Features (PMF) present within the predicted footprint of the new sites, and an assessment of likely impacts on any PMF made.

European Protected Species

9. Likely impacts on cetaceans should be assessed, and it should be stated whether the use of ADDs is proposed.

Yours sincerely

■■■■ ■■■■

Operations Officer

**From:** [REDACTED] gov.scot  
**To:** Cathy Tilbrook  
**Subject:** RE: Discussion on ADDs  
**Date:** 06 February 2020 08:55:42

---

No problem Cathy – thanks for letting me know.

Yes, hopefully we can schedule a catch up at some point during the coming weeks – do let me know when you're likely to be at VQ next and I can try and sort something out.

Best regards

[REDACTED]

---

**From:** Cathy Tilbrook  
**Sent:** 05 February 2020 09:52  
**To:** [REDACTED] J ([REDACTED])  
**Subject:** RE: Discussion on ADDs  
Hi [REDACTED]

I'm afraid my other meeting in VQ tomorrow is not going to work, so I won't now be coming through. I will check my diary though and if there is an opportunity to come through to VQ any time soon then I'll let you know, as it would be useful to meet with you and [REDACTED]. Hopefully we can reschedule this ADD discussion soon; I will contact [REDACTED] for an update. Cheers, Cathy

**Cathy Tilbrook | Head of Sustainable Coasts & Seas**

Scottish Natural Heritage | Battleby | Redgorton | Perth | PH1 3EW | t: 01738 [REDACTED] | m: [REDACTED] [REDACTED] Dualchas Nàdair na h-Alba | Battleby | Ràth a Ghoirtein | Peairt | PH1 3EW nature.scot – Connecting People and Nature in Scotland – @nature\_scot

I normally work Tuesday - Friday.

Please note SNH will be changing its name to NatureScot from 1 May 2020. Our Flickr page has moved to: <https://www.flickr.com/photos/naturescot/>  
#YCW2020 - Now is the time to start making a splash about Scotland's Coasts and Waters – [www.nature.scot/YCW2020](http://www.nature.scot/YCW2020)

---

**From:** [REDACTED] gov.scot <[REDACTED] gov.scot>  
**Sent:** 04 February 2020 17:27  
**To:** Cathy Tilbrook <[Cathy.Tilbrook@nature.scot](mailto:Cathy.Tilbrook@nature.scot)>  
**Subject:** RE: Discussion on ADDs

Hi Kathy,

Yes, [REDACTED] would be your contact with regard to ADD next steps/timescales.

From my perspective, more than happy to meet at 10am on Thursday if you are in VQ.

[REDACTED] [REDACTED] (Head of Aquaculture Unit) will also likely be available and I would think would be keen to join – I will check with her when she returns to the office. I think you may have already met [REDACTED] before?

Feel free to drop me a line when you know if you are likely to be at VQ on Thursday and I'll make the necessary arrangements.

Thanks

[REDACTED]

---

**From:** Cathy Tilbrook <[Cathy.Tilbrook@nature.scot](mailto:Cathy.Tilbrook@nature.scot)>  
**Sent:** 04 February 2020 17:21  
**To:** [REDACTED] J ([REDACTED]) <[REDACTED] gov.scot>  
**Subject:** RE: Discussion on ADDs

Hi [REDACTED]

OK thanks. I may still come to VQ on Thursday as I have tentatively set up a meeting with another MS colleague for early afternoon. If this goes ahead (I should know tomorrow), would it be possible to retain the 10am slot to have a catch up about aquaculture work more generally? I'm also keen to get some indication of next steps and timescales on the ADD work, but probably need to talk to [REDACTED] on that?

Cheers, Cathy

---

**From:** [redacted] <[redacted]@gov.scot> <[redacted]@gov.scot>  
**Sent:** 04 February 2020 16:57  
**To:** Cathy Tilbrook <Cathy.Tilbrook@nature.scot>  
**Subject:** FW: Discussion on ADDs

Cathy,

You'll see that I've had to postpone the meeting on ADDs – sorry that this has come about just after I confirmed the details with you!

Hope it doesn't cause you or your colleagues any inconvenience if you had made travel plans etc – apologies if so.

With best regards

[redacted]

---

**From:** [redacted] J ([redacted])  
**Sent:** 04 February 2020 15:43  
**To:** 'Cathy Tilbrook' <Cathy.Tilbrook@nature.scot>  
**Cc:** [redacted] <[redacted]@nature.scot>; [redacted] <[redacted]@nature.scot>; [redacted] E ([redacted]@gov.scot)  
**Subject:** RE: Discussion on ADDs

Hi Cathy,

Look forward to meeting yourself and [redacted] at VQ on Thursday.

With regards to dial in details for [redacted] and [redacted] the number is shown below. I'll send round an updated calendar appointment including the details too.

Thanks

[redacted]

**Dial in number:** [redacted]  
**Guest Passcode:** [redacted]

[redacted]

Aquaculture Planning Policy Adviser | Marine Scotland | Scottish Government | 1B North Victoria Quay | Edinburgh | EH6 6QQ

Tel: 0131 528 [redacted] | Mobile: [redacted] | email: [redacted]@gov.scot

---

**From:** Cathy Tilbrook <Cathy.Tilbrook@nature.scot>  
**Sent:** 04 February 2020 15:31  
**To:** [redacted] J ([redacted]) <[redacted]@gov.scot>; [redacted] E ([redacted]@gov.scot)  
**Cc:** [redacted] <[redacted]@nature.scot>; [redacted] <[redacted]@nature.scot>; [redacted] <[redacted]@nature.scot>  
**Subject:** RE: Discussion on ADDs

Hi [redacted] and [redacted]

Just to confirm that [redacted] and I are planning to come to VQ on Thursday.

[redacted] and [redacted] will join by phone, if you can let us know what number they should use to join the discussion.

Thanks, Cathy

**Cathy Tilbrook | Head of Sustainable Coasts & Seas**

Scottish Natural Heritage | Battleby | Redgorton | Perth | PH1 3EW | t: 01738 [redacted] | m: [redacted] Dualchas Nàdair na h-Alba | Battleby | Ràth a Ghoirtein | Peairt | PH1 3EW  
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#YCW2020 - Now is the time to start making a splash about Scotland's Coasts and Waters – [www.nature.scot/YCW2020](http://www.nature.scot/YCW2020)

-----Original Appointment-----

**From:** Cathy Tilbrook  
**Sent:** 30 January 2020 12:08  
**To:** [redacted] <[redacted]@gov.scot>  
**Subject:** Accepted: Discussion on ADDs

**When:** 06 February 2020 10:00-11:00 (UTC+00:00) Dublin, Edinburgh, Lisbon, London.

**Where:** VQ Ground Floor Meeting Room G-D45 (GD-Bridge) (8)

Dear Cathy, [REDACTED]

I work as part of the Aquaculture Team in Marine Scotland, advising on planning policy. I understand that you are aware of a review being undertaken by [REDACTED] [REDACTED] in the Marine Planning and Policy directorate of Marine Scotland which has been investigating the legal framework of Acoustic Deterrent Devices (ADDs) used in the aquaculture industry.

[REDACTED] [REDACTED] and myself in the aquaculture team had a meeting with [REDACTED] last week to discuss her paper on this issue, particularly any further role which local authorities can play in the process. ADDs deployed at fish farms are often considered as equipment by local authorities and hence their use would be considered during the planning permission process. [REDACTED] paper details how each of the local authorities with an interest in aquaculture considers these issues currently – it is noted that there is some inconsistency and that there is the potential for local authorities to take a more consistent approach to this issue.

We felt that it would be appropriate to discuss this issue further with local authority representatives and to that degree felt it would be appropriate to organise a workshop with LAs to discuss concerns and agree best practice. Before any such workshop takes place, we felt that it would be useful to discuss further with appropriate regulators/statutory consultees to ensure a consistent approach.

To that degree, [REDACTED] [REDACTED] and I were wondering whether it would be possible to have a meeting with you to discuss this issue and any proposals further prior to the local authority workshop taking place? Possible dates which may be feasible are February 3rd or the 6th (pm) and I was wondering if you (or appropriate colleagues) may potentially be available on either of those days?

If you are happy to be part of the discussions then please could you let me know your availability for those dates (or alternatives in the next couple of weeks) and I shall look to organise a meeting for us all to discuss these issues together.

Many thanks

[REDACTED]  
[REDACTED]

Aquaculture Planning Policy Adviser | Marine Scotland | Scottish Government | 1B North  
Victoria Quay | Edinburgh | EH6 6QQ

Tel: 0131 528 [REDACTED] | Mobile: [REDACTED] [REDACTED] | email: [REDACTED]@[gov.scot](mailto:[REDACTED]@gov.scot)

From 1 May 2020, SNH will be rebranding and changing its name to NatureScot.

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Thoiribh an aire airson adhbharan gnothaich, 's dòcha gun tèid

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# The Scottish Salmon Company



## Predator Control Plan

Sgian Dubh, Loch Striven

Date	12 <sup>th</sup> December 2018
Revision No.	A1
Author	██████████
Reviewer	██████████
Approved by	██████████

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## Glossary of Terms

DSFB	District Salmon Fisheries Board
MSS	Marine Scotland Science
SSC	Scottish Salmon Company
SSPO	Scottish Salmon Producer's Organisation

## **1. Introduction**

The Scottish Salmon Company (SSC) recognises that predation on farmed stock is not only of welfare and financial concern to the company, but can have significant impacts to stock containment, and as such will take all reasonable steps to ensure that interaction with predators is minimised with nominal environmental impact to other local wildlife. As a general policy The Scottish Salmon Company will not locate any fish farm near grey seal pupping sites.

The anti-predation devices in the following document will be reviewed annually by the site manager and area manager to assess their effectiveness, if found to be unnecessary or ineffective, the appropriate actions will be taken to remedy the situation. In the unlikely event that a predator succeeds in net damage resulting in an escape incident, SSC has a Site Specific Containment and Escapes Contingency Plan in place.

## **2. Wildlife Log Book**

The site staff will fill in a wildlife log book of wildlife sightings around the fish farm to record the incidence of wildlife sightings and any interactions with the fish farm. This will help to determine the need and effectiveness of site anti-predator devices and will help to inform the site and area managers during annual Predator Control reviews.

## **3. Wildlife Assessment**

The last generations did not incur losses to predator damage and no recorded interactions with wildlife near the cage grid. Wildlife logs kept at the other SSC Striven sites indicate that site staff occasionally see both common and grey seals. Through the Consultation on Seal Haul-Out Sites (Marine Scotland, 2010) there were no seal haul-out sites recorded in the immediate vicinity of the existing sites in Loch Striven. It is thought likely that seals are the most significant potential predator to the site. For this reason the site will be equipped with multiple methods of seal deterrent, and the measures will be monitored regularly by site staff to assess their effectiveness. The site will be fitted with the following anti-predator deterrents.

## **4. Net Tensioning and Seal Blinds**

SSC typically employs a net tensioning system, rather than external predator nets, to deter seal predation. Net tensioning systems hold the cage net uniformly taut, so that it presents a “wall” to any underwater predator with no slack areas for entanglement or purchase on the net through which a seal can grab or bite fish. The use of a net tensioning system removes the need for predator nets and therefore eliminates the risk of entanglement for predators (both seals and diving birds).

The use of net tensioning is recognised as best practice in terms of predator control. Seal Blinds may also be used on site, which are sections of material hanging down from underwater net panels, acting as a curtain to prevent seals from reaching the fish from below the cage. This system is also recognised as best practice.

### **4.1 Predatory Bird Protection**

Various species of bird are attracted to salmon cages as a potential food source. Surface feeding birds including heron, gannet, and gulls take fish, usually smolts, from or near the water surface, some by shallow plunging from the air. Diving birds, including cormorant, shag, auks and divers obtain their food during dives between periods of swimming on the surface of the water.

SSC will be fitting tensioned 2" mesh nets in conjunction with bird net supports in accordance with RSPB recommendations, which will reduce the risk of bird entanglement. Top nets are inspected and

re-tensioned on a daily basis and maintenance conducted as required which further reduces the potential risk of entanglement to birds. There is careful control of fish feed to make sure that it is not left available, and feed spreaders are faced downwards and set to spread the feed evenly so there is no available feed source to attract birds. Scare crows are used on sites with significant bird problems.

## **5. Effective Husbandry**

The presence of mortalities is known as an attractant to seals and an effective mortality removal procedure can reduce predator attacks. Mortalities are removed by a Lift-Up system although manual removal of mort and moribund fish is also completed as required. This practice will reduce predator attacks, particularly from seals, to a minimum. Careful site and waste management procedures are in place that prevent net and rope debris entering the marine environment during site servicing, thereby removing any entanglement risks. The site will be kept in a neat and tidy state and any rubbish found on the adjacent shoreline will be collected by local site staff on a regular basis, to minimise impacts to the local environment.

The above will be done as a requirement at all sites. The following predator deterrents have been identified as potentially necessary in site defence.

## **6. Acoustic Deterrent Devices**

If necessary at the site, Acoustic Deterrent Devices (ADDs) will be activated. The ADDs will be available from a pool of ADDs which can be delivered and fitted to the site promptly. The ADDs will be the OTAQ Seal Fence System, which is a modular system that creates a wall of sound around the site, causing discomfort to an approaching seal. A log will be kept of the incidence of attack, and timings and duration of the ADD activation, to be assessed by SSC managers annually to determine usage.

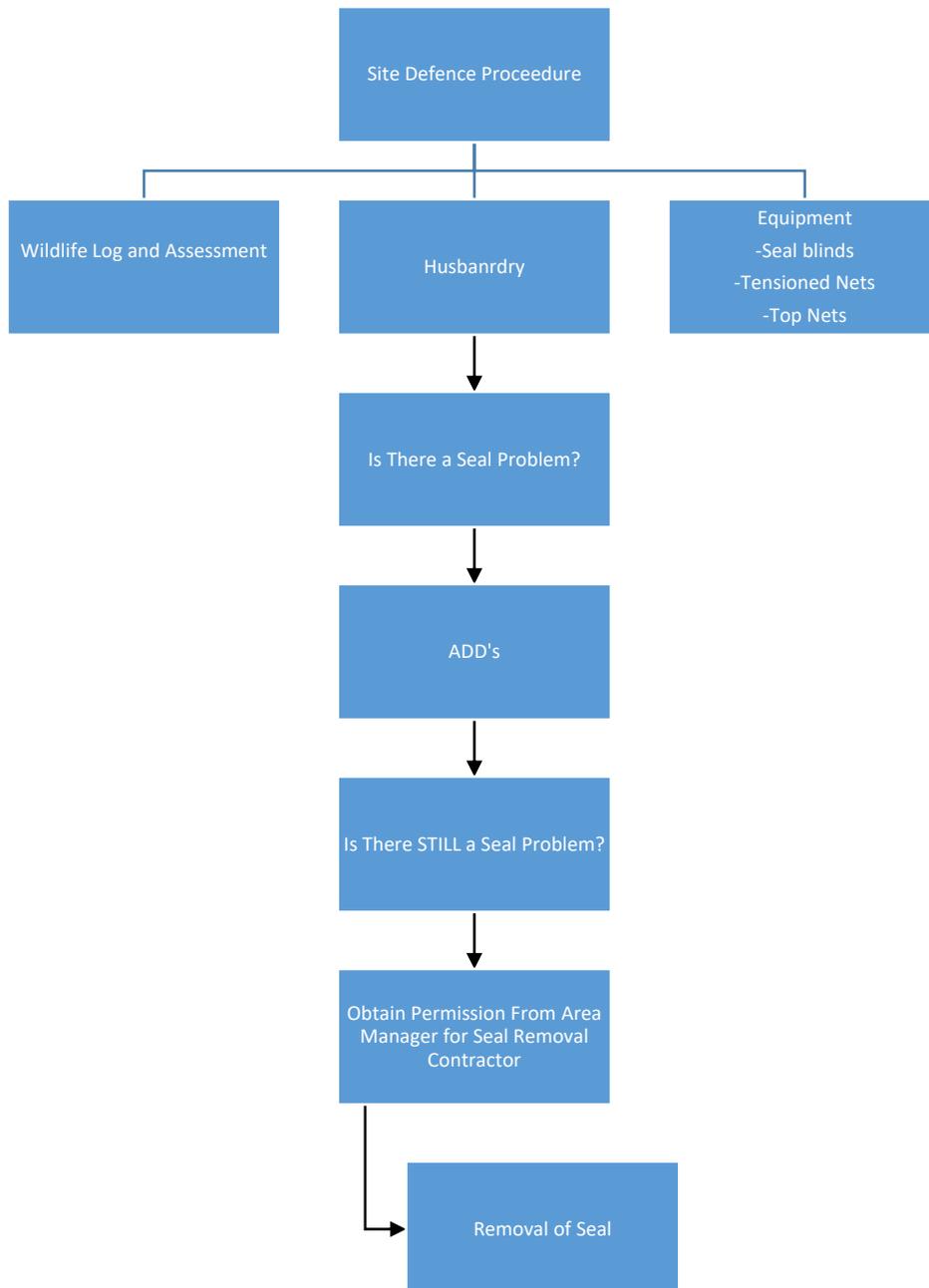
## **7. Anti-predator nets**

It is not common practice for SSC to use anti-predator nets, as there is a high risk of entanglement to diving birds and mammals. However, SSC may consider using these nets in certain circumstances. The Site Manager will consult with the Regional Manager prior to deploying these nets.

## **8. Shooting of Seals**

If all other methods of deterrents prove ineffective, as a last resort if necessary, persistent problem seals will be shot. Regional Managers must approve the requirement to remove problem seal before this action can be taken. SSC will contract a licensed marksman to remove the rogue seal. Records will be kept of seal removal contracts, including the number and type of seals removed from the site and the company will ensure compliance with current legislation. SSC will follow guidelines of Scottish Government, to meet obligations and responsibilities as detailed in the Marine (Scotland) Act, issued in February 2010.

### Flow Chart of Anti-Predator Device Assessment



# The Scottish Salmon Company



## Predator Control Plan

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Strone, Loch Striven

<b>Date</b>	<b>28<sup>th</sup> December 2018</b>
<b>Revision No.</b>	<b>A1</b>
<b>Author</b>	██████████
<b>Reviewer</b>	██████████
<b>Approved by</b>	██████████

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The anti-predation devices in the following document will be reviewed annually by the site manager and area manager to assess their effectiveness, if found to be unnecessary or ineffective, the appropriate actions will be taken to remedy the situation. In the unlikely event that a predator succeeds in net damage resulting in an escape incident, SSC has a Site Specific Containment and Escapes Contingency Plan in place.

## 2. Wildlife Log Book

The site staff will fill in a wildlife log book of wildlife sightings around the fish farm to record the incidence of wildlife sightings and any interactions with the fish farm. This will help to determine the need and effectiveness of site anti-predator devices and will help to inform the site and area managers during annual Predator Control reviews.

## 3. Wildlife Assessment

Strone site has local common seal populations within a 3km radius of the site and as such, seals are likely to be the most significant potential predator to the site. For this reason the site will be equipped with multiple methods of seal deterrent, and the measures will be monitored regularly by site staff to assess their effectiveness. The site will be fitted with the following anti-predator deterrents.

## 4. Net Tensioning and Seal Blinds

SSC typically employs a net tensioning system, rather than external predator nets, to deter seal predation. Net tensioning systems hold the cage net uniformly taut, so that it presents a “wall” to any underwater predator with no slack areas for entanglement or purchase on the net through which a seal can grab or bite fish. The use of a net tensioning system removes the need for predator nets and therefore eliminates the risk of entanglement for predators (both seals and diving birds).

The use of net tensioning is recognised as best practice in terms of predator control. Seal Blinds may also be used on site, which are sections of material hanging down from underwater net panels, acting as a curtain to prevent seals from reaching the fish from below the cage. This system is also recognised as best practice.

### 4.1 Predatory Bird Protection

Various species of bird are attracted to salmon cages as a potential food source. Surface feeding birds including heron, gannet, and gulls take fish, usually smolts, from or near the water surface, some by shallow plunging from the air. Diving birds, including cormorant, shag, auks and divers obtain their food during dives between periods of swimming on the surface of the water.

SSC will be fitting tensioned 2" mesh nets in conjunction with bird net supports in accordance with RSPB recommendations, which will reduce the risk of bird entanglement. Top nets are inspected and re-tensioned on a daily basis and maintenance conducted as required which further reduces the potential risk of entanglement to birds. There is careful control of fish feed to make sure that it is not left available, and feed spreaders are faced downwards and set to spread the feed evenly so there is no available feed source to attract birds. Scare crows are used on sites with significant bird problems.

## **5. Effective Husbandry**

The presence of mortalities is known as an attractant to seals and an effective mortality removal procedure can reduce predator attacks. Mortalities are removed by a Lift-Up system although manual removal of mort and moribund fish is also completed as required. This practice will reduce predator attacks, particularly from seals, to a minimum. Careful site and waste management procedures are in place that prevent net and rope debris entering the marine environment during site servicing, thereby removing any entanglement risks. The site will be kept in a neat and tidy state and any rubbish found on the adjacent shoreline will be collected by local site staff on a regular basis, to minimise impacts to the local environment.

The above will be done as a requirement at all sites. The following predator deterrents have been identified as potentially necessary in site defence.

## **6. Acoustic Deterrent Devices**

If necessary at the site, Acoustic Deterrent Devices (ADDs) will be activated. The ADDs will be available from a pool of ADDs which can be delivered and fitted to the site promptly. The ADDs will be the OTAQ Seal Fence System, which is a modular system that creates a wall of sound around the site, causing discomfort to an approaching seal. A log will be kept of the incidence of attack, and timings and duration of the ADD activation, to be assessed by SSC managers annually to determine usage.

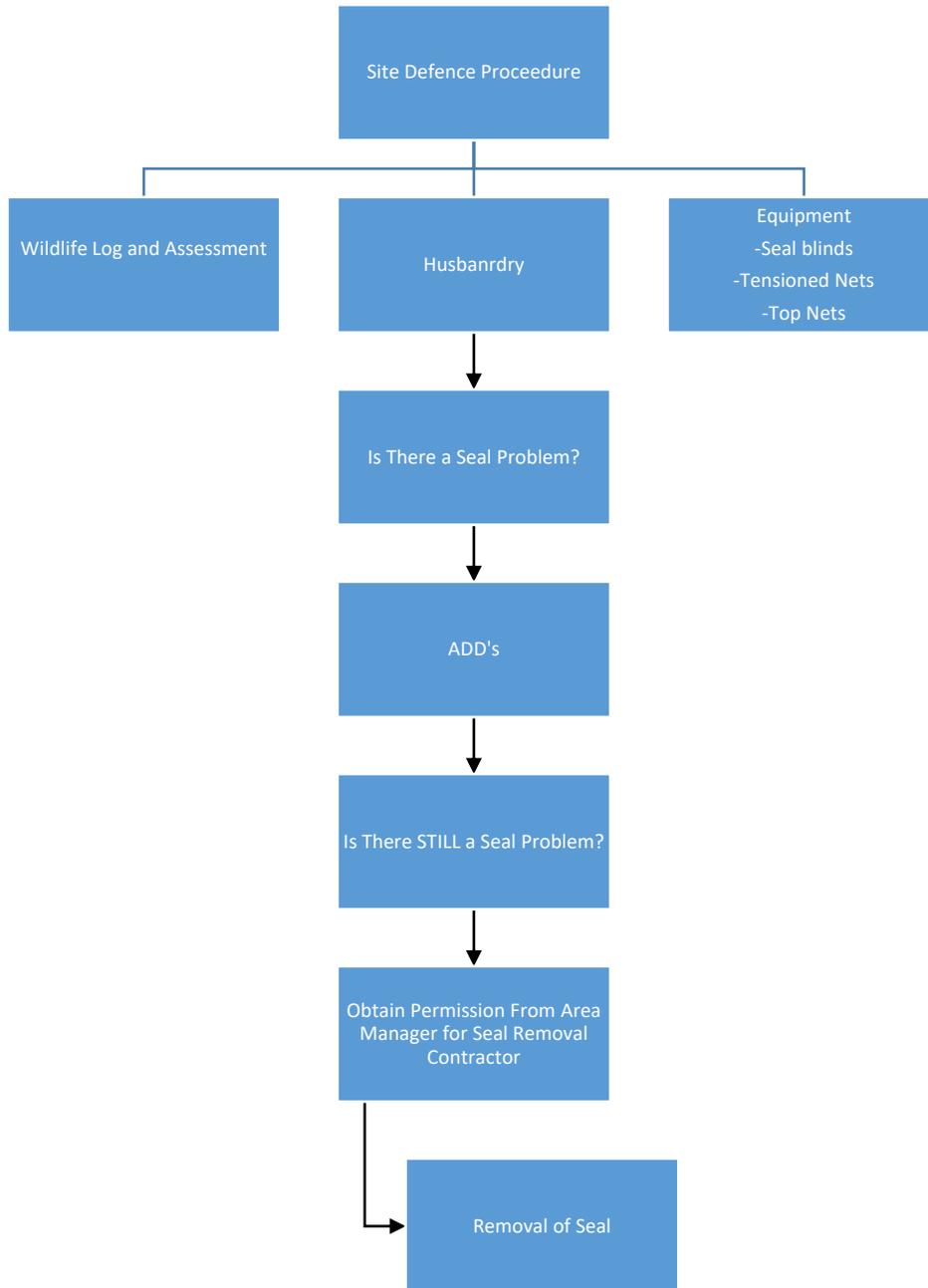
## **7. Anti-predator nets**

It is not common practice for SSC to use anti-predator nets, as there is a high risk of entanglement to diving birds and mammals. However, SSC may consider using these nets in certain circumstances. The Site Manager will consult with the Regional Manager prior to deploying these nets.

## **8. Shooting of Seals**

If all other methods of deterrents prove ineffective, as a last resort if necessary, persistent problem seals will be shot. Regional Managers must approve the requirement to remove problem seal before this action can be taken. SSC will contract a licensed marksman to remove the rogue seal. Records will be kept of seal removal contracts, including the number and type of seals removed from the site and the company will ensure compliance with current legislation. SSC will follow guidelines of Scottish Government, to meet obligations and responsibilities as detailed in the Marine (Scotland) Act, issued in February 2010.

### Flow Chart of Anti-Predator Device Assessment



# The Scottish Salmon Company



## Supporting Information for Planning Application

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Ardyne Marine Fish Farm

Firth of Clyde

Date	November 2019
Revision No.	A1
Author	[REDACTED]
Approved By	[REDACTED]

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## GLOSSARY

ABBREVIATION	DESCRIPTION
AoD	Above Ordnance Datum
ABC	Argyll and Bute Council
ABC MCDU	Argyll and Bute Council Marine and Coastal Development Unit
ADD	Acoustic Deterrent Device
AutoDEPOMOD	A software package used for modelling biomass and chemotheraputants for finfish farms in Scotland, developed by SEPA and SAMs
CAR	Controlled Activities Regulations
CCT	Coastal Character Type
CoGP	Code of Good Practice
ECE	Equilibrium Concentration Enhancement
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EPS	European Protected Species
EQS	Environmental Quality Standard
FMS	Farm Management Statement
GAP	Good Agricultural Practices
GSSI	Global Sustainable Seafood Initiative
HRA	Habitats Regulations Appraisal
km	kilometre
LCA	Landscape Character Assessment
LCT	Landscape Character Type
LVI	Landscape and Visual Impacts
LVIA	Landscape and Visual Impact Assessment
m	metre
MA	Management Area
MPA	Marine Protected Area
MSS	Marine Scotland Science
NSA	National Scenic Area
PGI	Protected Geographical Indication
PMF	Priority Marine Feature
QMS	Quality Management Systems
ROV	Remote Operated Vehicle
SAC	Special Area of Conservation
SEPA	Scottish Environmental Protection Agency
SHO	Seal Haul Out
SLICE	Sea lice treatment
SNH	Scottish Natural Heritage
SPA	Special Protection Area
SSC	The Scottish Salmon Company
SSPO	Scottish Salmon Producers Organisation
T	tonnes
VP	Viewpoint
w	watt
WLA	Wild Land Area
ZTV	Zone of Theoretical Visibility

## 1 INTRODUCTION

This Supporting Information document has been prepared by The Scottish Salmon Company (SSC). SSC are proposing to submit an application under the Town and Country Planning (Scotland) Act 1997 (as amended), for a replacement of the existing marine fish farm at Ardyne ('the Existing Site'). The proposed replacement involves removing the existing 8 x 100 m circumference pens (and associated moorings infrastructure) and installing 14 x 120 m circumference pens (and associated moorings infrastructure) ('the Replacement').

A request for a Screening and Scoping Opinion for the Replacement was submitted to Argyll and Bute Council (ABC) in February 2019 (Application Reference No: 19/00335/SCRSCO). The Opinion issued by ABC on 5<sup>th</sup> July 2019 confirmed that an Environmental Impact Assessment (EIA) would not be required and that the application can be considered appropriately through the submission of supporting information rather than an EIA Report.

The Application has therefore been accompanied by Supporting Environmental Information, contained in this document and in the Technical Appendices, and as directed by the consultees' comments received through the pre-application consultation process. These provided details of what was specifically required to be covered within the final planning application, including details of survey and data requirements. As agreed with ABC, technical surveys have informed the Replacement application.

The following information, planning figures and elevation drawings will accompany the Application as Technical Appendices.

- Location/ Layout Plans;
- Elevation plans of Proposed Pens;
- Supporting Environmental Information; and
- Technical Appendices A – O.

The Supporting Environmental Information is provided and discussed in more detail, where necessary, in Section 4 of this document. This document presents an assessment of the potential effects of the Replacement upon the environment to establish whether it complies with planning policy.

### 1.1 Scottish Salmon Company

The Scottish Salmon Company (SSC) is one of the leading Scotland based producers of fresh Scottish Salmon, employing a team of over 600 staff across 60 sites on the West Coast and Hebrides. A total of 15 staff are currently employed across the three existing marine sites in Loch Striven/ Sound of Rothesay.

SSC are committed to Scottish Provenance and take great pride in producing quality Scottish Salmon, whilst being committed to the environmental, cultural and economic growth and sustainability of rural Scotland.

SSC are focused on sustainable business development following international demand for Scottish salmon, the UK's largest food export. SSC are fully engaged in all stages of the supply chain, from smolt production through freshwater and marine farming to harvesting and processing, as well as sales and marketing, ensuring total supply chain integrity, full traceability and Scottish guaranteed provenance.

### 1.2 Accreditations/ Standards

SSC holds and maintains accreditations/certifications for a number of Standards including Global G.A.P, Best Aquaculture Practice (BAP), Code of Good Practice for Scottish Finfish Aquaculture, Protected Geographical Indication (PGI), Label Rouge, and British Retail Consortium (BRC). SSC is also accredited for ISO14001:2015, Environmental Management Systems.

### 1.2.1 *GlobalG.A.P*

GlobalG.A.P. is the worldwide standard for Good Agricultural Practices. It covers a broad range of criteria including Food Safety and Traceability, Environment (including biodiversity), Workers' Health, Safety & Welfare, Animal welfare, Integrated Pest Control (ICP), Quality Management Systems (QMS) and Hazard Analysis & Critical Control Points (HACCP).

### 1.2.2 *Best Aquaculture Practice (BAP)*

Best Aquaculture Practices (BAP) is the most comprehensive, proven and trusted third-party aquaculture certification programme worldwide. This standard encompasses environmental responsibility, social responsibility, food safety, animal health and welfare. It is benchmarked by globally recognised GSSI (Global Sustainable Seafood Initiative), which is established to ensure confidence in the supply and promotion of certified seafood, as well as to promote improvement in seafood certification schemes.

### 1.2.3 *Code of Good Practice for Scottish Finfish Aquaculture*

The Code of Good Practice is guidance for the Scottish Aquaculture industry and has been produced as a collaborative process involving industry, regulators, government and other stakeholders. SSC is signed up to full adherence to all requirements of the Code of Good Practice for Scottish Finfish Aquaculture. The site will be operated in accordance with the principles of Integrated Sea Lice Management. A Farm Management Statement (FMS) has been prepared for the existing site, and this will be updated to take into account the changes associated with the proposed site. This will be finalised after fish are stocked onto the site (Appendix G).

### 1.2.4 *Protected Geographical Indication (PGI)*

Protected Geographical Indication (PGI) is an EU based scheme aimed at promoting and protecting the names of quality regional agricultural products and foodstuffs. The PGI logo is a quality mark that enables consumers to easily identify quality products, allowing them to verify their authenticity in terms of regional origin or traditional production methods.

### 1.2.5 *Label Rouge*

Label Rouge 33/90 is a highly esteemed quality assurance mark officially endorsed by the French Ministry of Agriculture. It aims to promote superior quality food or farmed product, particularly with regard to taste. To obtain this recognition, product must meet very stringent standards by adhering to a range of criteria through the production chain, including farming techniques, feed, processing and distribution.

### 1.2.6 *British Retail Consortium (BRC)*

The BRC Global Standard for Food Safety is a leading national standard for the retail industry covering food safety and supply chain management. It provides the framework for producers to manage and control product safety, integrity, legality and quality.

### 1.2.7 *BSI ISO14001*

ISO14001 is an internationally recognised standard for Environmental Management. It sets out the criteria for an Environmental Management System (EMS) and the framework that businesses can follow to setup an effective EMS. ISO14001 provides assurance that the environmental impact of a business is being continually measured, monitored and improved. SSC has successfully transitioned to the 14001:2015 standard.

### *1.2.8 Technical Standard for Scottish Finfish Aquaculture*

SSC is also working towards full compliance with the Technical Standard for Scottish Finfish Aquaculture, which was developed by the Ministerial Group for Sustainable Aquaculture's Scottish Technical Standard Steering Group. The Scottish Technical Standard will be implemented by a regulation under the Aquaculture & Fisheries (Scotland) Act 2013, and compliance with the standard is required by 2020.

## 2 DESCRIPTION OF THE DEVELOPMENT

### 2.1 Development Overview

The Existing Site is located in the Sound of Rothesay, to the south of Loch Striven, in Argyll and Bute. Loch Striven is south facing, and extends approximately 13 km from Ardtaraig in the north before opening out at Toward Point to the south, merging with waters from the eastern branch of the Kyles of Bute, flowing through the Sound of Rothesay and into the Firth of Clyde. Approximately 14 km north of the Existing Site, the freshwater loch, Loch Tarsan, flows into Loch Striven via the Glen Tarsan Burn. Loch Striven has a bathymetry typical of a narrow sea loch, with depths extending to more than 100 m in the centre of the loch and shallowing significantly at the loch shore. This bathymetric profile extends southwards out of the loch, into the Sound of Rothesay. The depth at the Existing Site averages between 30 m and 40 m.

There have been marine aquaculture operations at the Existing Site location for over 34 years. SSC operates two other sites in the surrounding area; Strone (approximately 3.5 km to the north-east) and Sgian Dubh (approximately 5.5 km to the north). In the wider area, SSC operates sites at Lamlash (approximately 40 km to the south, on the east coast of the Isle of Arran) and in Loch Fyne.

The Replacement Site will extend approximately 365 m south of the Existing Site. There are a small number of isolated properties in the area north of the Existing Site, and also residential areas on the north-eastern coast of Bute, approximately 1.5 km to 3 km to the south-west and south of the site (see Figures 1 to 9, Appendix A).

### 2.2 Existing Site Infrastructure

#### 2.2.1 Pens and Mooring Grid

The Existing Site comprises 8 x 100 m circumference (15.9 m radius) pens. The pens are held within a 10 cell, 60 m x 60 m mooring grid and are arranged into two groups, both in a 2 x 2 formation. The mooring grid comprises a rope and chain matrix, to which the pens are attached, and a series of anchors laid around the mooring grid on the seabed.

#### 2.2.2 Feed System

The existing feed system at the site is currently operated from a shore-based system. This system comprises a central feed control computer, 2 x 4 tonne feed silos, feed blowers and cameras for viewing and assessing feeding behaviour. Feed is delivered to the pens via individual pipes. This system is located on the quayside adjacent to the Existing Site.

#### 2.2.3 Pen Nets

The pen nets currently installed on the Existing Site are 10 m deep, and are fitted with Seal Blinds (additional net panelling at the base of the net).

### 2.3 Proposed Development Infrastructure

#### 2.3.1 Pens

The Replacement would involve the removal of all 8 x 100 m circumference pens currently installed at the Existing Site and the replacement of them with 14 x 120 m circumference pens. The replacement pens will be positioned approximately 365 m south of the Existing Site (see Figure 2, Appendix A). The Replacement Site would comprise a 16 cell, 75 m x 75 m mooring grid layout. The pens would be held in two groups, a group of eight pens in a 4x2 formation to the north and a group of six pens in a 3x2

formation to the south, with a grid space separating the groups. The overall pen surface area of the site would increase by 0.9639 ha, from 0.6354 ha to 1.6045 ha.

Sinker tubes will be used at the Replacement Site. These are rigid, circular structures, manufactured of high density plastic and filled with chain or steel wire, which are attached to the pen structure and held level with the base of the nets, beneath the surface. The pen nets attach to the sinker tubes at regularly spaced fixing points, this ensures nets are highly tensioned and pen volume and structure is maintained.

### 2.3.2 *Feed system*

The replacement pens would be linked to the shore-based feed system associated with the Existing Site via surface feed pipes. This is in line with existing operations, and there is no change currently proposed to the existing feed system.

### 2.3.3 *Pen Nets*

The proposed net depth of the Replacement Site will be 10 m. Nets will be manufactured by Knox and will be specifically designed to suit site conditions and husbandry requirements. Nets are subject to a regular strength testing and maintenance program (this generally takes place during the fallow period) and are generally replaced after six years, dependant on strength test results. Nets are fully traceable and a database of net location and service history is hosted by the manufacturer.

Biofouling, where organisms such as algae attach to underwater structures, can occur on pen nets and associated structures. SSC divers regularly inspect each net which, on average, is cleaned every ten days using mechanical net cleaners, Remotely Operated Net Cleaners (RONCs) and Flying Net Cleaners (FNC8s) which use mechanical arms and concentrated jets of water to dislodge weed and other organisms. An example of the type of pen net to be used is provided in Appendix B.

### 2.3.4 *Bird Nets*

Top nets, tensioned 2" fine-meshed nets in conjunction with bird net supports, will be installed in accordance with RSPB recommendations, to reduce predation and the risk of bird entanglement. These would be positioned over the top of each pen and supported by 16 x 5 m high support poles. Poles would be light grey. The nets would be highly tensioned in order to deter predation from diving birds and small mesh to minimise risk of entanglement. Top nets will be inspected and re-tensioned on a daily basis and maintenance will be conducted as required, minimising the potential risk of accidental entanglement to birds.

Maintenance of effective husbandry practices will also help to reduce the number of birds attracted to the Replacement Site, thus further reducing the risk of interaction and entanglement. An example of the type of bird net to be used is provided in Appendix B.

These measures are currently in use at the Existing Site and have successfully prevented both bird attack and bird entanglement.

### 2.3.5 *Moorings*

The Replacement Pens will be secured within a rope and chain grid matrix. Moorings will be specifically designed to meet the meteorological, hydrological and topographical conditions predicted at the site. The moorings system will be checked as part of the daily containment checks on site and a full inspection of component parts is also undertaken by trained staff at the end of every production cycle. Mooring checks methodologies are outlined in a Standard Operating Procedure for the site and the program for checks is outlined in the Escapes Contingency Plan for the site (provided as Annex 2 of Appendix D).

The wider area of the Replacement Site including moorings will be 645,876 m<sup>2</sup>. The moorings layout is shown in Appendix B.

### 2.3.6 Boat Access

Access to the Replacement Site will be from the existing SSC Ardyne shore base. The Replacement Site will be serviced by small Polarcirkel or other rigid-hulled inflatable (RIB) type boats for staff access and routine operations, and workboats for heavier operations.

Daily journeys to site will involve one or two return journeys by Polarcirkel or RIB, and one return journey by workboat, if this is required for specific site operations.

### 2.3.7 Pen Lighting

As part of the production cycle it may be necessary during periods of reduced daylight hours to use underwater lighting for the pens. Typically, underwater lights at farm sites are used during the first winter of the marine production cycle but may also be used out with these times.

It is proposed that three 1000 W lights will be used per pen, and the equipment will be the same that is used at the Existing Site. The lights will be installed at a depth of 6 m, will be downward facing and will not be directed 'off-site'. The potential effect from these lights will be a slight underwater illumination, seen as a green glow, and has minimal visibility from the surface. Surface lighting will only be used in accordance with Northern Lighthouse Board (NLB) recommendations and as specified on the Marine Mooring and Navigation Licence.

An example of the type of lighting to be installed as part of the Replacement Site is shown in Appendix B.

### 2.3.8 Navigational lighting

Navigational lighting requirements for the Replacement Site will be as agreed with the NLB.

## 2.4 Husbandry

### 2.4.1 Production cycle

It is planned that the Replacement Site will operate for 22 months out of every 24 months, ensuring that a two-month fallow period takes place prior to the introduction of the next input of smolts. An example production cycle for the maximum biomass at the Replacement Site is detailed in the production prediction spreadsheet (Appendix C), which provides information on the proposed time of stocking, input numbers, expected growth, estimated mortality and harvest numbers.

An application has been made by SSC to vary the SEPA CAR Licence (reference CAR/L/103268) for the Existing Site to include the Replacement Pens, this application is currently being determined however SSC have received a draft licence from SEPA allowing a maximum biomass of 2070 tonnes.

Over the fallow period, essential maintenance and any repairs will be carried out at the site to prepare for the introduction of the next cycle of fish. Following the end of each cycle, all the nets will be removed from the pens and sent to the manufacturer for testing, cleaning, disinfection, inspection, repair and antifouling. Following inspection and repairs as necessary, nets that achieve specific quality standards will be cleaned and disinfected before being returned to the site. The mooring legs and pen mooring grid components will be inspected and any necessary maintenance, repair or replacement work will be carried out by competent personnel.

#### 2.4.2 *Stocking*

At the start of the production cycle, a well boat will be used to stock the Replacement Site with smolts. Stocking usually takes place over a period of approximately one month, and it is estimated that approximately six trips will be required to stock the Replacement Site.

#### 2.4.3 *Food and Feeding*

The Replacement Site will be routinely serviced from the existing SSC shore base at Ardyne, where staff and work boats will depart to site. Food and feeding equipment for the normal operation of the Replacement Site will be stored in the shore-based feed system.

Food deliveries will be carried out predominantly by road, in line with existing operations, and deliveries will continue to be kept to a minimum.

#### 2.4.4 *Staff Access*

Staff access to the Replacement Site will be by vehicle to the Ardyne shore base followed by boat journey. It is anticipated that the staff vehicle usage will be 1-2 return journeys each day between normal working hours (0800 – 1700), in line with existing operations serviced from the Ardyne shorebase. It is normal practice for staff to share transport where possible.

#### 2.4.5 *Grading*

Grading occurs at all SSC sites at key points in the production cycle, to separate out different sizes of fish. This is to ensure a smooth and even growth profile across the entire stock production, and reduce the risk of aggression developing within the stocked population. Standard grading operation procedures and associated risk assessments are currently undertaken at all SSC sites and these will also be used at the Replacement Site. Fish are first crowded within the pen net, before being pumped onto a well boat, where they pass over a de-watering table, then a grading table where size selectors enable different sizes of fish to be separated out. The different size groups are then returned to separate pens, being counted on exit.

Fish are graded approximately 2-3 times during the production cycle. Fish health is checked prior to grading operations by SSC Biology staff. Whilst fish are graded they will be continuously monitored to ensure they are not experiencing unacceptable levels of stress or welfare issues. The manager will determine if mitigation measures need to be taken to maintain good welfare during grading, such as increasing the volume of space available to the fish.

#### 2.4.6 *Harvesting*

Fish that are required for harvest are first crowded within the pen net and then pumped into a purpose designed well boat. The harvest vessel will be required to visit the site an additional thirteen times during the production cycle. Harvesting will usually take place over six months in the second year of production. During these harvesting months the harvest boat activity across will be around five trips a month, and no activity at all other times. Boat activities during harvesting will have a low impact on the maritime traffic in the vicinity of the Replacement Site and are scoped out of further assessment.

To maintain a high level of welfare, the maximum length of time that fish can be crowded in the net for is limited. Once on board the well boat, fish are transported live to a harvest station (SSC harvest stations are located at Arnish (north region) and Ardyne (south region)). Conditions within the wells are monitored by camera and oxygen levels and temperature are controlled. During transport, fish are chilled in order to reduce stress levels on arrival at the harvest station. At the harvest station, fish are pumped ashore and killed by unrecoverable stunning and then bleeding of the gills. Carcasses are then

transported onto either the Cairndow (Argyll) processing plant or the Marybank (Outer Hebrides) processing plant for primary processing and filleting.

#### 2.4.7 *Cleaner Fish*

The salmon louse is the most common parasite on farmed salmon, and is one of the challenges facing the aquaculture industry. Cleaner fish represent an effective biological method for the removal of lice. This means that de-lousing can potentially be carried out without the use of medications, reducing the use of chemicals and reducing the likelihood of resistance to de-lousing medications.

SSC intends to deploy cleaner fish as a biological control for sea lice at the Replacement Site. Across SSC sites 90% of the cleaner fish are from farmed origin. The SSC Biology department will choose to deploy farmed lumpsuckers, wild caught wrasse or farmed wrasse based on criteria such as availability, effectiveness and sustainability. A suitable stocking density will be chosen, as deemed appropriate by the SSC Biology department. Cleaner fish will be stocked with suitable hides (artificial habitat) and provided with feed. Trained staff will monitor health and conduct routine checks to ensure these fish are suitably cared for. Additional cleaner fish may be stocked onto site as required to assist with lice control.

Farmed lumpsuckers and wrasse will be appropriately health screened before inclusion in pens with salmon, whilst wild wrasse are to be procured from professional fishermen, contracted to SSC, who are regularly audited to ensure they adhere to all the relevant regulatory standards.

In order to safeguard areas in which wild wrasse are sourced, SSC has signed up to the Scottish Salmon Producers Organisation's "Voluntary control measures for the live capture of Scottish wild wrasse for salmon farmer's" standard.

Further details on the use of cleaner fish as a lice control mechanism are provided within the Environmental Management Plan (EMP) included in Appendix D.

#### 2.4.8 *Veterinary Treatment and Chemicals*

SSC has a dedicated team of biologists who are responsible for regular health checks, and monitoring and managing biosecurity issues throughout the company's operations. The company employs a dedicated veterinarian and certain veterinary services are also contracted out to the Fish Vet Group who have clinical responsibilities for fish stocks. The SSC focus is on the prevention of disease through integrated health management, effective monitoring and biosecurity controls.

Final decisions regarding the requirement to treat and appropriate type of treatment are made by the company veterinarian.

As detailed above, an application has been made to vary the SEPA CAR Licence for the Existing Site (reference CAR/L/1003268) to account for the replacement equipment and increase in biomass, which will determine the amounts of medication that may be administered. The application is currently being determined and a draft licence has been received confirming SEPA intend to approve the application. A Sea Lice Efficacy Statement is provided as part of Appendix E (Sea Lice Management).

#### 2.4.9 *Non-Chemical Treatment*

A Hydrolicer treatment system will be available for use at the Replacement Site should it be required.

Generally, treatments conducted by the Hydrolicer have achieved at least 85% clearance of all stages of lice. Lice bags are used to capture all removed lice from the system, so lice are not returned to the water. The combination of both cleaner fish and non-chemical treatments has been shown to reduce post treatment resettlement, thus reducing the need for chemical treatments. Further details are provided within the EMP included in Appendix D.

#### 2.4.10 Mortalities

Mortalities will be removed from the pens on a regular basis using a Lift-Up system, or similar manual removal system, this is in line with current SSC practices and operations at the Existing Site. Mortalities collect at the bottom of the pen net, in the centre, and are pumped up a collection pipe on a regular basis. Any dead fish removed are collected at pen side, then carefully transported ashore and transferred to a sealed skip at the shore base. In addition to this, there will be a regular diver inspection of the pens, during which mortalities that have not collected in the basket are noted and the site manager informed. Mortalities will then be removed and the removal system checked. This skip will be emptied on demand by specialist contractor. In the event of a mass mortality event, extra skip capacity can be made available within an appropriate timescale as outlined in the Fish Mortality Plan included as Appendix F.

Details of mortalities (e.g. suspected cause and number) are recorded by site staff and are reviewed regularly by biology staff throughout the production cycle. This, together with regular health monitoring, assists with early detection of particular health challenges.

#### 2.4.11 Farm Management

The Replacement Site will be managed in accordance with the principles of Integrated Pest Management and the National Treatment Strategy, being stocked synchronously with the same year class of fish and treated synchronously with the other SSC sites in Loch Striven. These sites, and the Replacement Site, are within Code of Good Practice (CoGP) Management Area M-45 and Marine Scotland (MS) Disease Management Area (DMA) 19b. There are no other operators currently farming salmon in the marine environment in these areas. In line with the Scottish Salmon Producers Organisation (SSPO) CoGP, there is an FMS in place for the Existing Site, and the other SSC sites in the Management Area. The FMS for the Existing Site has been provided as Appendix G. The FMS will be updated to account for the Replacement Site and finalised after fish are stocked on site, once the health status of fish stocked has been confirmed.

The husbandry practices of salmon farmers are strictly regulated by SEPA, through the Water Environment (Controlled Activities) (Scotland) Regulations (2011) as amended, and Marine Scotland, through the Aquaculture and Fisheries (Scotland) Act 2013.

### 2.5 Reporting Requirements

SEPA requires data returns to be submitted for each site which include details of biomass stocked, number and weight of mortalities, feed volume administered and quantities of treatment medicines used. These records are broken down month by month and provided quarterly, they must also be available for inspection by SEPA at any reasonable hour. Records must be maintained for a period of five years as per conditions of the SEPA licence. SEPA require prior notification of any planned treatment (bath or in-feed) at site. Further to this, once a year SEPA also receives records of the use of non-restricted chemicals e.g. anti-foulants and cleaning chemicals.

Marine Scotland Licensing Operations Team (MS-LOT) requires prior notification of any planned treatment via well boat. The permitted medicines for well boat treatments are based on what has been permitted on the SEPA CAR consent. Marine Scotland also requires submission of records of well boat treatments which include details of the vessel used, location and quantities of permitted medicines used, these are submitted quarterly.

MS-LOT also licenses the placement of marine equipment under the Marine (Scotland) Act 2010 (Part 4), which includes all fish farm moorings.

It is also a requirement of salmon farmers to report to Marine Scotland Fish Health Inspectorate any unintentional releases of fish from marine or freshwater fish farms.

Internal and external audits of fish husbandry practices are undertaken as part of the internal quality management systems, external 3rd party accreditation and for customer requirements.

Records are audited and reviewed regularly in line with internal procedures with an aim to assess the overall performance of the company. Each individual site is audited annually by an independent 3<sup>rd</sup> party accreditation body.

### 3 CONSULTATION ANALYSIS

#### 3.1 Consultation

Stakeholder consultation has been undertaken throughout the development and planning process. SSC has sought to obtain stakeholders support at key stages throughout the development and planning process, and to ensure stakeholders have an opportunity to comment.

Although consultation throughout the development phase has been continuous it can be split up into the following three key phases:

- Phase 1: Pre-application consultation including formal screening and scoping;
- Phase 2: Ongoing consultation; and
- Phase 3: Planning assessment results and conclusions.

Consultation approaches have varied depending on the matters for discussion and stakeholder requirements. As such, several techniques have been adopted, including (but not limited to):

- Meetings and conference calls; and
- Correspondence (emails & letters).

The pre-application phase included consultation and agreement on the specification of surveys and studies as well as consultation on certain technical aspects.

Through discussion with stakeholders, SSC's proposed approach to the Replacement was introduced. The meetings also provided an opportunity to establish key concerns and issues that have been dealt with as part of this application submission.

Table 3.1 details the statutory stakeholders that the SSC Site Development Team engaged with.

Table 3.1 Individual statutory stakeholder scoping summary (Formal Scoping opinion issued by ABC on 5<sup>th</sup> July)

Stakeholder Issue	Stakeholders	Date(s)
Benthic Ecology	Scottish Natural Heritage (SNH) Marine Scotland Science (MSS) Scottish Environment Protection Agency (SEPA)	20 <sup>th</sup> March 2019 (Scoping response) 27 <sup>th</sup> March 2019 (Scoping response) 19 <sup>th</sup> March 2019 (Scoping response)
Wild Salmonids	MSS SNH DSFB	27 <sup>th</sup> March 2019 (Scoping response) 20 <sup>th</sup> March 2019 (Scoping response) 24 <sup>th</sup> June 2019 (Scoping response)
Landscape and Visual Impacts	SNH Argyll and Bute Council	24 <sup>th</sup> July 2019 (Email) 13 <sup>th</sup> June 2019 (Scoping response)
Species or Habitats of Conservation Importance, including Sensitive Sites	SNH	20 <sup>th</sup> March 2019 (Scoping response)

A summary of communication separate to that contained within the pre-application process is provided in Table 3.2 below.

Table 3.2 Summary of non-statutory pre-application discussions

Stakeholder	Subject discussed	Date (s)
West Coast Regional Inshore Fisheries Group (WCRIFG)	Summary of proposed Replacement	09 <sup>th</sup> May 2019 (Email)
Clyde Fishermen's Association (MFA)	Location of proposed Replacement in relation to commercial fishing activity in surrounding waters (Summary of discussion in Section 4.14)	07 <sup>th</sup> November 2018 19 <sup>th</sup> June 2019 (Meeting)
Argyll Fisheries Trust (AFT)	Summary of proposed Replacement and potential for interaction with wild salmonids (Summary of discussion in Section 4.14)	10 <sup>th</sup> July 2019 (Meeting)
Argyll District Salmon Fisheries Board (ADSFB)	Summary of proposed Replacement and potential for interaction with wild salmonids (Summary of discussion in Section 4.14)	10 <sup>th</sup> July 2019 (Meeting)
Northern Lighthouse Board (NLB)	Location and layout of proposed Replacement, in relation to safe navigation in the immediate area (including recreational boats)	22 <sup>nd</sup> May 2019 (Email) 29 <sup>th</sup> May 2019 (Email)
Royal Yachting Association (RYA)	Location and layout of proposed Replacement, in relation to Clyde Cruising Club comments on navigation around the site.	8 <sup>th</sup> May 2019 (Email)

### 3.2 Gap Analysis

This section of the report summarises the scoping responses to date and highlights the issues raised. The tables below cover the following areas;

- Table 3.3: Non-statutory Consultees;
- Table 3.4: Benthic Impacts;
- Table 3.5: Water Column Impacts;
- Table 3.6: Interactions with Predators;
- Table 3.7: Interactions with Wild Salmonids;
- Table 3.8: Impacts upon Species or Habitats of Conservation Importance;
- Table 3.9: Navigation, Anchorage, Commercial Fisheries etc;
- Table 3.10: Landscape and Visual Effects;
- Table 3.11: Noise;
- Table 3.12: Marine Cultural Heritage;
- Table 3.13: Waste Management;
- Table 3.14: Socio-economic, Access and Recreation;
- Table 3.15: Traffic and Transport; and
- Table 3.16: Any Other Issues.

The GAP analysis illustrates where the stakeholder comments have been dealt with and closed out or where the issues could be dealt with via existing legislation or codes of good practice.

Table 3.3 Non-statutory Consultee Advice

Stakeholder	Stage	Response Date	Summary of main comments/issues	How comment has been addressed/SSC response	Cross reference
<b>Royal Yachting Association</b>	Pre-application	29 <sup>th</sup> May 2019	It might be worthwhile considering installing a buoy at the south west end of the cages to mark the safe passage between the fish farm and the Ardyne Buoy. NLB will be able to advise if this is acceptable.	SSC has discussed this matter with NLB. NLB has advised against installing a buoy at the south-west of the pens. All navigational marking and lighting at the Replacement Site will be in accordance with NLB recommendations.	N/A

Table 3.4 Benthic Impacts - Consultee Scoping Summary

Consultee	Stage	Identified Actions	Project Response	Cross Reference
<b>Scottish Environment Protection Agency (SEPA)</b>	Fish Farm Scoping Opinion	The applicant submitted two baseline surveys (baseline and visual) carried out in 2018 due to the relocation of the site. The baseline visual survey indicated a seabed of burrowed mud (a PMF) with component feature <i>Nephrops norvegicus</i> found frequently across all transects.  The benthic surveys for the existing site have met SEPA's benthic faunal criteria since 2012.	The scope of the baseline surveys were agreed with SEPA prior to being undertaken. Some evidence of the Burrowed Mud PMF and component biotopes was identified, however any risk to the national status of this feature as a result of the Replacement Site is considered to be minimal.	Section 4.6, Appendix H (Benthic Survey Report) and Appendix I (Benthic ROV Report)
<b>Scottish Natural Heritage (SNH)</b>	Fish Farm Scoping Opinion	The cages are to be located over previously unused ground i.e. not within the old AZE boundary. The area of new sea bed that is likely to be impacted by this proposal will exceed the thresholds identified in Annex F of the SEPA Fish Farm Manual (AZE footprint extends to approximately 11.5 ha). An appropriate visual survey in accordance with SEPA's Fish Farm Manual, Annex F, is therefore required.	A visual survey, carried out in accordance with SEPA's Fish Farm Manual (Annex F) has been undertaken for the Replacement Site. A copy of the footage, and a summary report, have been submitted as supporting information for this planning application.	Appendix I (Benthic ROV Report)

Consultee	Stage	Identified Actions	Project Response	Cross Reference
<b>Marine Scotland Science (MSS)</b>	Fish Farm Scoping Opinion	The submitted modelling report shows that a benthic pass was obtained for the proposed biomass and cage arrangement, however SEPA as the regulator will make the final decision with regard to biomass. Providing there are no changes to the proposal, no additional information is required, however the report included (at Scoping) should be submitted with any future planning application.	There have been no changes to the proposal presented in the Scoping report. The modelling report has been submitted as supporting information to the final planning application, as requested.	Appendix J (Modelling Report)
<b>Argyll and Bute Council Marine and Coastal Development Unit (ABC MCDU)</b>	Fish Farming Scoping Opinion	Regardless of whether an Environmental Statement is required, the applicant should submit the full modelling (benthic, pollution, chemical and hydrographic) reports in support of any planning application.	Hydrographic, and depositional and bath modelling reports have been submitted with this planning application.	Appendix J (Modelling Report) and Appendix K (Hydrographic Report).

Table 3.5 Water Column Impacts - Consultee Scoping Summary

Consultee	Stage	Identified Actions	Project Response	Cross Reference
<b>Scottish Environment Protection Agency (SEPA)</b>	Fish Farm Scoping Opinion	<p>The fish farm is situated in the receiving waters of Loch Striven, which is a MS Locational Guideline category 3 water body, with a nutrient enhancement index of 2 and a benthic impact index of 2.</p> <p>The applicant has submitted an Equilibrium Concentration Enhancement (ECE) estimate of the input of dissolved inorganic nitrogen from the fish farm (including the proposed increase in biomass), as well as cumulative impacts from the other fish farms with active CAR licences in the water body.</p>	There are no changes proposed to the details submitted with the Scoping Report. It is predicted that the proposed biomass increase associated with the Replacement will not result in unacceptable impacts to the water column.	Section 4.16 and Appendix L (Nutrient Calculations)

Consultee	Stage	Identified Actions	Project Response	Cross Reference
		The ECE was calculated as 2.03 ug/l, which when added to the UKTAG background level of 168 ug/l, is well below the UKTAG threshold (50% above background) of 252 ug/l. We are therefore satisfied that nutrient inputs from the current biomass (including that proposed for this site) will be unlikely to result in a downgrade to the status of the water body under the Water Framework Directive.		
<b>Argyll and Bute Council Marine Coastal Development Unit (ABC MCDU)</b>	Fish Farm Scoping Opinion	The applicant is requested to provide a full ECE calculation with the final planning application	A full ECE calculation has been undertaken and provided with this application.	Section 4.16 and Appendix L (Nutrient Calculations)
<b>Marine Scotland Science (MSS)</b>	Fish Farm Scoping Opinion	The nutrient calculation submitted indicates that the proposed biomass should not result in unacceptable impacts to the water column, either at the site or cumulatively within the wider water body. Providing there are no changes to the proposal or to sites within the area, no additional information is required, however the assessment should be submitted with any future planning application.	There are no changes to the proposal presented in the Scoping report. A full ECE calculation has been undertaken and provided with this application.	Section 4.16 and Appendix L (Nutrient Calculations)

Table 3.6 Interaction with Predators - Consultee scoping summary

Consultee	Stage	Identified Actions	Project Response	Cross Reference
<b>Scottish Natural Heritage (SNH)</b>	Fish Farm Scoping Opinion	<p>Provided the same predator control strategy (as the existing site) is followed at the new site then we would not anticipate predation to be likely to result in any significant environmental effects. However, a predator control strategy detailing the measures that will be taken should be provided in support of the final application.</p> <p>In addition, we would suggest that best practice measures should be adopted to ensure that any impacts on non-target species as a result of the use of ADDs will be minimised. We would recommend the applicant adheres to an ADD deployment plan which sets out appropriate measures to be followed to ensure any potential impacts will be minimised.</p>	It is proposed to employ the same predator control strategy that is in place at the Existing Site at the Replacement Site. This strategy has proved to be highly effective at the Existing Site. A site specific Predator Control Plan and ADD Deployment and Usage Plan have been prepared for the Replacement Site. These have been submitted as supporting information to this application.	Section 4.3 , Section 4.4 , Appendix D (EMP) and Appendix N (ADD Deployment and Usage Plan)
<b>Argyll and Bute Council Marine and Coastal Development Unit (ABC MCDU)</b>	Fish Farm Scoping Opinion	<p>The applicant should provide specific details of proposed use of ADDs as specified by SNH, as part of any planning application. If the use of ADDs is proposed, further information on the proposed use of the device and the likely interaction with seals/ cetaceans should be provided.</p> <p>Subject to advice from SNH, it is envisaged that the Ardyne farm is unlikely to significantly interact with predators.</p> <p>A final Predator Control Plan should also be submitted with the final planning application.</p>	A site specific Predator Control Plan and ADD Deployment and Usage Plan have been prepared for the Replacement Site. The ADD Deployment and Usage Plan provides further information on the type of ADDs to be used, the decision making process governing their implementation, and how potential interactions with seals/ cetaceans will be monitored and managed. These documents have been submitted as supporting information to this application.	Appendix D (EMP) and Appendix N (ADD Deployment and Usage Plan)

Table 3.7 Interaction with Wild Salmonids - Consultee scoping summary

Consultee	Stage	Identified Actions	Project Response	Cross Reference
<b>Argyll and Bute Council Marine Coastal Development Unit (ABC MCDU)</b>	Fish Farm Scoping Opinion	<p>While the applicant has identified a number of mitigation measures to limit potential impacts on wild salmonids from the operation of the farm, additional information will be required in order to fully assess the likely risk to wild salmonids from the proposed expansion. Mitigation should include:</p> <ul style="list-style-type: none"> <li>• Final EMP;</li> <li>• Farm Management Statement;</li> <li>• Final Escapes Contingency Plan;</li> <li>• Final site specific sea lice action/ management plan;</li> <li>• Updated efficacy statement in terms of availability of sea lice chemical treatments;</li> <li>• Operational details for other sea lice management measures including cleaner fish and mechanical removal;</li> <li>• Evidence of effectiveness of more recent sea lice management measures (cleaner fish and mechanical removal), and</li> <li>• A sea lice monitoring protocol for the Ardyne site.</li> </ul>	<p>An Environmental Management Plan (EMP) has been prepared for the Replacement Site, and provided as supporting information to this planning application. The EMP contains information on all sea lice monitoring and management measures to be employed at the Replacement Site.</p> <p>The FMS for the Existing Site has been provided as supporting information, this will be updated and finalized once the health status of the stocked fish can be confirmed.</p> <p>An Efficacy Statement has been provided, based on the medicine amounts currently being determined by SEPA through the CAR application process.</p> <p>Attestations and specifications for additional equipment have been provided.</p> <p>Details on lice levels during the most recent production cycle at the Existing Site have been provided as part of this application.</p>	Appendix D (EMP), Appendix E (Sea Lice Management) and Appendix G (FMS).
<b>Argyll and Bute Council Marine Coastal Development Unit (ABC MCDU)</b>	Fish Farm Scoping Opinion	<p>While it is not possible to accurately predict the future lice levels on a farm, the performance of existing farms within the area could act as a guide for future performance. It is suggested that given the scale of expansion, consideration should be given to the provision of site specific information in relation to sea lice management, in order to determine how well the existing site is performing.</p>	<p>Details on lice levels during the most recent production cycle at the Existing Site have been provided as part of this application.</p>	Section 4.8

Consultee	Stage	Identified Actions	Project Response	Cross Reference
<b>Marine Scotland Science (MSS)</b>	Fish Farm Scoping Opinion	<p>Some evidence, provided by the applicant, of the current ability to control sea lice numbers on the site may be useful in making an assessment of risk associated with the modification of the site. The evidence could take the form of an attestation from the applicant indicating the existing sites compliance with CoGP, their own targets and their success in treatment of lice on site. No actual figures are necessary but any failure to control sea lice on site should be described. The attestation should cover information for the current and previous cycle. The following is a suggested format an attestation could take:</p> <ul style="list-style-type: none"> <li>• Dates of information provided;</li> <li>• Are there any breaks in weekly count Y/N;</li> <li>• If so, is a reasonable explanation given (e.g. severe weather conditions) Y/N;</li> <li>• Are bioassays of lice carried out at least yearly for the treatments utilized? Y/N;</li> <li>• Have any strategic treatments been carried out in the management area (even if levels are below the CoGP suggested criteria for treatment) Y/N;</li> <li>• Have you adopted the COGP suggested criteria for treatment? Y/N;</li> <li>• If not, what criteria for treatment of lice do you work to;</li> <li>• Is treatment carried out when the criteria for treatment for lice is reached? Y/N;</li> <li>• Are alternating methods of treatment utilized? Y/N;</li> <li>• Are treatments successful i.e. drop to below criteria for treatment levels? Y/N;</li> </ul>	An attestation, based on the last 3 production cycles at the Existing Site, has been provided with this planning application.	Appendix E (Sea Lice Management)

Consultee	Stage	Identified Actions	Project Response	Cross Reference
		<ul style="list-style-type: none"> <li>• If no, are unsuccessful treatments a regular occurrence? Y/N;</li> <li>• Are treatments successful i.e. drop to a stated target level? Y/N; and</li> <li>• If no, is this a regular occurrence? Y/N.</li> </ul>		
<b>MSS</b>	Fish Farm Scoping Opinion	The submitted modelling indicates that SLICE would be available in sufficient quantities to treat the maximum biomass up to 5 times, however it should be noted that SEPA have recently updated their position statement with regard to emamectin benzoate. The applicant has acknowledged in the EMP that it is expected that there will be a reduction in the consented value of EmBz. Consideration should be given to any effect the position statement may have on the modelled quantities and the quantity likely to be available for use on the site without breaching relevant EQS. Information on the maximum biomass that can be treated on site after consideration of the position statement should be clearly presented with any future planning application.	SEPA's interim position notes a preference for a maximum of 2 SLICE treatment at maximum biomass. This will not impact SSC's sea lice management plan, as SLICE is used in the early part of the cycle when the fish are small and below maximum biomass levels. If SEPA should adjust their position and reduce consent for Emamectin benzoate further, then SSC will utilise the tools at its disposal to ensure sea lice control. This might involve stocking cleanerfish earlier than planned, administration of bath treatments, or mechanical intervention to keep lice levels low.	Section 4.7 and Appendix E (Sea Lice Management)
<b>MSS</b>	Fish Farm Scoping Opinion	Confirmation should be provided regarding the number of cages that can be treated with Azamethiphos within a 24 hour period.	This has been provided in the Sea Lice Efficacy Statement.	Appendix E (Sea Lice Management)
<b>Scottish Natural Heritage (SNH)</b>	Fish Farm Scoping Opinion	The final application/ EIA report should provide an assessment of the risk posed to wild salmonids, including details of any mitigation measures to reduce the risk of significant impacts occurring. We have limited access to any detailed data on local wild salmonid populations. On this basis, we are happy to defer to the DSFB and/ or Marine Scotland Science to provide further advice to the Planning Authority on the local significance of any wild salmonid populations likely to be impacted by this proposal.	An assessment of potential interactions with wild salmonids has been provided. Furthermore, an EMP has been submitted with this application, which provides further detail on management measures and monitoring which will take place on the Replacement Site, to minimize potential impacts on wild salmonids.	Section 4.2 and Appendix D (EMP)

Consultee	Stage	Identified Actions	Project Response	Cross Reference
<b>Argyll District Salmon Fisheries Board (ADSFB)</b>	Fish Farm Scoping Opinion	<p>We strongly urge the Council to ensure that the applicant;</p> <ul style="list-style-type: none"> <li>- Provide a plan (and commitment) to monitor sea lice burdens of sea trout</li> <li>- Introduce a feedback mechanism that triggers on-farm management in response to lice burdens on sea trout</li> <li>- Inform and demonstrate to ADSFB and the council that the applicant is effectively controlling sea lice and escapes to the level where no impacts are found in wild fish populations.</li> </ul>	The EMP contains details of sea lice monitoring that will be undertaken at site. Furthermore, a Monitoring Strategy has been prepared which contains details of proposed 'off-site' monitoring to assess the effectiveness of lice intervention methods on site, and provide an adaptive management framework.	Appendix E (EMP)

Table 3.8 Impacts upon species or habitats of conservation importance, including Sensitive Sites - Consultee scoping summary

Consultee	Stage	Identified Actions	Project Response	Cross Reference
<b>Argyll and Bute Council Marine Coastal Development Unit (ABC MCDU)</b>	Fish Farm Scoping Opinion	<p>Given that the proposed expansion is for an existing site and that the cage group is being moved 365 m to the south, it is considered unlikely that the proposed expansion of the Ardyne farm will significantly impact the surrounding features of interest: Priority Marine Habitats (Burrowed Mud) and Priority Marine Features (PMFs) (Seapens and burrowing megafauna in circalittoral fine mud) subject to advice from SNH and SEPA.</p> <p>SNH should provide more detailed advice on whether the proposal has the potential to affect the surrounding qualifying habitat, and whether an Appropriate Assessment (AA) will be required.</p>	The potential interactions with sensitive species, in particular the PMF Burrowed Mud, have been assessed within the supporting information. It is considered that any risk posed to the Burrowed Mud habitat or component features will be minimal.	Section 4.6 and Appendix I (Benthic ROV Report)

Consultee	Stage	Identified Actions	Project Response	Cross Reference
<p><b>Scottish Natural Heritage (SNH)</b></p>	<p>Fish Farm Scoping Opinion</p>	<p>No designated sites are likely to be impacted by this proposal. Priority Marine Features (PMFs) may be present.</p> <p>The applicant has already carried out visual and benthic surveys for this proposal. The visual survey indicates that burrowed mud, which is a Priority Marine Feature (PMF) was present across much of the footprint of the proposed site. This proposal could therefore result in the damage/ loss of the PMF habitat burrowed mud habitat where it is present within the AZE footprint.</p> <p>PMFs are considered a sensitive species or habitat. On this basis it is possible that benthic impacts as a result of this proposal could result in significant environmental effects.</p> <p>However, the benthic survey report provided with the application suggests that the area of burrowed mud that is present is unlikely to be considered a high quality example of the PMF habitat. On account of the quality of the habitat that is present, the widespread nature of this PMF and its lower sensitivity to the pressures associated with aquaculture, we can conclude, based on the existing information that it is unlikely that this proposal will result in any significant impacts on the national status of this PMF habitat.</p>	<p>SSC agrees with this assessment. The benthic surveys undertaken indicate that, whilst Burrowed Mud is present, the area underneath the Replacement Site where there is the potential for interactions, is not a significant example of the feature. The feature is present within the footprint of the Existing Site.</p> <p>Where there is the potential for interaction between mooring placements and identified features, it may be possible to micro-site the moorings to avoid these features.</p>	<p>Section 4.6, Appendix H (Benthic Survey Report) and Appendix I (Benthic ROV Report)</p>

Table 3.9 Navigation, Anchorage, Commercial Fisheries, other non-recreational maritime uses (MOD) - Consultee scoping summary

Consultee	Stage	Identified Actions	Project Response	Cross Reference
<b>Argyll and Bute Council Marine Coastal Development Unit (ABC MCDU)</b>	Fish Farm Scoping Opinion	The overall moorings area (0.9639 ha), which might interact with fishing activity, is not considered significant. However, the applicant is still advised to consult with the Clyde Fishermen's Association and the West Coast Regional Inshore Fisheries Group in the first instance.	The overall increase in surface area is 0.9639 ha. As there is the potential for interaction with fishing activity, SSC has consulted with the Clyde Fishermen's Association and the West Coast Regional Inshore Fisheries Group. A baseline navigation assessment has been undertaken, which indicates a low level of use of the waters within the development area.	Section 4.19 and Appendix O (Baseline Navigation Assessment)
<b>ABC MCDU</b>	Fish Farm Scoping Opinion	Subject to advice from the Northern Lighthouse Board, no significant environmental effects are considered likely in relation to risk to navigation and anchorages.	SSC commits to marking the site in line with NLB recommendations.	N/A
<b>ABC MCDU</b>	Fish Farm Scoping Opinion	The applicant is requested to submit mooring and cage coordinates, including maps detailing pen group and feed barge. In addition, the applicant is requested to provide full details of underwater and navigation lighting within the final application.	Equipment specifications and attestations have been provided with the final application.	Appendix B (Equipment)

Table 3.10 Landscape and Visual Impacts - Consultee scoping summary

Consultee	Stage	Identified Actions	Project Response	Cross Reference
<b>Argyll and Bute Council Marine Coastal Development Unit (ABC MCDU)</b>	Fish Farm Scoping Opinion	The applicant has discussed the Seascape, Landscape and Visual Scoping Report (SLVSR) and Zone of Theoretical Visibility (ZTV) for the proposed Ardyne farm. These are summarized in their Screening and Scoping document. The applicant should submit the full SLVSR together with the final ZTV images and photomontages from key viewpoints, subject to advice from SNH and the Planning Authority in support of the final planning application. If further assessment is required on landscape effects, the applicant should take account of the SNH guidance on the siting and design of aquaculture development.	A full SLVA has been submitted with this application. Viewpoints have been agreed with ABC and SNH.	Section 4.16 and Appendix M (LVIA)

		Any development should include/ consider the following; <ul style="list-style-type: none"> <li>- Scaled diagrams and photomontages including cages, top nets, feedbarge and any other ancillary equipment (cage and top net height), and</li> <li>- The adjacent Area of Panoramic Quality.</li> </ul>		
<b>Scottish Natural Heritage (SNH)</b>	Fish Farm Scoping Opinion	The site is located outwith the Kyles of Bute National Scenic Area.  We recognise that the site is well established in the area and that although there will be an increase in cage size and number, the proposed re-alignment is in accordance with SNH's revised guidance on the siting and design of aquaculture developments. We are therefore satisfied that the development will not adversely affect the integrity of the NSA or result in significant visual intrusion from key viewpoints in the surrounding landscape.	An LVIA has been undertaken by a Chartered Landscape Architect. The LVIA and all visualisations contained within it have been produced in accordance with current SNH guidance.  This application refers to a relocation of the site, an increase in pen size and an increase in pen number. It is considered there will be no adverse landscape and visual effects, or adverse cumulative effects, arising as a result of the Replacement.	Appendix M (LVIA)

Table 3.11 Noise - Consultee scoping summary

Consultee	Stage	Identified Actions	Project Response	Cross Reference
<b>Argyll and Bute Council Marine Coastal Development Unit (ABC MCDU)</b>	Fish Farm Scoping Opinion	Based on information provided by the applicant, it is considered unlikely that the proposed expansion of this farm will result in increased levels of noise compared to the existing development.	SSC agrees with this assessment. The generator associated with the feed system will be housed in a sound-proofed enclosure, as per existing operations.	N/A

Table 3.12 Marine Cultural Heritage - Consultee scoping summary

Consultee	Stage	Identified Actions	Project Response	Cross Reference
<b>Historic Scotland</b>	Fish Farm Scoping Opinion	We consider that no heritage assets covered by our interests in the EIA and planning processes are likely to be significantly affected by the proposed development.	SSC agrees with this assessment. The Existing Site has been in operation for a number of years with no apparent adverse impacts on marine cultural heritage features in the area. Any impact of the replacement of equipment on marine cultural heritage features is expected to be minimal.	N/A

Table 3.13 Waste Management (non-fish) - Consultee scoping summary

Consultee	Stage	Identified Actions	Project Response	Cross Reference
No Scoping response received.				

Table 3.14 Socioeconomic, Access and Recreation - Consultee scoping summary

Consultee	Stage	Identified Actions	Project Response	Cross Reference
No specific requests for further information				

Table 3.15 Traffic and Transport - Consultee scoping summary

Consultee	Stage	Identified Actions	Project Response	Cross Reference
No Scoping response received.				

Table 3.16 Any other issue - Consultee scoping summary

Consultee	Stage	Identified Actions	Project Response	Cross Reference
MSS	Fish Farm Scoping Opinion	The modifications proposed will not alter the current disease management area for this site (19b). However, the applicant should be aware that there are several new sites proposed in the Firth of Clyde area, currently going through screening and scoping that should they be developed may extend the current scope of DMA 19b, and therefore be included within the same DMA.	There are no changes proposed to the current management practices employed by SSC within DMA 19b. The area will continue to be farmed on a single year class basis.	N/A
MSS	Fish Farm Scoping Opinion	Further information should be provided on the frequency of lift-up procedures and the method of disposal and route for end products of mortality waste.	This information has been provided in the Fish Mortality Plan, submitted with this application.	Appendix F (Fish Mortality Plan)
MSS	Fish Farm Scoping Opinion	Information should be provided to demonstrate that the proposed modification is not detrimental to sea lice management in the Farm Management Area (M-45) and that satisfactory measures for the prevention, control and reduction of parasites remain in place. Detailed information on strategies for the management of sea lice in the FMA have been provided in the Environmental Management Plan (EMP).  The applicant is currently the only operator in the FMA. Proposed sites nearby may influence the boundary of the FMA, therefore further information on stocking plans and risk assessments may be required depending on the status of these developments at the time the planning application for the proposed modification is submitted.	The EMP contains detailed information on the sea lice management measures to be undertaken at the Replacement Site. It also contains information on the monitoring strategies to be employed at site.  A proposed stocking plan has been submitted with the application.	Appendix C (Production Plan), Appendix D (EMP), Appendix E (Sea Lice Management) and Appendix G (FMS)
MSS	Fish Farm Scoping Opinion	Chemotherapeutant bath treatments will be administered in full enclosure tarpaulins or in a wellboat, which is deemed to be satisfactory as far as can be reasonably foreseen. Predicted treatment time of 2 days is 'independent of resource', therefore details of the time practically taken to treat the 14 cage site should be provided.	Information on bath treatment time has been provided with this application. Topical treatments will be administered via tarp or well-boat.	Section 4.13 and Appendix E (Sea Lice Management)

Consultee	Stage	Identified Actions	Project Response	Cross Reference
<b>MSS</b>	Fish Farm Scoping Opinion	The escapes contingency plan refers to references with specifications and attestations for net, cage and moorings equipment. This information should be submitted as site specific evidence that equipment is suitable for purpose on the site in question.	Equipment specifications and attestations have been provided with this application. Equipment specifications have been prepared taking into account the unique hydrological, meteorological and topographical conditions at site.	Appendix B (Equipment)
<b>Argyll and Bute Council Marine Coastal Development Unit (ABC MCDU)</b>	Fish Farm Scoping Opinion	The applicant has undertaken pre-application discussion with relevant stakeholders, including; the Clyde Fishermen's Association, the Northern Lighthouse Board and the RYA. Where appropriate, the applicant should provide a summary of pre-application discussion undertaken with key stakeholders in support of a full planning application.	A summary of pre-application discussions has been provided with the planning application.	Section 4.19

## 4 SUPPORTING ENVIRONMENTAL INFORMATION

The information contained within this Section has been specifically requested by consultees (as outlined in Section 4) through the pre-application consultation process. The order of information follows that of Argyll and Bute Council (ABC)'s Screening and Scoping Opinion and the consultee requesting the specific information is indicated.

### 4.1 Priority Marine Features: Impact Assessment and Mitigation Plan (Requested by: ABC)

ABC requested that a Priority Marine Feature (PMF) impact assessment and mitigation plan should be submitted. It was also requested by ABC that a Species Impact Assessment (including harbour porpoise and cetacean species) be undertaken. As all cetaceans are also PMFs, this assessment is included in this Section.

SEPA have stated that PMF's may be present in the development area, and noted that the visual benthic survey undertaken by SSC had identified the presence of burrowed mud.

SSC has consulted publicly available data, and previous benthic surveys undertaken at the Existing Site, to determine presence and quality of PMFs within, and adjacent to, the development area. The increase in Allowable Zone of Effect (AZE) (the area of acceptable benthic impact) associated with the Replacement Site is 43,589 m<sup>2</sup>. This exceeds, by a small amount, the SEPA threshold (40,000m<sup>2</sup>) for baseline visual survey requirement (under the Controlled Activities Regulations (Scotland) 2011), therefore a visual benthic survey has been undertaken. SSC agreed the scope of the visual benthic survey with SNH and SEPA prior to the survey being undertaken.

#### 4.1.1 Benthic Habitats and Species

##### 4.1.1.1 Baseline Characteristics

In order to assess the baseline physical, chemical and biological conditions in the development site, SSC undertook a baseline benthic survey in June 2018. The survey comprised the collection of samples with a Van Veen grab, at twelve stations located along pre-defined transects, such that a representative sample of the development area could be collected). Physio-chemical data was obtained, including sediment descriptive information, particle size analysis, redox and sediment chemistry. Benthic macrofauna were also sampled, with identification to the lowest level possible.

The benthic footprint associated with the Existing Site extends in a northerly direction from the site, with both the primary and secondary sampling transects to the north. Whilst the predicted footprint from the Replacement Site does not extend as far north as the benthic transects of the Existing Site, the information provided on the benthic conditions on these transects still provides information on conditions in the wider environment.

##### *Burrowed mud*

This habitat and component biotopes has a medium sensitivity to physical change (surface abrasion)<sup>1</sup>.

There is evidence of the presence of Burrowed Mud in the development area, through one historical record on the Marine Scotland NMPi database of the component biotope 'Seapens and burrowing megafauna in circalittoral fine mud', and observations of Tall Seapens (*Funiculina quadrangularis*) and Slender Seapens (*Virgularia mirabilis*) in the baseline ROV surveys carried out at the site. The features observed in the baseline surveys were in very low abundances (2 individuals of each species were observed), and were observed at the northern end of the Replacement Site, just to the south of the Existing Site pens. These features are located within the Existing Site footprint.

<sup>1</sup> Marine Scotland FEAST tool. Available at: <https://www.marine.scotland.gov.uk/FEAST/>. Accessed 01/10/2019

A mooring specification has been prepared for the Replacement Site and the moorings are not predicted to directly impact on the observed features detailed above. Therefore, there is predicted to be minimal impact associated with the mooring installation.

#### 4.1.1.2 Existing Site

Benthic conditions within the Existing Site footprint are surveyed regularly to ensure compliance with the SEPA CAR licence, the most recent survey was undertaken in June 2018. Sediment across the Existing Site footprint was predominately soft, sandy mud. Sediment analysis demonstrated a reasonably uniform composition across the Existing Site footprint, with redox profiles positive throughout (no SEPA Redox Action levels were exceeded). Sediment chemistry found low carbon LOI (loss on ignition) levels throughout the Existing Site footprint, with these being well within the SEPA Environmental Quality Standard (EQS) allowable limit.

Benthic macrofauna varied across the survey area and was determined by physical and chemical changes in the sediment, with the faunal analysis showing a diverse range of species with a moderate abundance at all sampling stations. Conditions at the edge of the Existing Site benthic footprint are similar to those recorded at reference stations (see Benthic Survey Report, Appendix H).

#### 4.1.1.3 Replacement Site

A baseline grab survey was undertaken at the Replacement Site in November 2018 (see Appendix H). Sediment from the baseline survey area was predominantly soft, sandy mud, with some more muddy and stony areas at the northern end of the development area. The faunal analysis indicates that species numbers are low throughout the survey area, with low to moderate abundance across all stations, including reference stations.

Publicly available information, on the NMPi, indicates that the Priority Marine Feature 'Burrowed Mud' has been recorded in the development area (within the Existing Site and Replacement Site boundaries). The broad habitat 'Burrowed Mud' is characterised by areas of finer sediments that are home to a range of burrowing crustaceans, including langoustine (*Nephrops norvegicus*), the mud shrimps (*Calocaris macandreae*, *Callinassa subterranean*, or *Maera loveni*) and angular crab (*Goneplax rhomboids*). The burrowing action of these species makes burrows and mounds a prominent feature of this habitat. In some areas burrowed mud may support conspicuous populations of seapens (typically *Virgularia mirabilis* and *Pennatula phosphorea* are present). The recorded observation detailed on the NMPi database is of the component biotope 'Seapens and burrowing megafauna in circalittoral fine mud'. In Scottish waters, these component species are extensively distributed throughout sheltered sea lochs and open coast muddy habitats. They are usually found in relatively shallow but sheltered muddy basins of sea lochs, at depths of 10 m to 180 m, therefore potential impacts resulting from the installation and operation of the Replacement Site have been considered (see Sections 4.1.1.4 and 4.1.1.5).

Baseline ROV surveys were carried out in October 2018 and July 2019, which covered a comprehensive survey area underneath where the Replacement Site will be located, the summary report is provided as Appendix I. The surveys indicated that the broad habitat 'Burrowed Mud' was present, primarily through observations of langoustine burrows and mounds, particularly to the west of the Replacement Site. The component biotope 'Seapens and burrowing megafauna in circalittoral fine mud' was recorded during the second survey, identified by the presence of tall seapens (*Funiculina quadrilangus*) and slender seapens (*Virgularia mirabilis*), however these were observed to be in low abundances (2 individuals of each species). As no other features of this biotope were observed and the features recorded were in such low abundance, it is considered that this is not a significant example of this biotope.

#### 4.1.1.4 Assessment of Installation Effects

Installation effects will be restricted to the physical placement of moorings on the sea bed and the securing of pens and moorings into the rope and chain grid matrix, with a site-specific design taking environmental conditions into account. Installation of the moorings will result in localised disturbance of the sea bed; however this is likely to be temporary, with disturbance effects on benthic habitats expected during the installation phase only.

#### 4.1.1.5 Assessment of Production Cycle Effects

It is recognised that waste material generated through the operation of the Replacement Site, including uneaten food, fish faeces and chemical residues from sea lice bath treatments, may deposit on benthic habitats within the Replacement Site footprint. Potential impacts on benthos include the following:

- Deposition of waste, resulting in the sedimentation and smothering of benthic habitats;
- Blocking of water, oxygen and nutrient exchange; and,
- Prevention of filter feeding organisms from effectively feeding and thriving.

Materials in the form of waste feed, which may contain in-feed medicine residues if they have been used at site such as SLICE (Emamectin benzoate, for the treatment of sea lice), and fish faeces may collect on benthic habitats directly under fish farm pens. Waste deposition is dependent on local hydrographic conditions and coastal processes in the locale, which can either result in the direct deposition of waste under the pens, or re-suspension and transportation of waste elsewhere by near bed currents.

Where waste deposition forms a 'footprint' of impact (i.e. the Allowable Zone of Effect), smothering of the seabed can result in anoxia, growth of bacterial mats and lead to changes in the faunal community. Where waste is re-suspended and transported elsewhere in the marine environment, this may reduce the effect of the deposition of benthic habitats directly under the pens and in the immediate environs.

The Existing Site and Replacement Site areas are characterised by moderate current velocities, and therefore a medium spatial footprint around the Site was expected, as well as some export from the model domain. Site specific depositional AutoDEPOMOD modelling has been carried out for the Replacement Site (Appendix J) and indicates that 60% of waste sediment will be exported from the model domain, and that this exported mass may affect an area of up to 3.2 km<sup>2</sup>, with local deposition of material immediately around the pen groups, and predominantly to the north and south of the pens<sup>2</sup>. The modelled resuspension frequency is considered to be moderate at the near-bed cell, with an estimated 1,500 tonnes potentially exported from the model domain per year. The effect of dispersion out with the modelled domain is expected to be comparable to background levels (4g/m<sup>2</sup>/year), and therefore will not impact the wider area, other than insignificantly. For the purposes of AutoDEPOMOD, the wider area is considered to be Loch Striven and the Sound of Rothesay.

#### Burrowed Mud

The Burrowed Mud habitat is considered to have a medium sensitivity to organic enrichment and siltation changes, which may be associated with the effects of the build-up of waste material deposits from aquaculture operations<sup>3</sup>. Typically, an increase in organic particulate matter results in a reduction in the suspension feeding fauna and an increase in the number of deposit feeders, particularly polychaete worms (Pearson and Rosendburg, 1978). Seapens are possibly not as tolerant to high organic contents and a reduction in abundance may be seen.

<sup>2</sup> SSC, 2013 Biomass and In-Feed Modelling Report

<sup>3</sup> Marine Scotland FEAST tool. Available at: <https://www.marine.scotland.gov.uk/FEAST/>. Accessed 09/08/2019

Burrowing species associated with the Burrowed Mud feature and generally able to burrow through the additional layer of sediment associated with siltation in a relatively short time (hours to days) therefore recoverability is considered to be medium<sup>Error! Bookmark not defined.</sup>. Certain component seapen species are able to withdraw rapidly into the sediment to avoid smothering effects, and others may be less likely to be affected by smothering due to their height. However, if continued siltation occurs at high levels, these animals may be affected. Feeding efficiency of suspension filter feeders may also be impacted by high siltation levels. Component species of 'Seapens and burrowing megafauna in circalittoral fine mud' may also have a high intolerance to substratum loss, displacement, changes in oxygenation and extraction of other species<sup>4</sup>.

The Existing Site has been in operation for a number of years, and does not appear to have an adverse effect on the closest observed recordings of this feature, which are located slightly to the south of the Existing Site pens, and within the footprint. Depositional modelling predicts that the benthic footprint of the Replacement Site will overlap with part of the Existing Site footprint and extend to the south of the existing footprint. The recorded PMFs will remain within this area. The effect of waste dispersion outwith the AZE is predicted to be similar to background levels (4g/m<sup>2</sup>/year). Waste dispersion within the AZE will be limited by compliance with EQS, set by SEPA through the CAR application process.

#### 4.1.1.6 Mitigation Measures and Ongoing Monitoring Requirements

During the installation phase, moorings can be micro-sited to avoid sensitive benthic habitats and species, which may be vulnerable to physical disturbance. ROVs may be utilised to ensure that the mooring anchors are placed on the seabed in areas where identified sensitive species and habitats are not present; therefore it is considered unlikely that any such species will be impacted by Development installation.

During operation of the Replacement Site, mitigation will be employed to minimise waste with monitoring undertaken to assess the extent of waste deposition against SEPA licence conditions. An application for a variation to the existing SEPA CAR licence (CAR/L/1000808) is currently being determined however SEPA have issued a draft licence confirming the intention to issue the variation. This variation is for the proposed pen location, arrangement and biomass required, with sufficient sea lice medicine to effectively treat the proposed biomass. Regular monitoring will be undertaken to ensure that benthic impacts do not exceed the limit specified in the CAR licence.

#### 4.1.2 Grey Seal

##### 4.1.2.1 Baseline Characteristics

The Replacement Site is located outside of the foraging range for harbour seals (*Phoca vitulina*) (approximately 30 km), and at the outermost end of the foraging range for grey seals (*Halichoerus grypus*) (40 km to 50 km). There is the potential for connectivity to two designated seal haul-out sites (SHOs)<sup>5</sup> within 50 km:

- SW-002 Sound of Pladda Skerries, approximately 50 km to the south of the Replacement Site; and
- SW-005 Lady Isle, approximately 44 km south of the Replacement Site.

SHOs are onshore coastal areas where seals come ashore to rest, moult or breed. Seals using these habitats are legally protected from intentional or reckless harassment. The closest seal haul out to the

<sup>4</sup> MarLIN, 2018. Seapens, including *funiculana quadrangularis* and burrowing megafauna in undisturbed circalittoral fine mud. Available at: <https://www.marlin.ac.uk/habitats/detail/239> Accessed 01/10/2019

<sup>5</sup> <https://www2.gov.scot/Topics/marine/marine-environment/species/19887/201814/haulouts> . Accessed 01/10/2019

Replacement Site, is SW-005 Lady Isle, which comprises the entire island of Lady Isle and associated rocky outcrops.

Whilst the Replacement Site is on the outermost limit of the foraging range for harbour seal there is still evidence of occasional sightings of grey seals, as demonstrated by the NMPi database and Existing Site wildlife logbook.

A summary of sightings recorded during 2018 and to date in 2019 at the Existing Site is provided in Table 4.1 below.

Table 4.1 Summary of Wildlife Log records (1st January 2018 – 01<sup>st</sup> October 2019)

Avian species	
<ul style="list-style-type: none"> <li>• Cormorant (<i>Phalacrocorax carbo</i>)</li> <li>• Eider (<i>Somateria mollissima</i>)</li> <li>• Gull spp</li> <li>• Duck spp</li> </ul>	<ul style="list-style-type: none"> <li>• Buzzard (<i>Buteo buteo</i>)</li> <li>• Grey heron (<i>Ardea cinerea</i>)</li> <li>• Crow (<i>Corvus corone</i>)</li> </ul>
Mammal species (excluding cetaceans)	
<ul style="list-style-type: none"> <li>• Grey seal (<i>Halichoerus grypus</i>)</li> <li>• Otter (<i>Lutra lutra</i>)</li> </ul>	
Cetacean species	
<ul style="list-style-type: none"> <li>• Harbour porpoise (<i>Phocoena phocoena</i>)</li> </ul>	

The wildlife assessment indicates that grey seal are likely to be the most common predatory species potentially associated with the Replacement Site.

#### 4.1.2.2 Assessment of Production Cycle Effects

Potential impact on both seal species from fish farm operations may include; deliberate mortality (via licensed dispatch), and accidental mortality (through net entanglement).

There is the potential for interaction between the operation of the Replacement Site and a relatively large and widespread resident grey seal population, primarily through predation. The effect of any impact could potentially have a large, albeit low magnitude, zone of influence.

The Existing Site is located a similar distance from SHO SW-002 and SW-005, and does not appear to impact on feeding in, and use of habitats, within the surrounding area. The wildlife logbook for the Existing Site details regular sightings of seals from the site, however these are at a low level. The Replacement Site will employ the same predator deterrent measures as the Existing Site, these will be detailed in the site PCP (provided as Annex 3 of Appendix D).

One of the methods available to deter seal depredation is the use of Acoustic Deterrent Devices (ADDs). To date, the measures utilised on existing SSC sites have been effective in reducing seal predation, with no evidence of direct impacts, such as injury or mortality, recorded. The primary potential impact of ADD use is the disturbance or displacement of seals from important feeding or breeding areas. SHOs SW-002 and SW-005 are located just within the recognised foraging range for seals; therefore should seals from these haul-outs be using underwater habitats for foraging within vicinity of the Replacement Site, it is possible that they may be disturbed by underwater noise associated with ADDs, should these be used at the Replacement Site. Studies have shown that seals

return to foraging areas soon after the ADD sounds cease, and when an ADD is positioned directly ahead of a seal's track, the animal would usually deviate from the track before returning to pursue its original direction. This suggests that the effects of ADD are temporary, and are unlikely to have any impact on the animal's ability to utilise habitats in proximity to the Replacement for commuting and foraging.

The Replacement Site will employ the same type of ADDs and the same mechanism of use, when necessary, as the Existing Site, therefore it is considered that the ADD use at the Replacement Site will result in a minimal impact on seals utilising the surrounding habitat. Any effects of disturbance and displacement associated with ADD use will be minor, temporary effects on rogue seals. The use of ADDs will be managed through the Predator Control Plan and an ADD Deployment and Usage Plan (Appendix N).

As there is an Existing Site at Ardyne, any vessel activity associated with the Replacement Site will be limited to the regular movements from small rapid staff transfer boats and less frequently, larger fish harvest vessels. Vessel movements associated with the Existing Site and neighbouring SSC sites in Loch Striven already take place within the range of SHO SW-002 and SW-005, with no apparent disturbance of seals using these sites. There will be a minor increase in vessel movements during the production cycle from the existing Toward shorebase, located adjacent to the development site, however any impact is expected to be minimal. The potential for accidental disturbance of seals using this haul-out from vessels associated with the Replacement Site is therefore considered low and unlikely.

Despite the low level of seal activity in the local environment (determined from wildlife logs at the Existing Site), no seal licences for the dispatch of a 'rogue' seal at the Existing Site has been required over the last seven years. This suggests that the non-lethal predation prevention measures, as well as effective husbandry currently in place at existing SSC sites, are very successful at reducing seal predation of stock and thus the potential effects of the fish farm on local seal populations. Application of seal licences at the Replacement Site will only be considered where other management options are precluded or have proven unsuccessful in deterrence. It is considered that the seal licence for the Existing Site is adequate to cover the Replacement Site at this time, this will be reviewed annually.

As the measures utilised on the Existing Site will be rolled out to the Replacement Site, any potential impact on seals in the surrounding area is predicted to be minimal. It is therefore expected that the requirement for rogue seal dispatch remains low and the impact would be of low magnitude.

#### 4.1.2.3 *Embedded Mitigation Measures*

##### *Acoustic Deterrent Devices (ADD) Deployment Plan (Requested by: SNH, ABC and ABC MCDU)*

An ADD Deployment Plan has been prepared for the Replacement site and is provided in Appendix N. The installation and operation of the Replacement site will require 24 ADDs to be made available for use at the site.

The ADD Plan outlines the equipment specification for the Ardyne site, including model, firing details, frequency and number of units to be installed. The procedures in place for activating/ deactivating ADDs and recording performance are also provided. Furthermore, SSC commits to sharing this information with ABC, if required. Through adherence to the ADD Plan, SSC aims to demonstrate the commitment to limiting use of ADDs at the Replacement Site whenever possible.

If ADDs are used at the Replacement Site, their use will be in accordance with an ADD Deployment Plan, as outlined in Section 4.2 below. The ADD Plan will ensure that ADD use is occasional and closely managed, with ongoing monitoring of cetacean presence when units are sounding.

### *Predator Protection Plan (Requested by: SNH, ABC and ABC MCDU)*

The Predator Control Plan (PCP) for the Existing Site has been amended to take into account the replacement equipment. The PCP is contained within the EMP (Appendix D) and details the sequential steps and triggers for specific control measures to be implemented.

- The PCP contains a wildlife assessment, based on sightings recorded in the site Wildlife Log and publicly available information<sup>6 7</sup>. Any effects on seals during the operation of the Replacement will be associated with the management and mitigation measures detailed in the PCP. These measures include the following; Appropriate husbandry practices which aim to reduce stock mortality that may inadvertently attract predators;
- Selection of the most appropriate new designs and tensions, with installation of Seal Blind (false bottom) nets;
- Tensioned top nets with supports to prevent surface attacks;
- Use of ADDs to deter seal attacks; and
- Maintenance of a Wildlife Log to help assess and monitor changes in wildlife occurrence and distribution in marine habitats surrounding the Development over time.

The above measures are applicable to mitigate any impact on harbour seals, should they be recorded.

Should it be determined to be necessary to use ADDs at the Replacement Site, the decision-making process (including recognised triggers) will be documented and agreed with ABC, and ADD use will be in line with an ADD Deployment Plan (provided as Appendix N). This will ensure that any potential impact from ADD on non-target species is kept to a minimum.

### *Escapes Contingency Plan (Requested by: SNH, ABC and ABC MCDU)*

The Escapes Contingency Plan (ECP) for the Existing Site has been amended to take into account the proposed replacement equipment. The ECP is contained within the EMP (Appendix D).

The proposed ADD for the Replacement Site will be the same as that in use at the Existing Site i.e. it will be a triggered system to ensure optimum efficiency and to reduce the likelihood of impacts on harbour porpoise. Details on the system to be used at the Replacement Site are provided in the PCP and ADD Plan (Appendix N). Sightings of seals, in close proximity to the Replacement Site, will be recorded by site staff regularly in the Wildlife Log. Seal activity associated with a threat to fish health and welfare will result in appropriate action being taken in line with the PCP.

As a last resort, seals which are found within a pen, or cause a persistent threat through frequent attacks, will be removed by specialist, licensed contractors. This practice will follow all requirements and strict guidelines, as determined in the Marine (Scotland) Bill, with respect to the shooting of seals<sup>8</sup>. The likelihood of lethal dispatch taking place is very low, however, if it does occur, the magnitude of the effect on the local seal population will be very low.

#### *4.1.3 Otter*

##### *4.1.3.1 Baseline characteristics*

The publically available data indicates that the PMF species otter, have been observed in the surrounding area, with recorded observations approximately 2 km to the north and 2.5 km to the

<sup>6</sup> Stone, C.J. *et al*, (1995), An atlas of seabird distribution in north-west European waters, 326 pages, A4 softback, ISBN 1 873701 94 2

<sup>7</sup> Marine Scotland National Marine Plan Interactive. <https://marinescotland.atkinsgeospatial.com/nmpi/>. Accessed 22/09/2019

<sup>8</sup> Scottish Government (2010): Marine (Scotland) Act 2010 - Part 6 'Conservation of seals'. Available at: <https://www.gov.scot/Topics/marine/seamanagement/marineact/Seals> Accessed 10/09/2019

south-east. Otters living in freshwater habitats have very large home ranges extending 20 km to 30 km<sup>9</sup>. Coastal dwelling otters tend to have a smaller home range, due to the abundance of prey in inshore waters. The available data is historical (collected prior to 2004) and it is not known whether any more recent survey information exists. However, it is likely that the surrounding coastal habitat remains potentially suitable for foraging, if there are still otters present.

The Existing Site has been in operation for a number of years, and the wildlife logbook details occasional sightings of otters in the surrounding area, throughout the year.

#### 4.1.3.2 Assessment of Installation Effects

The development will involve the removal of all pen, net and mooring equipment associated with the Existing Site and the installation of pen, net and mooring equipment associated with the Replacement Site. The development will effectively move the pens approximately 365 m to the south of the existing pens. The activities associated with the installation of the Replacement Site are very similar to those associated with the re-equipment of the Existing Site during routine fallow periods. Otters are considered to be able to habituate to moderate levels of human disturbance<sup>10</sup>. Any disturbance effects associated with the installation of the Replacement Site will be on a temporary basis, therefore the risk of disturbance is considered to be low.

#### 4.1.3.3 Assessment of Production Cycle Effects

The Existing Site has been in operation for a number of years. Otters have continued to use the surrounding coastline, as demonstrated by sightings recorded in the site wildlife logbook, therefore it is considered that any disturbance associated with production cycle operations is minimal. Otters may potentially be at risk from entanglement with fish farm nets, if they engage in predatory behaviour. No predatory interactions have been recorded at the Existing Site during production, therefore it is believed that the predator deterrent measures in use are satisfactory. As the same predator deterrent measures will be employed at the Replacement Site, the risk of entanglement of otters is considered to be low.

There are no works required to be undertaken on the shore adjacent to the Replacement Site as part of this development, therefore it is considered that any risk of disturbance to otters in the immediate area is low.

#### 4.6.5.4 Embedded Mitigation Measures

A Predator Control Plan (Annex 3 of Appendix D) has been prepared for the Replacement Site, which contains a wildlife assessment for the surrounding area, and details the measures to be employed on site to reduce the risk of predation. Pen nets will be highly tensioned, and sinker tubes will be used to maintain optimum tension. Tensioned, fine-meshed top nets will be installed at the Replacement Site to reduce risk of birds entering the nets from above, these are in use at the Existing Site and are not believed to present an entanglement risk to otters.

#### 4.1.4 Basking shark

##### 4.1.4.1 Baseline Characteristics

Basking shark (*Cetorhinus maximus*) are a PMF, and tend to favour open waters, however move closer to inshore areas in the summer months, primarily to feed. There are occasional records from all Scottish coasts, with sightings 'hot spots' on the west coast during summer.

<sup>9</sup> SNH <https://www.nature.scot/plants-animals-and-fungi/mammals/land-mammals/otter> Accessed 01/10/2019

<sup>10</sup> Chanin P (2003). *Ecology of the European Otter*. Conserving Natura 2000. Rivers Ecology Series No. 10. English Nature, Peterborough.

NMPi data indicates that low density observations of basking shark have been recorded in the wider Sound of Rothesay/ Firth of Clyde area (the closest recorded sighting is approximately 5 km from the Replacement Site), however there have been no observations of basking shark recorded in the Existing Site wildlife log.

The Marine Biological Association's ('MBA') Marine Line Information Network ('MarLIN') tool shows the basking shark is not considered sensitive to underwater noise or visual disturbance<sup>11</sup>, and has a medium level of sensitivity to collision risk and physical barriers to movement. The MBA however also considers that it is likely that, as the species is highly mobile, it would be able to swim around aquaculture infrastructure, resulting in little more than small-scale energy loss.

#### 4.1.4.2 Assessment of Production Cycle Effects

Whale and Dolphin Conservation (WDC) that if tensioned nets are used and maintained correctly, the risk of entanglements to basking sharks is significantly reduced<sup>12</sup>. Nets at the Existing Site are correctly tensioned and checked regularly, and the requirement for this is outlined in the site-specific PCP and Escapes Contingency Plan (ECP). These standards and practices will be rolled out across the Replacement Site, and the PCP and ECP updated accordingly. There have been no recorded incidents relating to entanglement of basking sharks at the Existing Site, therefore it is considered that the risk of entanglement at the Replacement Site is very low.

#### 4.1.4.3 Embedded Mitigation Measures

As stated above, the PCP (Annex 3 of Appendix D) will ensure that pen nets will be highly tensioned, and sinker tubes will be used to maintain optimum tension.

#### 4.1.5 Harbour Porpoise and Cetacean Species (Requested by: ABC)

##### 4.1.5.1 Baseline Characteristics

The Replacement Site is not located in, or in the vicinity of, any designated areas for cetacean species. Information available via the National Marine Plan (Interactive) (NMPi)<sup>13</sup> and the Hebridean Marine Mammal Atlas<sup>14</sup> indicates that there are no recorded sightings of other cetaceans; such as minke whale (*Balaenoptera acutorostrata*) or bottlenose dolphin (*Tursiops truncatus*) in the waters surrounding the Existing or Replacement Site. The data indicates a potentially low abundance of harbour porpoise in the surrounding area and, whilst habitat mapping suggests the area contains suitable habitat for porpoise, recorded sightings are very low. Data available from the wildlife log (see Table 4.1) for the Existing Site also demonstrates that harbour porpoise are the only cetacean species to have been observed at the site, throughout the year and in low abundance.

##### 4.1.5.2 Assessment of Production Cycle Effects

Impacts that may affect cetacean species within the local area are considered to be:

- Net entanglement (i.e. entanglement of harbour porpoise in fishing gear and removal or prey species);
- Contaminants (i.e. pollution resulting in effects on water quality and bioaccumulation which may then affect the survival and productivity of harbour porpoise);
- Underwater noise; and

<sup>11</sup> <https://www.marlin.ac.uk/species/detail/1438>

<sup>12</sup> WDC (2002) Environment, Climate Change and Land Reform Committee Environmental impacts of salmon farming. Written submission from Whale and Dolphin Conservation (WDC)

<sup>13</sup> Marine Scotland National Marine Plan (Interactive) <https://marinescotland.atkinsgeospatial.com/nmpi/>. Accessed 02/10/2019

<sup>14</sup> HWDT Marine Mammal Atlas <https://hwdt.org/hebridean-marine-mammal-atlas>. Accessed 02/10/2019

- Death or injury by collision (predominantly with fast moving vessels).

### *Entanglement Risk*

The risk of entanglement for harbour porpoise and other cetacean species with aquaculture infrastructure (moorings, nets and pens) is generally considered low<sup>15</sup>. Harbour porpoise have been recorded occasionally in the vicinity of the Existing Site, and yet no net entanglement has been recorded to date. The risk associated with the Existing Site is considered to be very low. At the Existing Site to date, a net tensioning system is installed to hold the pen nets uniformly taut. This presents a 'wall' to any underwater predator with no slack areas for entanglement. The use of a net tensioning system removes the need for predator nets and therefore eliminates the risk of entanglement for predatory species. The use of net tensioning is recognised by SSPO as good practice in terms of predator control. The pen nets attach to the sinker tubes at regularly spaced fixing points, this ensures nets are highly tensioned and pen volume and structure is maintained. The potential for this impact is considered negligible as a result of the Replacement.

### *Contaminants*

Cetaceans are at risk of bioaccumulation from chemical pollution, principally from persistent organic pollutants (POPs), due to their toxicity, abundance and persistence in the marine environment. With regards to pollution from aquaculture developments, waste may contribute a mix of organic and inorganic compounds to waters, potentially leading to small scale eutrophication and oxygen depletion.

The coastal processes around the Existing and Replacement Site areas will likely prevent eutrophication of the local environs. The local area is characterised by moderate to strong current velocities (see Modelling Report, Appendix J), therefore a large spatial footprint around the site is expected. The moderately high tidal energy and local water depths at the site result in the site being moderately flushed, and there will be a resultant dispersal and dilution of waste deposits in the vicinity of the Replacement site. Therefore, it is likely that any impact on the environment from pollutants will be of a localised nature.

In light of this, and the conditions noted above, it is considered that the potential for impact to harbour porpoise from contaminants associated with the Replacement is negligible.

### *Disturbance and Collision Risk from Marine Vessel Usage*

Although cetaceans may potentially be at risk from collision when foraging offshore, there is little evidence to suggest that harbour porpoise or other marine mammals are at risk from collision with fish farm vessels<sup>16</sup>. Harbour porpoise are naturally shy of boats, generally engaging in avoidance behaviour when vessels approach or are heard<sup>17</sup>.

Although vessel activity could result in temporary avoidance behaviour in foraging marine mammals, the effect will be temporary and of low magnitude. In light of the above, any effects on cetaceans from the use of vessels associated with the Replacement are expected to be minimal.

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<sup>15</sup> Inner Hebrides and the Minches Proposed SAC – (Multi-agency) Advice to Support Management. Available at: <https://www.nature.scot/sites/default/files/2017-10/Consultation%20-%20Harbour%20Porpoise%20-%20Inner%20Hebrides%20and%20the%20Minches%20pSAC%20-%20Combined%20Reg%2033%20%20MOP%20-%20A1918723.pdf>. Accessed 06/09/2019

<sup>16</sup> Inner Hebrides and Minches: Advice to Support Management. Available at: <https://www.nature.scot/sites/default/files/2017-10/Consultation%20-%20Harbour%20Porpoise%20-%20Inner%20Hebrides%20and%20the%20Minches%20pSAC%20-%20Combined%20Reg%2033%20%20MOP%20-%20A1918723.pdf>

<sup>17</sup> IAMMWG, Camphuysen, C.J. & Siemensma, M.L., 2015. A Conservation Literature Review for the Harbour Porpoise (*Phocoena phocoena*). JNCC Report No: 566, JNCC, Peterborough 2015.

### *Underwater Noise*

It is recognised that active ADDs may result in potential disturbance and habitat exclusion of cetaceans, and in particular harbour porpoise, in the area of ADD use and where cetaceans are present within the detectable range.

Not all delphinids (marine dolphins and porpoises) are similarly affected by ADDs. At-sea trials have shown that ADDs that produced an evasive response by bottlenose dolphins, failed to elicit any similar behaviour in common dolphins<sup>18</sup>, with other research showing little notable response at all from ADDs from bottlenose dolphin. Harbour porpoise are occasionally seen in the vicinity of the Existing Site, these sightings have been at times when ADDs were actively sounding, and also when they were not active, suggesting harbour porpoise are still able to utilise the surrounding habitat during active use.

Furthermore the ADDs at the Replacement Site (OTAQ devices) will be used on an occasional and temporary basis in reaction to a predation threat, and will emit noise within the low frequency range of between 8 - 12 kHz, outwith the key hearing range of harbour porpoise, therefore the likelihood of an effect is low. Should an effect occur of harbour porpoise or any other cetacean species, it is predicted to be temporary and of very low magnitude.

#### *4.1.5.3 Embedded Mitigation*

##### *Entanglement Risk*

The net tensioning system employed successfully at the Existing Site will also be employed at the Replacement Site (detailed in the Predator Control Plan (PCP), presented as part of the EMP, Appendix D). Sinker tubes will also be used at the Replacement Site. These are rigid, circular structures, manufactured of high-density plastic and filled with chain or steel wire, which are attached to the pen structure and held level with the base of the nets.

##### *Contaminants*

The Replacement Site will prioritise non medicinal sea lice treatments, including biological control, and physical removal. However, where medicinal treatments are required. The Replacement Site will maintain high standards of practice for the application of chemical treatments and waste management measures undertaken in accordance with the site specific EMP (Appendix D) and the FMS (Appendix G). This will ensure strict adherence to statutory regulations and the Scottish Salmon Producers Organisation Code of Good Practice as a minimum.

##### *Disturbance and Collision Risk from Marine Vessel Usage*

Vessel activity associated with the development will primarily be related to the workboat for the Replacement Site, a slow moving vessel used over short distances. This will be operated in accordance with best practise methods (such as the Scottish Marine Wildlife Code). The Replacement will be served by the feed station associated with the Existing Site (located on the land adjacent to the site at all times of the production cycle, there are no changes proposed to the location or type of system).

### *Underwater Noise*

#### *Acoustic Deterrent Devices (ADD) Deployment Plan (Requested by: SNH, ABC and ABC MCDU):*

An ADD Deployment Plan has been prepared for the Replacement site and is provided in Appendix N. The installation and operation of the Replacement site will require 24 ADDs to be made available for use at the site.

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<sup>18</sup> Berrow, S., Cosgrove, R., Leeney, R.H., O'Brien, J., McGrath, D., Dalgard, J. and Le Gall, Y. (2009) Effect of acoustic deterrents on the behaviour of common dolphins (*Delphinus delphis*) Journal of Cetacean Research Management. 10(3):227–233, 2008

The ADD Plan outlines the equipment specification for the Ardyne site, including model, firing details, frequency and number of units to be installed. The procedures in place for activating/ deactivating ADDs and recording performance are also provided, to ensure that ADD use is only when absolutely necessary and use is kept to a minimum. Furthermore, SSC commits to sharing this information and reviewing performance with ABC, if required. Through adherence to the ADD Plan, SSC aims to demonstrate the commitment to limiting use of ADDs at the Replacement Site whenever possible.

As detailed with the ADD Plan, the ADDs to be used at the Replacement Site (OTAQ devices) will emit noise within the low frequency range of between 8 - 12 kHz, which is outwith the key hearing range of harbour porpoise. In order to further reduce the opportunity for potential effects on harbour porpoise further, SSC will only utilise ADDs when determined to be absolutely necessary and all passive measures have been employed (as detailed in the Predator Control Plan, Annex 3 of Appendix D).

If ADDs are used at the Replacement Site, their use will be in accordance with an ADD Deployment Plan, as outlined in Section 4.2 below. The ADD Plan will ensure that ADD use is occasional and closely managed, with ongoing monitoring of cetacean presence when units are sounding.

#### **4.2 Assessment of the risk posed to wild salmonids (Requested by: SNH)**

##### *Baseline*

Atlantic salmon are anadromous, living in freshwater habitats as juveniles but migrating to sea as adults before returning to their native rivers to spawn. Spawning occurs from November to December, but may extend from October to late February. Little is known about the migration pathways of post-smolts or returning adults<sup>19</sup>.

The multi-sea-winter component of the Atlantic salmon (*Salmo salar*) population is a UK Biodiversity Action Plan (BAP) Priority fish species. It should be noted that salmon is an Annex II species under the Habitats Directive only in freshwaters throughout the EU, and therefore marine and estuarine sites are excluded from selection<sup>20</sup>.

Sea trout (*Salmo trutta*) are the sea-running form of the Brown trout that first migrate to sea generally after 2 – 3 winters in freshwater, to feed and grow. When in the marine environment, they tend to remain in coastal margins, feeding on a variety of prey, including crustaceans and small fish. They return to their natal river to spawn in the late autumn. Some fish may then return to sea and may make many annual spawning visits<sup>21</sup>. Neither form of trout (brown or sea) receives notable protection within conservation legislation, although some protection exists in the form of exploitation controls within fisheries legislation, and both brown trout and sea trout (*Salmo trutta*) are UK BAP priority fish species. Salmon and sea trout are classed as Priority Marine Features in the marine phase of their life cycle.

The rivers around Loch Striven and Sound of Rothesay are known to have fisheries for salmon and sea trout. The primary river in the surrounding fishery statistical district (Eachaig) is the Eachaig (approximately 20 km north-east from the Replacement Site). The Eachaig is currently graded as '3' under the Conservation Measures to Control the Killing of Wild Salmon Regulations (The Conservation of Salmon (Scotland) Regulations 2016), and is currently subject to mandatory catch and release measures for one year. There are also a number of smaller watercourses in the surrounding area which may support salmonid populations. The NMPi indicates that salmon are present in the lower

<sup>19</sup> SNH, 2018. Atlantic salmon. Available at: <https://www.nature.scot/plants-and-animals/fish/freshwater-fish/atlantic-salmon>  
Accessed: 06/09/18

<sup>20</sup> <http://jncc.defra.gov.uk/ProtectedSites/SACselection/species.asp?FeatureIntCode=s1106>

<sup>21</sup> SNH, 2019. Brown trout. Available at: <https://www.nature.scot/plants-animals-and-fungi/fish/freshwater-fish/brown-trout>.  
Accessed 29/01/2019.

reaches of the Ardyne Burn, which is approximately 1.5 km to the south-east of the Replacement site, however no information is available on the source or date of this classification. The Existing Site, which has been in operation for a number of years, is located approximately 2 km from this watercourse.

The historical catch data (1952 – 2018) for the Eachaig statistical district is shown in Chart 4.1 and Chart 4.2 below. Whilst both salmon and sea trout catches have declined since the 1960s, the catch numbers of sea trout in particular have remained relatively stable in recent years.

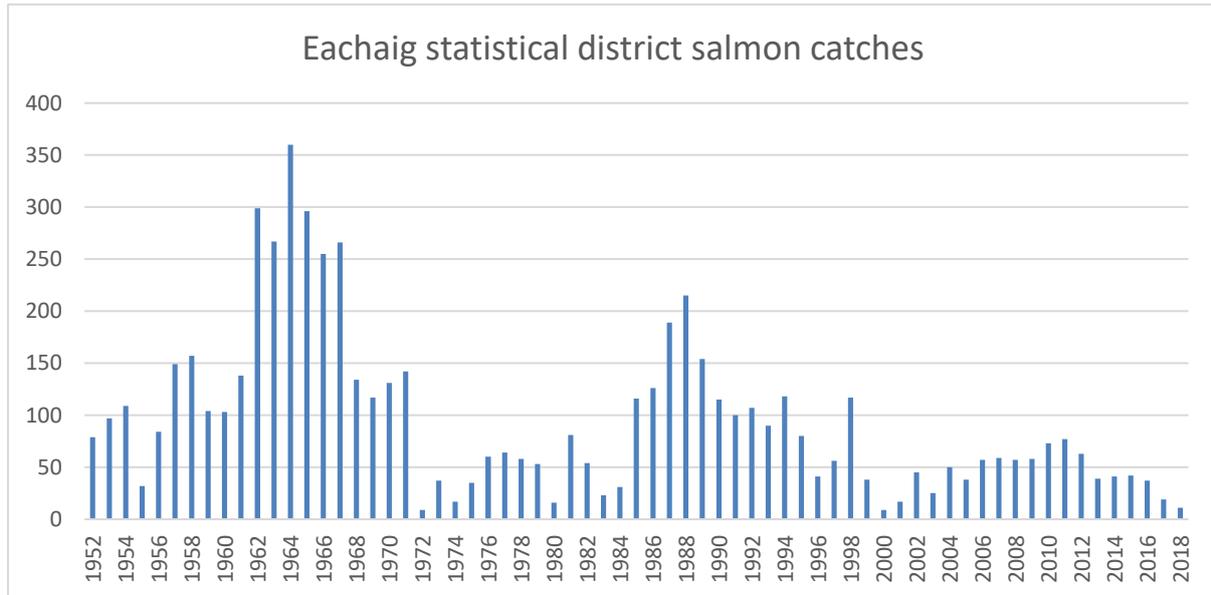


Chart 4.1 Eachaig statistical district salmon catches 1952 – 2018 (including catch and release figures from 1994 onwards)

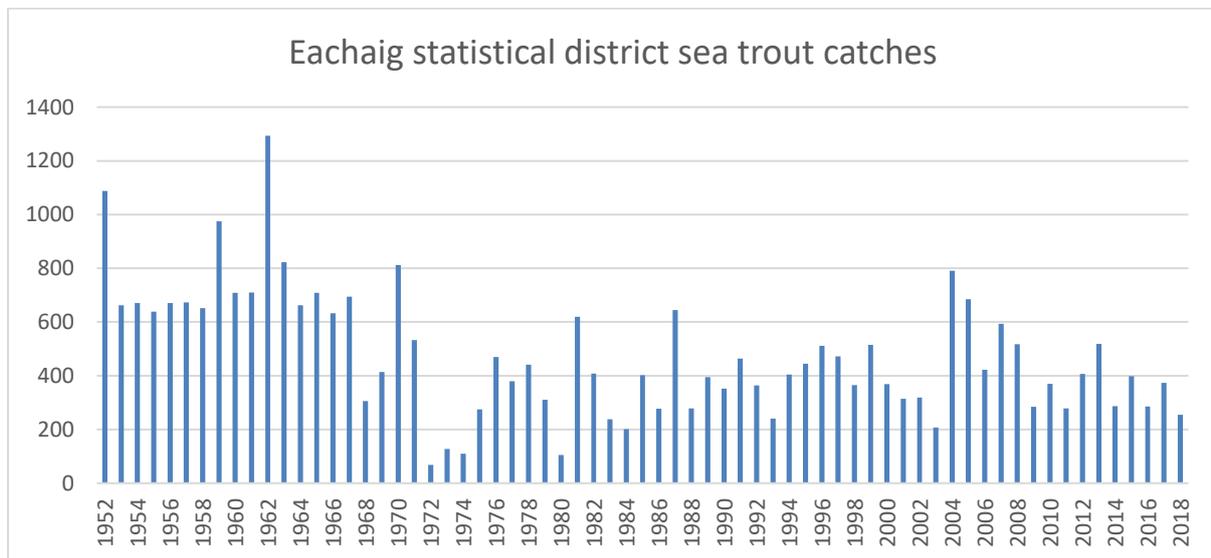


Chart 4.2 Eachaig statistical district sea trout catches 1952 – 2018 (including catch and release figures from 1994 onwards)

It is feasible that the recent reduction in catches in the district may in part be due to the Grade 3 fishing restrictions. Furthermore, as the Eachaig district covers the wider surrounding area these figures may not be representative of the catches in the immediate area, but do give an indication of catch trends in the wider area.

### *Salmonid migration movements*

Post-smolts migrate rapidly and actively towards open marine areas after leaving their source rivers and do not appear to closely follow nearby shores, although this may occur where coastal currents are substantial in this area. Few studies have observed swimming depth, where this has been recorded, post-smolts have generally been found utilising shallow depths of typically 1 -3 m (up to 6 m)<sup>22</sup>.

Sea surface trawls provide the majority of information available on the route used by salmon to migrate from Scotland to their distant ocean feeding grounds<sup>22</sup>; these show that some post-smolts of unknown river origin migrate northwards off the western coast of Scotland along the continental shelf edge, potentially making use of dominant ocean currents. Generally, high-densities of post-smolts are reported to the north and north-west of Scotland in a highly dispersed pattern of distribution throughout much of the Norwegian Sea<sup>23</sup>.

Tagging studies have shown that in general, salmon (multiple sea winter fish) from the west coast of Scotland primarily head north and east, whilst grilse (one sea winter fish) head both north and south. Migrating salmon spend most of their time close to the surface of the water but often dive (sometimes to great depth, up to 280 m), with this behaviour persisting late into the migration on the return to home waters.

On the basis of the above information, it is anticipated that migratory salmon from the watercourses entering Loch Striven will utilise waters in open areas (rather than following shorelines) and at shallow depths, with post-smolts preferring open water and heading in a southerly direction through the Sound of Rothesay. Once in Firth of Clyde area, it is anticipated that post-smolts will travel in a southerly direction on the east side of Bute and Arran to the outer Firth of Clyde, after which they will travel northwards to the north-east Atlantic.

### *Potential interactions*

Potential interactions with wild salmonids (salmon and sea trout) are believed to be limited to the effects of sea lice infection on wild salmonid populations and accidental escape events.

It is recognised that salmon farms increase the number of sea lice in the environment and that this may have an impact on wild salmon<sup>25</sup>. Sea lice are a naturally occurring parasite on many wild fish species, with *Lepeoptheirus salmonis* being the species that specifically parasitizes Atlantic salmon and sea trout. Salmon farms have been shown to be a more important contributor to the total number of sea lice in the environment than wild fish, with environmental larval lice concentrations relating to local farm lice loads<sup>24</sup>.

A healthy wild host can support several sea lice without detriment; however as salmon farms involve a large number of potential hosts being held in one place, an unchecked outbreak at a farm can potentially increase local lice populations above background levels, increasing the potential risk to wild salmonid populations in the local area.

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<sup>22</sup> Malcolm, I.A., Godfrey, J., Youngson, A.F.2010. Review of migratory routes and behaviour of Atlantic salmon sea trout and European eel in Scotland's coastal environment: implications for the development of marine renewables. *Scottish Marine and Freshwater Science*, 1, 14.

<sup>23</sup> Holm *et al*, 2000. Spatial and temporal distribution of post-smolts of Atlantic salmon (*Salmo salar* L.) in the Norwegian Sea and adjacent areas. *ICES Journal of Marine Science* 57(4):955-964

<sup>24</sup> Penston, M.J. & Davies, I.M. (2009) An assessment of salmon farms and wild salmonids as sources of *Lepeoptheirus salmonis* (Krøyer) copepodids in the water column in Loch Torridon, Scotland. *Journal of Fish Diseases* 32, 75-88.

Existing studies have shown that sea lice infestation of young salmon leaving the river can affect the number of wild salmon returning to natal rivers to spawn<sup>25</sup>. Many factors influence the extent to which wild salmonid populations are affected by sea lice, including the size of the fish, the distribution of sea lice due to fish farms, the distance and areas through which salmon migrate to open waters, sea lice control measures on fish farms and the status of wild salmon populations<sup>25</sup>. At the time of writing the scientific information available on the impact of sea lice from aquaculture on wild salmonids in Scotland is somewhat limited, therefore it is difficult to extrapolate conclusions from existing studies to the Development.

Farmed fish escapees can pose a risk to wild salmonid populations in the form of genetic dilution of wild populations through interbreeding between escapees and wild salmon population, and the reduction in fitness of wild populations caused by increased competition over resources with escapees<sup>26</sup>. Escape events at fin fish farms generally result from operational accidents, predator interaction, equipment failure or adverse weather events and are rare in their occurrence, with none recorded at the Existing site since 2006 (this event occurred prior to SSC taking over the management of the site).

#### *Assessment of Installation Effects*

Development installation will involve the removal of all existing moorings and infrastructure such as pens and nets at the Existing Site, and installation of moorings and infrastructure such as pens and nets at the Replacement Site. There has been a fish farm operating at the Existing Site for a number of years and, during this time, similar removal and re-equipment operations have taken place as part of routine fallow operations. The installation of the Replacement Site may result in disturbance of salmonids which may be using surrounding marine habitats for foraging or (or depending on the time of year) migration. Disturbance impacts will be of a temporary duration and are likely to be localised to the Development footprint and immediate surrounding environment, with local salmonid populations having a low sensitivity to disturbance effects. Potential for impact to local wild salmonid populations is therefore considered to be very low.

#### *Assessment of Production Cycle Effects*

There is an increase in biomass associated with the Replacement Site, therefore it is considered that juvenile salmonids (including post-smolts) leaving spawning rivers in Loch Striven may be vulnerable to sea lice infestation associated with the development; however as fish pass through the Sound of Rothesay the majority of juvenile salmonids are unlikely to be vulnerable to any additional risk. As sea trout tend to remain in nearshore coastal waters for their first two months at sea before dispersing more widely<sup>25</sup>, those using marine habitats in Loch Striven are considered at greater risk than salmon of encountering farm-derived lice.

The Environmental Management Plan (EMP) for the Ardyne site outlines a Sea Lice Management Strategy to reduce and manage the risks posed by parasites (including sea lice). As outlined in Section 4.4, these methods and strategies as laid out in the EMP are proving to be highly effective at existing sites. A comprehensive review process of the EMP and Veterinary Health Plan will ensure the most appropriate approaches are taken at site.

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<sup>25</sup> Scottish Government, 2016. The interactions and effects of sea lice on wild salmon. Available at: <https://www.gov.scot/Topics/marine/Salmon-Trout-Coarse/Freshwater/Research/Aqint/sealice>

<sup>26</sup> Naylor. N., Hindar.K., Fleming.I.A., Goldberg.R., Williams.S., Volpe.J., Whoriskey.F., Eagle.J., Kelso.D., and Mangel.M (2005) Fugitive Salmon: Assessing the Risks of Escaped Fish from Net-Pen Aquaculture. *BioScience*, Volume 55, Issue 5, 1 May2005, Pages 427–437

Escape events at finfish farms generally result from operational accidents, predator interactions, equipment failure or adverse weather events and are therefore rare in occurrence. No escapes have been recorded at the Existing site since under SSC management. The EMP details a site specific Escapes Contingency Plan which outlines the measures taken to minimise the risk of escapes occurring and also details the actions to be taken in the event of an escape occurring, to minimise the potential for impact to wild salmonid populations.

There are two other operating marine salmon farms in Loch Striven (both operated by SSC), therefore an increase in biomass from the Replacement Site, in combination with these, could potentially increase the risk of disease, sea lice infestation and escapes to local wild salmonid populations in the local waters. It is therefore, vital that appropriate and effective measures are employed to control and reduce sea lice infestations; such measures are currently in place at the Existing Site and will be carried on to the Replacement.

#### *Mitigation*

The EMP includes a detailed Sea Lice Management Strategy (SLMS), which includes lice monitoring protocols, lice treatment plans, sensitivity testing measures, the use of cleanerfish, Hydrolicer and sharing of lice data, to minimise the risk of infestation to wild salmonids. The Replacement Site will be operated in synchrony with the sites within the existing FMA (for CoGP MA M-45), in terms of fallowing, stocking, harvesting and the administering of co-ordinated sea lice treatments will take place.

To reduce the risk of accidental escapes, SSC employs specific escapes prevention and containment policies as recommended by the SSPO, SEERAD Escapes working group and the Industry Code of Good Practice.

#### **4.3 Confirmation of SLICE amount and Azamethiphos 24 hour amount to be consented and used at site. (Requested by: MSS)**

The Ardyne site currently has sufficient consent to enable 5 SLICE treatments at maximum biomass. SEPA's interim position prefers a maximum of 2 SLICE treatment at maximum biomass. This does not impact SSC's sea lice management plan, because SLICE is used in the early part of the cycle when the fish are small and below maximum biomass levels. If SEPA should adjust their position and reduce consent for Emamectin benzoate further, then SSC will utilise the tools at its disposal to ensure sea lice control. This might involve stocking cleanerfish earlier than planned, administration of bath treatments, or mechanical intervention to keep lice levels low.

There is not enough consent to treat with Azamethiphos within a 24 hour period, however this is not anticipated to impact on the lice management capability at the Replacement Site, as there are other tools available, as detailed above.

#### **4.4 Lice Treatment and Monitoring Plan (Requested by: SNH, ABC and ABC MCDU)**

The EMP (Appendix D) provides details of the lice treatment and monitoring plan proposed to be employed across the Replacement Site. The plan outlines a number of measures that will be employed at the site to minimise any potential risk of sea lice infestation across the Replacement Site.

Sea lice control measures in place at the Existing Site have recorded significant improvements in lice control in recent generations, with effective control predicted for future generations. A summary of the trends in sea lice populations at the Existing Site over the past four generations (2011 S1, 2013 S1, 2015 S1 and 2017 S1) as well as the current generation (2019 S1) up to August 2019, are presented in Chart 4.3 (below), and demonstrates that although some earlier generations experienced higher levels

of sea lice, an improving picture in the success of sea lice control is evident in more recent generations, particularly in the current generation, where lice levels are low.

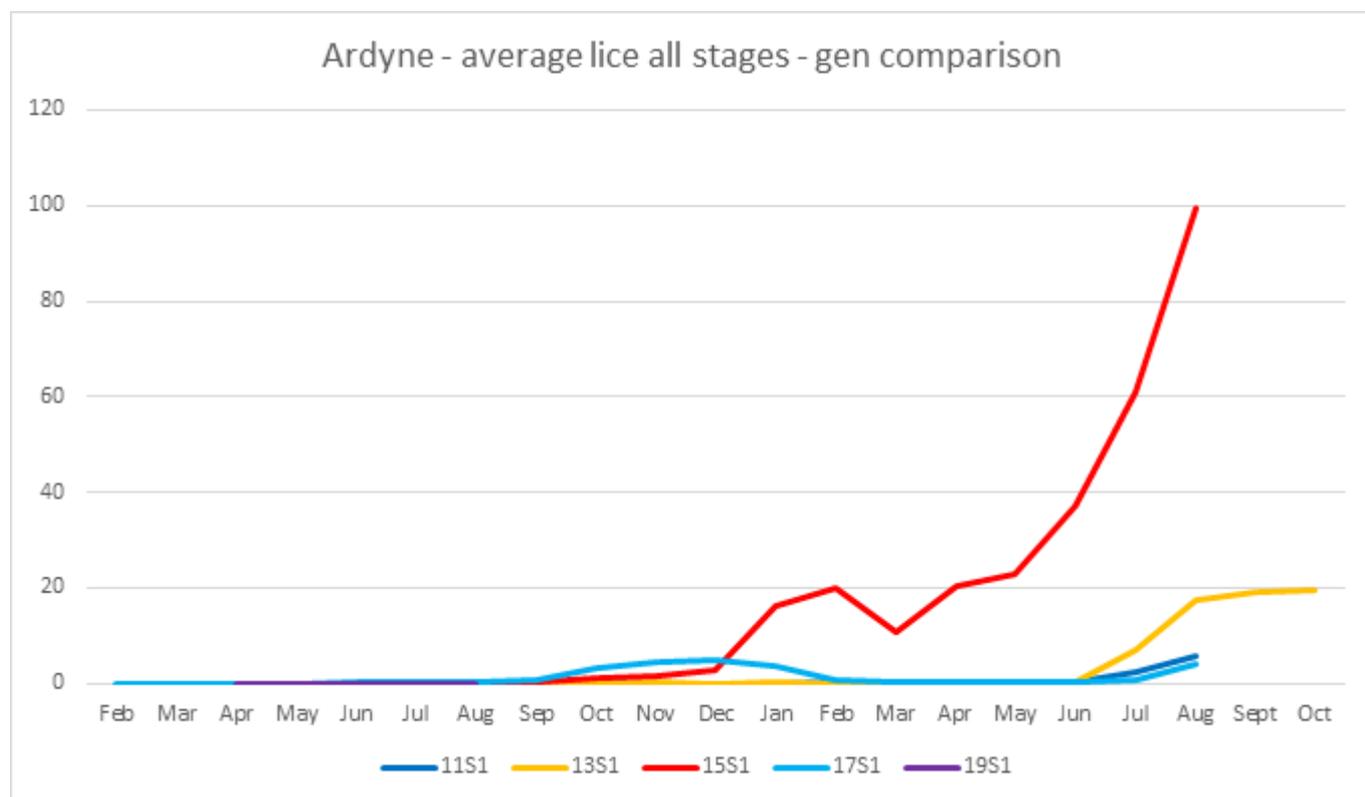


Chart 4.3 Monthly Trends in Sea Lice Production at the Existing Site

#### 4.5 Attestation of existing site's compliance with the CoGP, their own targets and the success in treatment of lice on site (Requested by: MSS)

A specific attestation, detailing the information requested by Marine Scotland Science, has been provided in Appendix E. The information provided in Section 4.4 above also demonstrates that lice management is effective at the Existing Site.

#### 4.6 Operational details for other sea lice management measures, and evidence of effectiveness of more recent sea lice management measures at the existing site and confirmation of the ability to 'upscale' to effectively treat 2500 tonnes of biomass as proposed (Requested by: ABC and ABC MCDU)

The requested details on the various sea lice management measures available, and the decision making and review processes, are contained within the EMP (Appendix D). Furthermore, details on the effectiveness of sea lice management at the Existing Site are provided in Section 4.3 above.

#### 4.7 Confirmation of removal and disposal of mortalities (Requested by: MSS)

There is no change proposed to the procedures for removal and disposal of mortalities currently in place at the Existing Site, these will be rolled out across the Replacement Site. A copy of the Fish Mortality Plan is provided as Appendix F.

#### 4.8 Farm Management Statement (Requested by: MSS, ABC and ABC MCDU)

The Farm Management Statement (FMS) for the Existing Site will be updated to take account of the Replacement Site. The FMS for the Existing Site as Appendix G, this document will be updated and

finalised following confirmation of the health status of the fish stocked into the site. SSC is the sole operator of marine salmon farms within CoGP Management Area M-45, therefore a FMA is not a requirement for this area. All SSC sites within Loch Striven are stocked, treated and fallowed synchronously. This will continue to be carried out across the operation of the Replacement Site.

#### **4.9 Bath treatment modelling report and an associated efficacy statement (Requested by: MSS)**

A bath treatment modelling report has been provided as Appendix J. This modelling report has been updated to reflect the amounts detailed in the draft SEPA CAR consent.

A SEPA CAR application, to modify the CAR licence at the Existing Site to account for the Replacement Site has been submitted and a draft licence received. The application is to amend the pen configuration, maximum biomass and in-feed and bath treatments at the site.

The bath treatment amounts detailed in the draft SEPA CAR consent are provided in Table 4.2 below.

Table 4.2 Bath treatment model outputs

Bath Treatments – Recommended Mass (g)	
Azamethiphos – 3 hours	366.6 g
Azamethiphos – 24 hours	68.8 g
Deltamethrin – 3 hours	24.9 g

An Efficacy Statement has been provided as Appendix E, and demonstrates that the bath treatment amounts proposed at the Replacement Site are sufficient to allow for efficacious treatments.

The modelling predicts sufficient consent for Alphamax for use as an efficacious and practical treatment substance for control of sea lice. Under current practices, consent for this product allows treatment of the whole site within 2 days, independent of resource, which is satisfactory under the SSC Sea Lice Management Strategy.

Practically, the site would treat 4 – 5 pens per day, so total treatment time would be 3 days. During periods of increased resource requirement, the treatment could be shortened by doing extended work shifts, aiming to treat 7 pens per day and thereby treating the site in 2 days.

The proposed consented amount of Azamethiphos is not enough to treat within a 24 hour period, however this is not anticipated to impact on the lice management capability at the Replacement Site, as there are other tools available.

#### **4.10 Details of how the impact of the additional pens and increased treatment times will be managed on site. (Requested by: MSS)**

The replacement of pens at Ardyne will not impact SSC's ability to manage sea lice at the site, or within the wider area. For Excis/ AMX, the site could treat 3 pens per 3 hours using a cone tarpaulin, and 7 pens per 3 hours with a wedge tarpaulin, independent of resource. Practically, the site would manage 4-5 pens per day, so total treatment time would be 3 days. During periods of increased resource requirement, the treatment could be shortened by doing extended work shifts, aiming to treat 7 pens per day and thereby treating the site in 2 days.

Extended treatment shifts can be employed in order to treat the site more quickly, and additional treatment resource can be hired where a risk of sea lice escalation is identified. Mechanical treatments can comfortably treat 5 pens per day on a normal shift pattern, so a total treatment time of 3 days with a mechanical boat.

The Efficacy Statement, provided as Appendix E, takes the additional pens into account and demonstrates that the modelled amounts are sufficient to treat the Replacement Site. The EMP (Appendix D) provides details on the resources that will be available to treat the sites within CoGP M-45, and contains a number of scenarios which might impact on ability to treat, and provides measures which would be taken to minimise any disruption to planned treatments.

#### **4.11 Full modelling (benthic, pollution, chemical and hydrographic) reports. (Requested by: ABC, ABC MCDU and SEPA)**

Information on depositional and bath treatment modelling is provided as Appendix J (this modelling report has been updated to reflect the amounts detailed in the draft CAR permit). A hydrographic report, based on data collected in 2019 and which has been used to inform the depositional modelling for the Replacement Site, is provided as Appendix K. Nutrient calculations have been undertaken, to assess potential impacts on the water column, and are provided as Appendix L.

#### **4.12 Full ECE (Equilibrium Concentration Enhancement) calculation. (Requested by: ABC, ABC MCDU and SEPA)**

A full ECE (Nutrient) calculation has been provided as Appendix L.

In general, the site is classed as moderately flushed, typical of an outer loch location and is considered suitable for a development of the size and nature proposed. Current direction at all depths varied with depth and the major axes were orientated south (170°) at the surface, north at midwater (360°) and north at the seabed (350°). Velocities were moderate with a maximum recorded velocity of 0.496 m/s (recorded at the sub-surface), and a re-suspension threshold of 9.5 cm/s was exceeded 20% of the time for the near-bed data. This indicates there will be moderate re-suspension at the site with some export of released solids from the grid. Current speed and direction showed clear 12.5 h periodicity at all depths and velocity showed clear spring neap variation. A summary report of hydrographic data gathered at the site is provided as Appendix K.

The ECE equation was developed by Marine Scotland for the Locational Guidelines for the Authorisation of Marine Fish Farms in Scottish Waters. The equation estimates the enhancement of nitrogen above background levels which occurs as a result of aquaculture, assuming that all the released nitrogen is conserved in the environment and only removed by tidal flushing. The ECE model considers dissolved nitrogen but also emissions of particulate nitrogen and nitrogen which has re-dissolved into the water column from the seabed.

- $ECE = S * M / Q$

Where:

- S = Source Rate (kg N T<sub>production-1</sub>)
- M = Total Consented Biomass (T)
- Q = Flushing Rate (m<sup>3</sup> yr<sup>-1</sup>)

Source rate is calculated through the budgets discussed above, and biomass is known, but to assess site specific nutrient enrichment, the hydrographic conditions of the loch system must also be considered. As the Replacement Site is located in an uncatagorised open water location, the Box Model Method has been used to determine flushing rate. In the Box Model, flushing time is assumed

as one day, which is considered appropriate based on the current speeds and distances in the area. The total volume of the low water area surrounding the Ardyne site (10 km<sup>2</sup>) is estimated at 193,951,106.9 m<sup>3</sup>, with a flushing time of one day. These values were used to calculate the flushing rate of the waters surrounding the Replacement Site as 70,797,154,011.2 m<sup>3</sup> yr<sup>-1</sup>. Full details on the calculations are provided in Appendix L.

The estimates of enhancement of nitrogen concentration should be assessed against quality standards. The SEPA Environmental Quality Standard (EQS) for dissolved available inorganic nitrogen is 168 µg/l (Working arrangement Requirements of Statutory Consultees (SEPA, SNH, MSS and the District Salmon Fisheries Boards) and consultation protocol for marine aquaculture planning applications, July 2010) and calculated ECE values should be assessed against this SEPA EQS. In addition, the Oslo & Paris Commission (OSPAR) and UKTAG recommends that Cumulative Enhancement values should be added to locally relevant worst case (winter) background concentrations to assess the risk of potential enrichment. OSPAR sets a quality standard criteria for nutrients at 50% above background, therefore the calculated cumulative ECE, added to background levels, should not be more than 50% of locally relevant background winter concentrations.

The ECE for the Existing Site (Table 4.3) is 0.97 µg L<sup>-1</sup>, representing 0.58 % of the SEPA EQS (168 µg L<sup>-1</sup>).

Table 4.3 ECE calculations for the Existing Site at Ardyne

Total Biomass	Budget	Source (kgN production)	Rate T <sup>-1</sup>	Flush Rate (m <sup>3</sup> yr <sup>-1</sup> )	ECE (kg m <sup>-3</sup> )	ECE µg L <sup>-1</sup>	% ECE of SEPA EQS
1198	Black		66.37	70792154011	0.0000011247	1.12	0.67
1198	OSPAR		57.63	70792154011	0.0000009773	0.98	0.58
1198	FRS		48.27	70792154011	0.0000008169	0.82	0.49
<b>AVERAGE</b>						0.97	0.58

The ECE for the Replacement Site is 1.68 µg L<sup>-1</sup> (Table 4.4), which equates to just 1.00% of the SEPA EQS (168 µg L<sup>-1</sup>).

Table 4.4 ECE calculations for the Replacement Site at Ardyne

Total Biomass	budget	Source (kgN production)	Rate T <sup>-1</sup>	Flush Rate (m <sup>3</sup> yr <sup>-1</sup> )	ECE (kg m <sup>-3</sup> )	ECE µg L <sup>-1</sup>	% ECE of SEPA EQS
2070	Black		66.37	70792154011	0.000001941	1.94	1.16
2070	OSPAR		57.63	70792154011	0.000001685	1.69	1.00
2070	FRS		48.2	70792154011	0.000001409	1.41	0.84
<b>AVERAGE</b>						1.68	1.00

In addition to the Existing Site, there are two other SSC sites operating in Loch Striven, to the north. These sites have not been considered in any cumulative assessment, as they are located outside the 10 km<sup>2</sup> area, used in the Box Model calculations.

#### 4.13 Final EMP (Requested by: ABC and ABC MCDU)

The final EMP has been provided as Appendix D. The EMP provides details on the proposed management measures and monitoring that will be used at the Replacement Site to reduce the potential risk posed to local wild salmonids.

**4.14 Mooring and pen coordinates, including maps detailing pen group and feed barge, and full details of underwater and navigational lighting. (Requested by: ABC and ABC MCDU)**

These details are provided in Appendix B of this application.

**4.15 Details of pre-application discussions undertaken with relevant stakeholders including; Argyll District Salmon Fisheries Board, and the West Coast Inshore Fisheries Group in the first instance. (Requested by: ABC)**

Pre-application discussions were held with the West Coast Regional Inshore Fisheries Group (WCRIFG), no feedback was provided by the WCRIFG by the time of submission.

SSC met with representatives of the CFA on 7<sup>th</sup> November 2018 and again on 19<sup>th</sup> June 2019, who confirmed there was commercial fishing activity in the surrounding area. A baseline navigation assessment has been undertaken for the site, which has provided further information on fishing activity in the surrounding area. This assessment was based on Vessel Monitoring System (VMS) and Automatic Identification System (AIS) data, and concluded that between one and two vessels passed within the proposed mooring area per day. The majority of these vessels were recreational. It is difficult to accurately determine the overall amount of fishing activity in the area given that smaller vessels are not fully represented on AIS and VMS. However, smaller creel boats are able to use the waters immediately surrounding the site, this occurs at a number of SSC sites, therefore any potential impact on creel boats is anticipated to be minimal. CFA have provided some anecdotal information on fishing tow locations, however no plotter data has been provided at the time of submission. The moorings for the Replacement Site have been designed as short as possible, to reduce the moorings area and potential interaction with commercial fishing activity.

Pre-application discussions were held with Argyll DSFB on 10<sup>th</sup> July 2019. Argyll DSFB have offered comment on the EMP and areas to be included in the Monitoring Strategy, in terms of assessing potential interactions with wild salmonids. SSC has considered these and amended the relevant documents, where appropriate. Since submitting their Scoping response to this development, Marine Scotland have outlined a number of factors that are recommended to be included in any EMP. The EMP submitted as supporting information for this application complies with these proposed recommendations.

**4.16 Landscape and Visual Impact Assessment with agreed Zones of Theoretical Visibility to define viewpoint locations. (Requested by: SNH, ABC and ABC MCDU)**

The development involves the removal of all existing pens and installation of 14 x 120 m circumference pens slightly to the south of the Existing Site. The pens will be equipped with bird nets, supported by bird net poles. As is the case with the Existing Site, the replacement pens will be linked to the shore-based feed system with individual feed pipes, which are dark in colour and will be arranged on the water surface. No further surface equipment will be required as part of this proposed development.

ABC requested that a Landscape and Visual Impact Assessment, with agreed Zones of Theoretical Visibility (ZTV) to define viewpoint locations, be provided, and that any development should consider/include: scaled diagrams and photomontages including pens, top nets and any other ancillary equipment.

A chartered Landscape Architect has undertaken a Seascape, Landscape and Visual Appraisal (SLVA) including preparation of a ZTV to define viewpoint locations. The viewpoints considered were agreed with ABC and SNH. These viewpoints, and the potential effects on them, are considered in the SLVA, provided as Appendix M.

The Replacement comprises a small relocation, and an increase in pen size (100 m circumference to 120 m circumference) and pen number (8 to 14). The pens will be equipped with bird nets, supported by bird net poles. No further surface equipment will be required as part of this proposed development.

It is considered that there will be no adverse landscape and visual effects, or adverse cumulative effects, arising as a result of the Replacement. Any predicted landscape, seascape or visual effects are considered to be neutral. This is due to the presence of the existing pens at the Ardyne fish farm as existing landscape/ seascape elements, the low-lying nature of the pens and the use of the same colour and design of pens as the existing fish farm.

The Existing Site is an established aquaculture activity in the area and is considered an appropriate site for development due to its location which is well placed in the transitional and busy seascape of the Sound of Rothesay, at the edge of Loch Striven, with a backdrop of the modified shore of Ardyne Point. The Replacement is a continuation of the existing established infrastructure and aquaculture activity at Ardyne Point.

## **5 STATEMENT OF PLANNING CASE**

### **5.1 Introduction**

Town and Country Planning (Scotland) Act 1997 (as amended) states that decisions on planning applications must be made in accordance with the Development Plan, unless material considerations indicate otherwise. The process for determining a planning application can be defined as:

- Identification and consideration of the relevant provisions within the Development Plan;
- Clarification of whether the Development is in accordance with Development Plan;
- Identification and consideration of relevant material considerations; and
- Conclusions on whether planning permission is justified.

This Section reviews the Site, its planning history, the key planning policies that are applicable to the Site, and any relevant material considerations. The aim of this Section is to establish the key implications of the Proposed Development and consider its compliance with the relevant policies in order to aid the Council during the determination process.

### **5.2 Site Location**

The Existing Site is located in the Sound of Rothesay, to the south of Loch Striven, in Argyll and Bute. The Replacement Site will extend approximately 365 m south of the Existing Site. The following figures, supplied with the application, illustrate the location of the Proposed Development.

- Figure 1: General Location
- Figure 2: Location Plan

### **5.3 Planning History**

The existing site was originally developed and operated by Murray Seafoods. As noted in Section 2.1 of this Statement, the existing site has been in operation for over 34 years, and therefore, all information regarding the original and associated planning applications, is not easily accessible.

The relevant planning history regarding the modification, replacement of the existing site under the Applicant's operation is below. This is an outline of all planning applications on the existing or proposed site since 2015:

Table 5.1 Planning History

Application	Description of Development	Decision
15/00304/SCRSCO	Replacement to marine fish farm	Opinion Issued
16/01320/MFF	Modification of fish farm from 8 x 100 m circumference cages to 12 x 100 m circumference cages including increase in extent of mooring area	Application Withdrawn
16/03426/MFF	Increase in extent of mooring area	Application Permitted
19/00335/SCRSCO	Screening and scoping request for replacement of existing Ardyne Marine Fish Farm – Removal of existing cages and replacing with 14 x 120 m circumference cages (feed barge/feed pipe may be installed)	Opinion Issued

#### 5.4 The Development Plan

The Development Plan is the primary consideration when determining planning applications, and forms the basis for the assessment of the Proposed Development in this Statement. The weight which is to be given to relevant material planning considerations is a matter for the merits of each planning application.

The Site falls under the jurisdiction of Argyll and Bute Council as the local planning authority, therefore the relevant statutory Development Plan comprises the Argyll and Bute Local Development Plan<sup>27</sup> ('the LDP') (adopted 26<sup>th</sup> March 2015), Supplementary Guidance (March 2016)<sup>28</sup> and Supplementary Guidance 2 (December 2016)<sup>29</sup>.

Argyll and Bute Council are working towards Local Development Plan 2, which is scheduled for adoption in 2020.

##### 5.4.1 Argyll and Bute Local Development Plan

The LDP is the primary document currently used to assess development proposals within the Argyll and Bute area. The plan sets out a "settlement strategy and spatial framework for how the Council wants to see Argyll and Bute develop to 2024 and beyond". A key purpose of the LDP is to inform developer applications during this time. The LDP sets out an overall vision for the area:

***The overall vision for Argyll and Bute is one of an economically successful, outward looking and highly adaptable area, which enjoys an outstanding natural and historic environment, where all people, working together, are able to meet their full potential and essential needs, locally as far as practicable, without prejudicing the quality of life of future generations.***

The LDP contains nine key objectives for achieving the overall vision, amongst which is "to support the continued diversification and sustainable growth of Argyll and Bute's economy with a particular focus

<sup>27</sup> Argyll and Bute Local Development Plan (March 2015) [Online]. Available at: [https://www.argyll-bute.gov.uk/sites/default/files/written\\_statement\\_0.pdf](https://www.argyll-bute.gov.uk/sites/default/files/written_statement_0.pdf) (Accessed 04/09/2019)

<sup>28</sup> Argyll and Bute Local Development Plan Supplementary Guidance (March 2016) Available at: [https://www.argyll-bute.gov.uk/sites/default/files/Unknown/supplementary\\_guidance\\_adopted\\_march\\_2016\\_env\\_9\\_added\\_june\\_2016.pdf](https://www.argyll-bute.gov.uk/sites/default/files/Unknown/supplementary_guidance_adopted_march_2016_env_9_added_june_2016.pdf) (accessed 04/09/2019)

<sup>29</sup> Argyll and Bute Local Development Plan Supplementary Guidance (March 2016) Available at: [https://www.argyll-bute.gov.uk/sites/default/files/supplementary\\_guidance\\_2\\_document\\_adopted\\_december\\_2016\\_3.pdf](https://www.argyll-bute.gov.uk/sites/default/files/supplementary_guidance_2_document_adopted_december_2016_3.pdf) (accessed 04/09/2019)

*on our sustainable assets in terms of renewables, tourism, forestry, food and drink, including agriculture, fishing, aquaculture and whisky production”.*

The Council recognise that the sustainable growth and management of fishing and aquaculture is crucial to the economic future of the area, and if addressed in a suitable, sustainable and well-designed way, with regard for best practice principles, there should be no reason not to endorse quality sites.

Concurrent with the policies contained within the LDP, and relevant to the assessment of the Application, are the policies contained within the Supplementary Guidance (‘SG’) documents, which accompany the LDP. Sections 5.4.1.2 – 5.4.1.8 of this Statement addresses compliance with the relevant policies of the LDP, whilst Sections 5.4.2.1 – 5.4.2.7 addresses policies within the SG.

#### 5.4.1.1 Relevant Policies

Consideration has been given to the relevant policies contained within the LDP and SG during the design of the Proposed Development. Individual policies are not always quoted in full, however certain relevant extract may be quoted. The following LDP policies are relevant to the Proposed Development:

- Policy LDP STRAT 1: Sustainable Development;
- Policy LDP DM 1: Development within the Development Management Zones
- LDP PROP 3: The Proposed Potential Development Areas
- Policy LDP 3: Supporting the Protection, Conservation and Enhancement of the Environment;
- Policy LDP 4: Supporting the Sustainable Development of our Coastal Zone;
- Policy LDP 5: Supporting the Sustainable Growth of Our Economy; and
- Policy LDP 9: Development Setting, Layout and Design;

#### 5.4.1.2 Policy LDP STRAT 1: Sustainable Development

Policy LDP STRAT 1 states that in preparing new development proposals, developers should seek to demonstrate the following sustainable principles (omitted if not relevant), which the Council will use to determine whether or not to grant planning permission:

- a) Maximise the opportunity for local community benefit;**
- b) Maximise the opportunities for sustainable forms of design including minimising waste, reducing our carbon footprint and increasing energy efficiency;**
- c) Conserve and enhance the natural and built environment and avoid significant adverse impacts on biodiversity, natural and built heritage resources;**
- d) Respect the landscape character of an area and the setting and character of settlements;**
- f) Avoid having significant adverse impacts on land, air and water environment.**

Policy LDP STRAT 1 does not contain a test against which compliance can be judged, but rather sets out guiding principles and allows for judgement on a case by case basis.

Addressing each of the relevant principles individually, the community benefit of the Proposed Development is an economic and employment benefit tied to the sustainable growth of the aquaculture industry in rural, coastal communities.

Discussion and refinement of the design specifications has taken place throughout the pre-application process, and the Applicant has been very receptive to maximising the sustainability and efficiency of the Proposed Development. Details of the design specifications can be found in Section 2 of this statement and in the accompanying figures.

It is considered, as a result of the EIA screening and scoping opinions that no significant adverse impact on “biodiversity, natural and built heritage resources” would exist as a result of the Proposed Development. Any impact would likely be similar to the Existing Site, which would be removed as part of this proposal.

Similarly, there is no reason to expect that any change to the landscape character area would occur by replacing the Existing Site.

As noted in the screening and scoping response by the Council, it is expected that any significant environmental effects are likely to be mitigated. Given that the Proposal includes removing the Existing Site, the environmental impact of the development must be assessed in that context. It is not a matter of assessing the environmental impact of a new site against no development, but rather as an assessment of the new development against the Existing Site; the removal of which is tied to the application for the Proposed Development.

In addressing the relevant principles of Policy LDP STRAT 1, it is the consideration of the Applicant that the Proposed Development **accords** with Policy **LDP STRAT 1**.

#### 5.4.1.3 Policy LDP DM 1: Development within the Development Management Zones

As per the LDP, there are seven ‘Development Management Zones’:

- Main Towns and Key Settlements;
- Key Rural Settlements;
- Villages and Minor Settlements;
- Countryside Zone;
- Rural Opportunity Areas;
- Very Sensitive Countryside; and
- Greenbelt.

Policy LDP DM 1 guides development principles in each of these zones. The Proposed Development Area abuts a section of coastline defined as ‘Countryside Zone’. Within Policy LDP DM 1, “encouragement shall be given to sustainable forms of development as follows”:

***Within the Countryside Zone up to small scale on appropriate infill, rounding off and redevelopment sites and changes of use of existing building. In exceptional cases development in open countryside up to and including large scale may be supported on appropriate sites if this accords with ACE. There is a presumption against development that seeks to extend an existing settlement into the Countryside Zone.***

As is expected with development management policies, and any policies that do not specifically relate to marine interest, Policy LDP DM 1 is mostly a consideration of land use development; however, considering that the development adjoins land defined as a ‘Countryside Zone’, it is relevant to interpret this policy and make a determination regarding the Development’s compliance.

In the context of Policy LDP DM 1, it is considered that suitable and sustainable replacement of an adjacent site is in-keeping with the principles of rounding off and redevelopment.

This Policy also directs developers towards the SG LDP ACE 1, however it is not considered that the Proposed Development meets the criteria for which an Area Capacity Evaluation (‘ACE’) would be required, as outlined in the SG.

It is considered that Policy LDP DM 1 is not a policy against which strict compliance can be tested as it is more of a guiding principle policy; insofar as proposals that do match fit the criteria of development within the Development Management Zones, are simply not actively encouraged. Despite this, it is

considered that, in abutting a coastline allocated as ‘Countryside Zone’ and proposing sustainably replacing an existing site, that the Proposed Development accords with **Policy LDP DM 1**.

#### 5.4.1.4 LDP PROP 3 – The Proposed Potential Development Areas

Sites designated as ‘Potential Development Areas’ under LDP PROP 3 are described in the supporting text:

***The LDP also identifies Potential Development Areas (PDAs). PDAs are areas where specific development opportunities may be supported through the life of this LDP where known constraints can be overcome. Mini development briefs have been prepared for each PDA which forms part of the Supplementary Guidance (SG) that accompanies the plan. The briefs identify the use or range of uses considered appropriate, the constraints that need to be resolved and the main LDP policies and SG that need to be taken into account. The PDAs, proposed under LDP PROP 3, are listed in the schedule of the Written Statement and mapped in the Proposals Maps.***

Under LDP PROP 3, the Site is allocated as PDA 2/43; and, in Chapter 8 of the LDP, PDA 2/43 is considered for the following: “Mixed use – tourism/business/leisure/housing/marine/aquaculture related”.

Acknowledging the location as a Potential Development Area (PDA) for the aquaculture industry is a strong endorsement of the Proposed Development, and in particular the Site has been brought forward in the correct way with a wealth of evidence as to its suitability and sustainability.

#### 5.4.1.5 Policy LDP 3: Supporting the Protection, Conservation and Enhancement of our Environment

Policy LDP 3 states that a development proposal will not be supported when it:

- ***Does not protect, conserve or where possible enhance biodiversity, geodiversity, soils and peat, woodland, green networks, wild land, water environment and the marine environment;***
- ***Does not protect, conserve or where possible enhance:***
  - I. The established character and local distinctiveness of the landscape and seascape in terms of its location, scale, form and design; and***
  - II. The ‘Dark Skies’ status of the Isle of Coll***
- ***Does not protect, conserve or where possible enhance the established character of the built environment in terms of its location, scale, form and design;***
- ***Has not been ascertained that it will avoid adverse effects, including cumulative effects, on the integrity or special qualities of international or nationally designated natural and built environment sites;***
- ***Further information and detail on matters relating to the natural environment, landscape, and the historic environment will be provided Supplementary Guidance;***
- ***Has significant adverse effects, including cumulative effects, on the special qualities or integrity of locally designated natural and built environment sites.***

Regarding the Proposed Development, the relevant criteria of Policy LDP 3 are considered to be whether the development proposal protects, conserves or enhances: water and marine environments, seascape character, and the character of the built environment; and whether the Proposed Development will adversely affect designated natural and built environment sites.

The requirement to “protect, conserve or where possible enhance” the water and marine environment is considered to be a matter that is addressed through the comprehensive Environmental Management Plan (EMP), provided with the Application.

In producing a EMP that covers all of the Scottish Salmon Company sites in Loch Striven (Strone, Sgian Dubh and the Proposed Development Site), this Application consolidates and enhances the environmental management position within the loch; while the replacement of the Existing Site is considered to conserve the use of the surrounding area, and its environmental impact.

Due to its appropriate location, scale, form and design; as influenced by the statutory consultee responses in the Screening and Scoping Opinion, there is capacity to accommodate the Development, as concluded in the SLVA:

***Therefore, it is considered within the context of the existing fish farm, the characteristics of the local coastline and medium to large scale of the receiving landscape, the receiving landscape and seascape have the capacity to accommodate the proposed Replacement.***

In considering compliance with Policy LDP 3 in regards to natural and built environment, the Applicant cites the consultation response from Scottish Natural Heritage ('SNH') in the Screening and Scoping Opinion which states:

***No designated sites are likely to be impacted by this proposal...***

***The site is located outwith the Kyles of Bute National Scenic Area.***

***We recognise that the site is well established in the area and that although there will be an increase in cage size and number, the proposed re-alignment is in accordance with SNH's revised guidance on the siting and design of aquaculture developments. We are therefore satisfied that the development will not adversely affect the integrity of the NSA or result in significant visual intrusion from key viewpoints in the surrounding landscape.***

Furthermore, the SVLA identifies nearby listed buildings within the 5 km study area and considers that the landscape effects on the Rothesay Conservation Area and listed buildings would be **negligible**. An assessment of the Proposed Development against the policies of the relevant SG, as required by Policy LDP 3, is provided in Section 5.4.2 of this Statement.

It is considered that the Proposed Development fully **accords** with **Policy LDP 3**.

#### 5.4.1.6 Policy LDP 4: Supporting the Sustainable Development of our Coastal Zone

Policy LDP 4 states:

***Argyll and Bute Council will support onshore proposals for the sustainable development of our coastal zone. Further information and detail in relation to a coastal development strategy and other matters relating to castle development will be provided in Supplementary Guidance.***

In the justification for this policy, the Council go on to state:

***Development in the renewable energy and aquaculture sectors have increased the focus on coastal and offshore areas with a likely increasing need for coastline locations for associated facilities. This policy recognises the significant economic potential of the coast and promotes the sustainable development of the coastal zone.***

The Applicant addresses the relevant Supplementary Guidance in Sections 5.4.2.1-5.4.2.7. However, it is considered that the LDP allocation of the Site as a 'Potential Development Area' under LDP PROP 3, is an indication of the Council's consideration of the Site as a sustainable location for aquaculture development and an appropriate development of the coastal zone. Furthermore, the Policy takes account of economic benefits that come from industry development. It is considered in this context, that the Proposed Development fully **accords** with **Policy LDP 4**.

#### 5.4.1.7 Policy LDP 5: Supporting the Sustainable Growth of Our Economy

Policy LDP5 states that Argyll and Bute Council will support the development of new industry which helps to deliver sustainable economic growth throughout the area by:

- Taking account of the economic benefit of any proposed development;
- Ensuring that the different spatial needs and locational requirements of the various sectors and scales of business are able to be met within the context of the settlement and spatial strategy;
- Focussing regeneration activity and promoting environmental enhancement; and by
- Safeguarding existing industrial and business areas for employment uses.

Within this Policy, the Council go on to state that priority will be given to business and industrial allocations, and direct potential developers towards the relevant supplementary guidance documents.

It is noted that the Site is allocated as a 'Potential Development Area' (PDA 2/43) in the Local Development Plan.

Certain aspects of Policy LDP 5 are considered to be written, specifically with on-shore development in mind. It is considered that 'settlement and spatial strategy', 'regeneration activity', and 'safeguarding existing industrial and business uses for employment uses' are not applicable to aquaculture development. Therefore, compliance with Policy LDP 5 is determined against the applicable aspects of the Policy, which are considered as follows:

- The economic benefit of the development;
- Not jeopardising other industrial or business use; and
- Promoting environmental enhancement.

The Proposed Development brings with it, employment opportunities, both on site and in the production phase. Site production generates increased value to the area and the industry, which is undoubtedly considered beneficial.

Other than the Existing Site, which is proposed to be replaced under this Application, there is no existing industry of which to take account that would be impacted by consenting the Proposed Development. The replacement of the existing Ardyne site and its governance under an up-to-date Environmental Management Plan ('EMP'), drafted and submitted with the Application (Appendix D), provides the scope for improved environmental management.

Therefore, within the context of the relevant aspects of the Policy, the Proposed Development is considered to fully **accord** with **Policy LDP 5**.

#### 5.4.1.8 Policy LDP 9: Development Setting, Layout and Design

Policy LDP 9 states that "the Council will require developers and their agents to produce and execute a high standard of appropriate design" under the following headings:

- Development Setting;
- Development Layout and Density; and
- Development Design.

Given its location in relation to the Existing Site, there is no viable argument that the Proposed Development does not take account of the context within which it is located. It is an offshore site being proposed as a replacement of an existing marine fish farm, adjacent to the Existing Site.

The relevant criteria with which to regard layout and density is that the layout will take account of the location and sensitivity of the area. For assessment of this, this Statement relies on the conclusions of

the Seascape, Landscape and Visual Appraisal (SLVA). Using the existing farm site as a baseline for the assessment of visual impact, the SLVA concludes that the impact of the views from the Proposed Development would predominantly be negligible, with some negligible-minor, and minor-moderate effects.

The design of the development has regards for the surroundings, as well as operating efficiently and sustainably. Section 2.3 of this statement and the relevant appendices highlight the design aspects of the development.

In this regard, it is considered that the Proposed Development fully **accords** with **Policy LDP 9**.

#### 5.4.2 *Supplementary Guidance*

The Argyll and Bute Council Local Development Plan Supplementary Guidance was adopted in March of 2016, and provides additional and more specific polices. The following policies of the Supplementary Guidance are considered to be relevant to the determination of this Application:

- SG LDP ENV 1: Development Impact on Habitats, Species and our Biodiversity;
- SG LDP ENV 7: Water Quality and the Environment;
- SG LDP ENV 12: Development Impact on National Scenic Areas (NSAs);
- SG LDP ENV 13: Development Impact on Areas of Panoramic Quality (APQs); and
- SG LDP ENV 14: Landscape.

Compliance with these policies is assessed in Sections 5.4.2.1-5.4.2.5.

Supplementary Guidance 2, which covers coastal development, piers and harbours, aquaculture and renewable energy was adopted by Argyll and Bute Council in December 2016. The relevant policies contained within are as follows:

- SG LDP CST 1: Coastal Development; and
- SG LDP AQUA 1: Aquaculture Development.

Compliance with these policies is assessed in Sections 5.4.2.6-5.4.2.7.

##### 5.4.2.1 *SG LDP ENV 1: Development Impacts of Habitats, Species and Our Biodiversity*

Supplementary Guidance policy SG LDP ENV 1 is intended to provide additional detail to Policy LDP 3: 'Supporting the Protection, Conservation and Enhancement of our Environment' (addressed in Section 5.4.1.5 of this Statement).

SG LDP ENV 1 states that the Council will give consideration to legislation, policies and conservation objectives within the following:

- ***Habitats and Species listed under Annex I, II & IV of the Habitats Directive;***
- ***Species listed under Annex I & II of the Birds Directive and Red and Amber status in 'Birds of Conservation Concern';***
- ***Article 10 Features under the Habitats Directive;***
- ***Wildlife and Countryside Act 1981; (and as amended by the Nature Conservation (Scotland) Act 2004); Species listed on Schedules 1, 5, 7, 8, 9 and 14;***
- ***Wildlife and Natural Environment (Scotland) Act 2011. A Code of Practice on Non-Native Species supports this Act; and***
- ***Protection of Badgers Act 1992.***

SG LDP ENV 1 goes on to state that:

***When considering development proposals the Council will also seek to contribute to the delivery of objectives and targets set by the Local Biodiversity Action Plan (LBAP) and the Scottish Biodiversity Strategy.***

And:

***Development proposals which are likely to have an adverse effect on protected species and habitats will only be permitted where it can be justified in accordance with the relevant protected species legislation.***

Atlantic salmon is listed under Annex II of the Habitats Directive, whilst species listed in Table 4.1 of this Statement, seen on site, are listed under various legislative protections.

It is noted that, during the Screening and Scoping stage of the Proposed Development, further information was requested by Marine Scotland Science ('MSS') regarding the impact on Atlantic salmon. The Applicant has, in providing the appended EMP and attestations, addressed these requests. Further management information has been provided with this Application.

As per the response from MSS, the Loch system supports migratory salmonid species (sea trout and Atlantic salmon). This Statement relies on the technical information contained within the appendices to demonstrate the mitigation measures in place to ensure that the development will not result in likely significant effects on protected species and habitats listed in the above regulations and legislations.

SG LDP ENV 1 guides the Council in its application of Policy LDP 3. The Applicant considers that the Proposed Development accords with the principles of SG LDP ENV 1, insofar as, if it were applied to the judgment of Policy LDP 3, full compliance with the LDP policies on environmental protection, conservation and enhancement would be demonstrated, including SG LDP ENV 1.

#### *5.4.2.2 SG LDP ENV 7: Water Quality and the Environment*

Policy SG LDP ENV 7 is written to provide additional detail to Policy LDP 3 and states that proposals for development that could affect the water environment will be assessed with regard to their potential impact on:

- ***Water quality and quantity, ecological status including morphology and flow rate;***
- ***Riparian habitats and wildlife;***
- ***Geomorphic processes;***
- ***Leisure and recreational facilities and users;***
- ***Economic activity;***
- ***The resources protected by Policy LDP 3 – Supporting the Protection, Conservation and Enhancement of our Environment and other relevant Local Development Plan policies and SG.***

Policy SG LDP ENV 7 also states that developments that have a detrimental impact to the water environment will not be permitted unless it can be demonstrated that the impacts can be fully mitigated.

A CAR licence is in place for the existing site, and the Applicant has applied to SEPA for an updated, varied CAR licence (CAR/L/1000808) for the Proposed Development. As outlined in Chapter 4, the CAR licence will address the potential impact of the Proposed Development. This, along with good management and husbandry practices, and the context of the proposal being a replacement of the Existing Site, demonstrates the Proposed Development's **accordance** with **Policy SG LDP ENV 7**.

#### 5.4.2.3 SG LDP ENV 12: Development Impact on National Scenic Areas (NSAs)

Policy SG LDP ENV 12 states the Council will resist any development that would have an adverse effect on the integrity of National Scenic Areas unless it is adequately demonstrated that any significant adverse effects on the landscape quality for which the area has been designated are clearly outweighed by social, environmental or economic benefits of national importance.

The Kyles of Bute National Scenic Area (NSA) is located approximately 4 km to the north west of the site. This Statement refers to the assessment of impact on the NSA, included in the Seascape, Landscape and Visual Appraisal (SLVA), which concludes that Proposed Development would not detract from the overall existing landscape quality, features and characteristics of the Kyles of Bute National Scenic Area. The SLVA considers that the seascape effects would be negligible, adverse but reversible, and there would be no discernible improvement or deterioration to the existing seascape character. Therefore, it is considered that the Proposed Development **accords** with **Policy SG LDP ENV 12**.

#### 5.4.2.4 SG LDP ENV 13: Development Impact on Areas of Panoramic Quality (APQs)

Policy SG LDP ENV 13 is intended to supplement policy LDP 3, and states that the Council will resist development in, or affecting, an Area of Panoramic Quality where its scale, location or design will have a significant adverse impact on the character of the landscape unless it is adequately demonstrated that:

- (A) Any significant adverse effects on the landscape quality for which the area has been designated are clearly outweighed by social, economic or environmental benefits of community wide importance;**

This Policy also states that appropriate locations, siting, design, landscaping, boundary treatments and materials, and detailing will be required for potential development within the Areas of Panoramic Quality.

The Applicant refers to the evidence provided in the SLVA, which assesses the impact of the Proposed Development on the Bute and South Cowal APQ (approximately 0.4 km away from the Site). The conclusions reached in the SLVA state that the landscape effects would be negligible, adverse but reversible, and there would be no discernible improvement or deterioration to the existing seascape character.

#### 5.4.2.5 SG LDP ENV 14: Landscape

Policy SG LDP ENV 14 is intended to supplement policy LDP 3, and states that:

***Outwith National Scenic Areas and Areas of Panoramic Quality, Argyll and Bute Council will consider landscape impact when assessing development proposals, and will resist development when its scale, location or design will have a significant adverse impact on the character of the landscape unless it is demonstrated that:***

- (A) Any such effects on the landscape quality are clearly outweighed by social, economic or environmental benefits of community wide importance; and***
- (B) The Council is satisfied that all possible mitigation measures have been incorporated into the development proposal to minimise adverse effects.***

***Development will be expected to be consistent with Policy LDP 9 – Development Setting, Layout and Design, associated SG.***

This Statement relies on the conclusions of the SLVA regarding the relation to and impact upon the relevant Landscape Character Types (LCTs) and Seascape Character Areas (SCAs).

Section 7.3 of SLVA concludes the following with regards to the relevant Landscape Character Types:

- **LCT 46: Rolling Farmland with Estates** – The landscape effects would be negligible, adverse but reversible, and there would be no discernible improvement or deterioration to the existing landscape character of the Rolling Farmland with Estates LCT.
- **LCT 38: Open Ridges** – The landscape effects would be negligible, adverse but reversible, and there would be no discernible improvement or deterioration to the existing landscape character of the Open Ridges LCT.
- **LCT 34: Steep Ridges & Mountains** – The landscape effects would be negligible, adverse but reversible, and there would be no discernible improvement or deterioration to the existing landscape character of the Steep Ridges and Mountains LCT.
- The landscape effects would be negligible - minor, adverse but reversible, and there would be no discernible improvement or deterioration to the existing landscape character of the local landscape.

Section 7.4 of the SLVA reaches the following conclusions with regards to the impact upon relevant Seascape Character Areas:

- **Rothesay Sound Seascape Character Area** – The seascape effects would be negligible – minor, adverse but reversible, and there would be no discernible improvement or deterioration to the existing seascape character.
- **Loch Striven Seascape Character Area** – The seascape effects would be negligible-minor, adverse but reversible, and there would be no discernible improvement or deterioration to the existing seascape character.
- **Kyles of Bute Seascape Character Area** – The seascape effects would be negligible, adverse but reversible, and there would be no discernible improvement or deterioration to the existing seascape character.

The Applicant purports that the evidence provided within the SLVA assessments demonstrate comprehensively that the Proposed Development **accords** with **Policy SG LDP ENV 14**.

#### 5.4.2.6 SG LDP CST 1: Coastal Development

Policy SG LDP CST 1 is intended to supplement Local Development Plan policies LDP 4, LDP 5 and DM 1. This Policy seeks to support the sustainable development of onshore coastal areas by safeguarding their special environmental and/or cultural qualities. In such instances where a development proposal will have an impact on the coast, it will be required:

- ***To demonstrate that any positive or negative impacts on the ecological status of coastal and transitional water bodies and coastal processes have been addressed to the planning authorities satisfaction; AND***
- ***To assess the proposal against the conservation objectives of any affected Marine Protected Area and national status of Priority Marine Features; AND***
- ***To assess the proposal's impact on existing marine and coastal commercial and recreational activity; AND***
- ***To demonstrate that the National Marine Plan, and relevant Regional Marine Plans and Council adopted local ICZM and marine plans have been taken into account.***

The Applicant notes that, during the Screening and Scoping stage, comments from Statutory Consultees raised no significant concerns regarding impact ecological and environmental impact; and where further information was required this was readily provided.

Through the EMP and good husbandry practices, and in the context of replacing the existing site, the Proposed Development would not negatively impact any of the criteria within this Policy. It is therefore considered that the Proposed Development fully **accords** with **Policy SG LDP CST1**.

#### 5.4.2.7 SG LDP AQUA 1: Aquaculture Development

Policy SG LDP AQUA 1 states that, in determining proposals, the Council will consider positive and negative effects relating to both the locational and operational characteristics of the development on the following criteria:

- ***Landscape/seascape and visual amenity;***
- ***Isolated coast and wild land;***
- ***Historic or archaeological sites & their settings;***
- ***Priority habitats/species (including wild migratory salmonids) and designated sites for nature conservation;***
- ***Ecological status of water bodies and biological carrying capacity;***
- ***Commercial and recreational activity;***
- ***Amenity, arising from operational effects (waste, noise, light and odour);***
- ***Economic impact.***

Policy SG LDP AQUA 1 also states that aquaculture proposals will be supported if significant adverse effects in relation to locational characteristics of the development are avoided; and the risk of potential impacts relating to the operation of the site can be minimised or mitigated.

The final relevant aspect of Policy SG LDP AQUA 1 states that consolidating or rationalising existing development sites will be supported if they can demonstrate that they have considered the following:

- ***Any available spatial guidance on areas that are most/least suitable for development;***
- ***Potential environmental benefits, including landscape, habitats and species and wild migratory salmonids;***
- ***Potential benefits in terms of site management, including disease control and escapes;***
- ***Potential benefits to communities and commercial and recreational activities; and***
- ***Increased economic viability and socio-economic benefits.***

The Applicant has demonstrated compliance with the relevant requirements of SG LDP AQUA 1 by the following criteria:

- ***The allocation of the site as a Potential Development Area under LDP PROP 3;***
- ***The submission of a loch-wide EMP to consolidate and improve the environmental management position over several sites;***
- ***The Proposed Development is considered a replacement of the Existing Site;***
- ***The conclusions of the SLVA that the Proposed Development would result in negligible, adverse but reversible effects on landscapes and seascapes;***
- ***Economic and employment benefits arising from sustainable industry growth; and***
- ***Extensive mitigation and management plans that have been produced and submitted as part of this Application.***

## 5.5 National Planning Position

### 5.5.1 Scottish Planning Policy (2014)<sup>30</sup>

Scottish Planning Policy (SPP) sets out national planning policies which reflect the Scottish Ministers' priorities for the operation of the planning system and for development and use of land. SPP promotes consistency in the application of policy across Scotland whilst allowing sufficient flexibility to reflect local circumstances. SPP is a material consideration in the determination process for planning applications. SPP highlights the Scottish Government's support for the sustainable growth of the

<sup>30</sup> Scottish Government (2014). Scottish Planning Policy [Online]. Available at: <https://www.gov.scot/Resource/0045/00453827.pdf> (accessed 16/09/2019)

aquaculture sector and the significant contribution it makes to the Scottish economy, particularly for coastal and island communities.

In relation to supporting aquaculture the key policy principles listed are that the planning system should:

- Play a supporting role in the sustainable growth of the finfish and shellfish sectors to ensure that the aquaculture industry is diverse, competitive and economically viable;
- Guide development to coastal locations that best suit industry needs with due regard to the environment; and
- Maintain a presumption against further finfish farm development on the north and east coasts to safeguard migratory fish.

SPP is a non-statutory document which sets out the Scottish Government's policy on land use planning and therefore should be afforded significant weight in the determination process for planning applications.

The Proposed Development is considered to fully comply with the principles of the SPP, as it will contribute to the sustainable growth of the aquaculture industry, leaving minimal effects on the environment and amenity.

#### 5.5.2 National Planning Framework 3 (2014)<sup>31</sup>

National Planning Framework 3 (NPF3) is a statutory document and is the most recent expression of Scottish Government strategy for long-term spatial development. Its findings, including its reiteration of support for growth of the aquaculture sector, should be afforded significant weight in the determination of planning applications.

Paragraph 2.36, under the heading 'A sustainable, successful place', aquaculture is identified as '*...an important aspect of the economy across parts of coastal Scotland supporting many jobs – often in small communities – and representing a significant element of Scotland's exports. The industry has identified ambitious growth targets which we want to see realised.*'

NPF3 identifies that support for the sustainable growth of the aquaculture sector, including through the work of the Ministerial Group for Sustainable Aquaculture, is a key long-term goal for the Scottish Government. The Development is considered to fully accord with this policy goal by expanding and diversifying the aquaculture industry.

#### 5.5.3 Scotland's National Marine Plan (2015)<sup>32</sup>

Scotland's National Marine Plan was introduced in April 2015 and was prepared in accordance with EU Directive 2014/89/EU of July 2014. The Plan provides a single overarching framework for managing activities within both inshore and offshore waters for the protection of the environment. In regard to aquaculture, the Plan states that aquaculture "*has potential to contribute to future community cohesion by providing high quality jobs in rural areas and help to maintain community infrastructures such as schools, ferries and other services*".

The National Marine Plan contains 14 policies relating to aquaculture, those directly relevant to the Proposed Development are:

- ***Aquaculture 1: Marine planners and decision makers should seek to identify appropriate locations for future aquaculture development and use, including the potential use of***

<sup>31</sup> Scottish Government (2014). National Planning Framework 3 [Online]. Available at: <https://www.gov.scot/Resource/0045/00453683.pdf> (accessed 16/09/2019)

<sup>32</sup> Marine Scotland (2015). Scotland's National Marine Plan [Online]. Available at: <https://www.gov.scot/Publications/2015/03/6517/downloads#res-1> (accessed 16/09/2019)

**development planning briefs as appropriate.** The site is identified in the LDP PROP 3 as a Proposed Potential Development Area.

- **Aquaculture 3: In relation to nutrient enhancement and benthic impacts, as set out under Locational Guidelines for Authorisation of Marine Fish Farms in Scottish Waters, fish farm development is likely to be acceptable in Category 3 areas subject to other criteria being satisfied.** Loch Striven is categorised as a Category 3 area by Marine Scotland Science<sup>33</sup>, and is therefore considered to be an acceptable location for fish farm development.
- **Aquaculture 5: Aquaculture developments should avoid and/or mitigate adverse impacts upon the seascape, landscape and visual amenity of an area, following SNH guidance on siting and design of aquaculture** (Addressed in Section 4).
- **Aquaculture 7: Operators and regulators should continue to utilise a risk based approach to the location of fish farms and impacts on wild fish** (Addressed in Section 4).
- **Aquaculture 8: Guidance on harassment at designated seal haul out sites should be taken into account and seal conservation areas should be taken into account in site selection and operation. Seal licences will only be granted when other management options are precluded or have proven unsuccessful in deterrence** (Addressed in Section 4).
- **Aquaculture 9: Consenting and licensing authorities should be satisfied that appropriate emergency response plans are in place** (the emergency response plan forms part of EMP submitted alongside the Application).
- **Aquaculture 10: Operators should carry out pre-application discussion and consultation, and engage with local communities and others who may be affected to identify and, where possible, address any concerns in advance of submitting an application** (Addressed in Section 3).

## 5.6 Material Considerations

### 5.6.1 A Fresh Start: The Renewed Strategic Framework for Scottish Aquaculture (2009)

The renewed Strategic Framework for Scottish Aquaculture<sup>34</sup>, published by the Scottish Government in 2009, sets out the shared vision of the Ministerial Working Group on Aquaculture for the sustainable growth of the industry and provides a platform to ensure a strong future for the industry in Scotland. It has five key themes:

- Healthier fish and shellfish;
- Improved systems for licensing aquaculture and development;
- Improved containment;
- Better marketing and improved image;
- Improved access to finance.

Issues and desired outcomes are identified under each theme. The framework also sets out a more flexible approach for delivery through a smaller Ministerial Group on Aquaculture.

### 5.6.2 Supporting Aquaculture Growth and Protecting Scotland's Environment (2017)

The joint ministerial statement<sup>35</sup> published by the Scottish Government confirms that aquaculture is a key contributor to Scotland's rural economy. It provides employment and investment, particularly

<sup>33</sup> Marine Scotland Science (2018) Locational Guidelines for the Authorisation of Marine Fish Farms in Scottish Waters [Online] Available at: <https://www2.gov.scot/Resource/0054/00544259.pdf> (accessed 20/02/2019)

<sup>34</sup> Scottish Government (2009). A Fresh Start: The renewed strategic framework for Scottish aquaculture [Online] Available at: <https://www.gov.scot/Resource/Doc/272866.pdf> (Accessed 03/06/2019)

<sup>35</sup> Scottish Government (2017). Supporting Aquaculture Growth and Protecting Scotland's Environment [Online]. Available at: <https://www2.gov.scot/Topics/marine/Fish-Shellfish/MinStatement> (Accessed 03/06/2019)

in some of the most remote coastal communities. The Scottish Government also recognises that a sustainable aquaculture sector is a carbon efficient means of producing animal protein and contributes to national food security. The policy statement sets out how the Scottish Government and its agencies will work constructively with the sector, and others, to operate a policy framework to enable sustainable growth whilst balancing economic, environmental and social responsibilities. In particular, the Scottish Government will promote:

- Low-impact production systems which manage fish health challenges and enable continued growth while protecting marine ecology; and
- Collaborative and constructive relationships between the sector and its neighbours.

### 5.6.3 *Aquaculture Growth to 2030 (2016)*

The Scottish Government supports the delivery of the Aquaculture Industry Leadership Group growth strategy<sup>36</sup> which aims to double the economic contribution of the sector from £1.8 billion in 2016 to £3.6 billion by 2030 and double the number of jobs to 18,000 over the same timeframe. TO achieve these aims, the strategic priorities for the sector area identified and 20 specific actions are recommended. The delivery of these 20 recommendations should permit the sector to achieve significant long term social and economic benefits for Scotland.

### 5.6.4 *Clyde Regional Marine Plan*

A pre-consultation on the draft of the Clyde Regional Marine Plan<sup>37</sup> ('CRMP') took place between 18<sup>th</sup> March and 27<sup>th</sup> May 2019. The CRMP contains 11 strategic aims for supporting development and community engagement; and 5 guiding principles which act as a top-level filter for policy development.

It is noted that as the CRMP is not an adopted document, minimal determining weight can be given to the policies contained within; however, regard can be had for the aquaculture objectives and proposed policies contained within, insofar as it provides information on the proposed position of regional aquaculture. The 2 key objectives are as follows:

- Enable the sustainable development and diversification of the aquaculture sector within the carrying capacity of the Clyde Marine Region, providing socio-economic benefits to rural areas and islands and supporting the wider supply chain in Scotland.
- Aquaculture sites in the Clyde Marine Region contribute to research & development initiatives which support sustainable development of the sector and aim to contribute to the protection and enhancement of the marine environment.

The relevant draft aquaculture policy guidance contained within the CRMP states that development of new sites, alterations to existing sites or applications for change of use will be supported when in line LDP policies and guidance from Marine Scotland and SEPA, and if they can demonstrate that they include research and development initiatives aiming to:

- Reduce environmental impacts, for example by improving sea lice and disease management, including the sustainable sourcing of cleaner fish, or offshore closed or partial containment systems, in particular where renewable sources of energy are used,
- Use integrated multi-trophic aquaculture,

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<sup>36</sup> Scottish Salmon Producers' Organisation (2016). Aquaculture Growth to 2030 [Online]. Available at: <http://scottishsalmon.co.uk/wp-content/uploads/2016/10/aquaculture-growth-to-2030.pdf> (Accessed 03/06/2019)

<sup>37</sup> Clyde Marine Planning Partnership (2019) Clyde Regional Marine Plan Pre-consultation Draft [Online]. Available at: <https://www.clydemarineplan.scot/wp-content/uploads/2019/06/Pre-consultation-draft-Clyde-Regional-Marine-Plan-18-March-2019.pdf> (Accessed 21/10/2019)

- Diversify farmed species which are native to the Clyde Marine Region with due consideration of the implications of climate change, or
- Site farms at high energy sites which promote good dispersal, minimising organic impact on the seabed.

Aquaculture operators are also required in the draft CRMP policies to ensure that any wild caught cleaner fish used in facilities in the Clyde Marine Region are sourced from sustainable commercial fisheries in agreement with the relevant local Inshore Fisheries Group or Inshore Fisheries and Conservation Authorities.

#### 5.6.5 *Draft Local Development Plan*

During 2017, Argyll and Bute Council progressed with a new Local Development Plan (LDP2), running an 8-week consultation on the Main Issues Report between 16<sup>th</sup> October and 11<sup>th</sup> December 2017.

As of October 2019, LDP2 has not been produced for consultation, so draft policies cannot be assessed.

#### 5.6.6 *Rural Economy and Connectivity Report on Salmon Farming in Scotland (2018)*

The Rural Economy and Connectivity Committee (RECC) of the Scottish Parliament published a report on salmon farming in Scotland in November 2018. The remit of the which was to consider the current state of the salmon farming industry in Scotland, identify opportunities for its future development and explore how the various fish health and environmental challenges it currently faces can be addressed.

The report provides extensive conclusions and recommendations to the Scottish Government for all areas of the salmon farming industry. The Scottish Government will deliberate on these recommendations prior to updating legislation surrounding the industry.

The report highlights issues relating to fish health and sea lice as being key concerns, as well as the environmental impact of salmon farming, the location of farms and the possible impact of climate change. These recommendations were considered throughout the design evolution of the Proposed Development and the EIA process.

### 5.7 **Determination and Summary**

The national and local planning policy position is supportive of sustainable marine fish farm development that is suitably designed and located. Specifically, the Argyll and Bute Local Development Plan supports aquaculture development where it can be demonstrated that there will not be significant unacceptable adverse effects, wither individually or cumulatively on the environment.

As demonstrated in this Statement, there are several components of the Proposed Development that support granting consent to this Application. Section 5.4 demonstrates full and comprehensive compliance with all relevant policies contained within the LDP, including the identification of the site as a PDA, and all corresponding SG. The Application is supported by a loch-wide EMP to improve the environmental management of the area, as well as extensive mitigation measure, good husbandry and management practices. Furthermore, the conclusions of the SLVA and the positive economic impacts of the development, demonstrate comprehensively the positive contribution that the Proposed Development would make.

Considering the Proposed Development's compliance with all relevant planning policy, and with no material considerations to suggest otherwise, the Applicant respectfully suggests that planning permission be granted to this Application.

## **6 CONCLUSION**

The removal of existing equipment and replacement with new equipment at a long-established site, is of a relatively small scale. Argyll and Bute Council provided a Screening Opinion that the application did not require an EIA and that it would be sufficiently supported by the provision of specific supporting information. SSC has provided the supporting information, as requested by the Statutory Consultees, in this document and accompanying technical submissions. All technical assessments conclude that no significant impacts will result from this proposed development.

The design and assessment process adopted by SSC has represented a good practice approach to the responsible development of marine aquaculture. All potential areas of interaction between the Replacement and the environment have been addressed, resulting in a well-designed development incorporating appropriate mitigation measures, at a suitable site.

The Replacement complies with, and is supported by, the aims and objectives of both national policy and the Development Plan, and would make a valuable contribution towards the ambitious growth targets set for the aquaculture industry.

**From:** [REDACTED]  
**To:** [REDACTED] [gov.scot](mailto:[REDACTED]@gov.scot)  
**Cc:** [REDACTED]  
**Subject:** RE: Query MOWI BDNC  
**Date:** 11 December 2019 12:45:00  
**Attachments:** [BDNC fish farm - 18\\_00005\\_MFF - SNH response to ABC.pdf](#)  
[20171213\\_ADD Deployment Guidance\\_CLH\\_F1.pdf](#)

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Hi [REDACTED]

As it stands I believe that Mowi have not yet developed the consent that was granted in 2018 (i.e. they are still operating the old site which was consented pre-2018). My understanding is that any conditions that were attached to the 2018 consent are not relevant to the existing site, which has no restrictions on the use of ADDs.

The ADD deployment plan that was conditioned as part of the 2018 consent is attached for your information, as is the SNH response. I believe that Mowi are currently using an OTAQ ADD system at the existing site. However, should they develop the new site that was consented in 2018 then any conditions that are attached to that consent would need to be adhered to. This would include the requirement for them to operate the site in line with the attached ADD deployment plan, including adhering to the type and number of ADD devices specified.

The relevant condition that was attached to the 2018 planning consent states:

*6. Any deployment and use of Acoustic Deterrent Devices (ADD's) at this site shall be in accordance with the ADD deployment plan detailed in Annex 1 of the supporting information accompanying the application submission, or such alternative as may be agreed in advance in writing by the Planning Authority in consultation with Scottish Natural Heritage. In the event of ADD deployment, the operator shall maintain a log which details:*

- a) the model and specification of any ADD deployed at the site;*
- b) the dates and durations of ADD operation;*
- c) the prompt for use (manual or auto sensor)*
- d) details of any predation events;*
- e) other anti-predation measures deployed at the time of ADD use;*
- f) details of person(s) responsible for maintaining the log,*

*The log shall be maintained available for inspection on request by the Planning Authority.*

*Reason: In order to avoid disturbance of harbour porpoise and to maintain the favourable conservation status of this species within the Hebrides and Minches candidate Special Area of Conservation and to avoid disturbance of other marine mammals in the interests of nature conservation.*

I don't know if this is any use to you? If you have any further queries then let me know and I'll be happy to help out however I can.

Best regards,

[REDACTED]

---

**From:** [REDACTED] [gov.scot](mailto:[REDACTED]@gov.scot) <[REDACTED]@gov.scot>  
**Sent:** 09 December 2019 12:26  
**To:** [REDACTED] <[REDACTED]@nature.scot>  
**Subject:** Query

Good afternoon [REDACTED]

I have received correspondence in relation to ADD use at MOWI's Bagh Dail nan Ceann farm.

I am aware that it got planning permission in 2018 and there were conditions attached to the use of ADDs (a deployment plan?). Could you provide any detail? An early response would be welcome.

Thank you and best wishes

[REDACTED]

\*\*\*\*\*

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\*\*\*\*\*

From 1 May 2020, SNH will be rebranding and changing its name to NatureScot.



## Scottish Natural Heritage Dualchas Nàdair na h-Alba

All of nature for all of Scotland  
Nàdar air fad airson Alba air fad

FAO: [REDACTED]  
Argyll & Bute Council  
Planning Services  
1A Manse Brae  
Lochgilphead  
PA31 8RD

23 February 2018  
Our ref: CDM148988 - A2538266  
Your ref: 18/00005/MFF  
By email only

Dear Sir / Madam

### **Town and Country Planning (Scotland) Act 1997 Marine fish farming planning application – Alterations to existing site - Bagh Dail Nan Ceann (BDNC), Loch Shuna – 18/00005/MFF**

Thank you for your consultation on the above proposal dated 15 January 2018. The proposal is to enlarge the existing marine fin fish (Atlantic salmon) farm by installing an additional two 120m circumference cages, to upgrade and move the feed barge, and to increase the biomass at this site from 2,500t to 3,500t.

#### **Summary**

The proposal could affect the Inner Hebrides and the Minches Candidate Special Area of Conservation (cSAC) selected for its harbour porpoise interest. This proposal could be progressed with appropriate mitigation. However, because it could affect internationally important natural heritage interests and therefore, **we object to this proposal unless it is made subject to conditions, so that the works are done strictly in accordance with the mitigation as detailed in our appraisal below.**

We also provide advice about impacts on other aspects of the natural heritage. We have included details of these in our appraisal below.

#### **Appraisal**

##### **1. Inner Hebrides and the Minches cSAC**

The proposal lies within the Inner Hebrides and the Minches candidate Special Area of Conservation (cSAC) selected for its harbour porpoise.

The site's status means that the requirements of the Conservation (Natural Habitats, &c.) Regulations 1994 as amended (the "Habitats Regulations") apply or, for reserved matters, The Conservation of Habitats and Species Regulations 2017. Consequently, Argyll and Bute Council is required to consider the effect of the proposal on the cSAC before it can be consented (commonly known as Habitats Regulations Appraisal). The SNH website has a summary of the legislative requirements (<https://www.nature.scot/professional->

[advice/safeguarding-protected-areas-and-species/protected-species/legal-framework/habitats-directive-and-habitats-regulations](#)).

In our view, this proposal is likely to have a significant effect on the harbour porpoise qualifying interest of the Inner Hebrides and the Minches cSAC. Consequently, Argyll and Bute Council is required to carry out an appropriate assessment in view of the site's conservation objectives for its qualifying interest. To help you do this, we advise that in our view, on the basis of the information provided and the appraisal carried out to date, if the proposal is undertaken strictly in accordance with the following mitigation, then it will not adversely affect the integrity of the site. Our mitigation advice is as follows:

- 1) Any Acoustic Deterrent Devices (ADDs) that are deployed at this site will be done so in accordance with the agreed ADD deployment plan (as detailed in annex 1 of the supporting information provided with the application). Any future changes to the plan must be approved by the Planning Authority.
- 2) The operator must undertake reporting on ADD usage at the site including:
  - a. The exact dates when the device was operated, how often it was operated on that date, for what duration, and what was the cue for its manual or auto-sensor operation;
  - b. Details of any predation events by seals and any anti-predation measures (including ADD) deployment) in use at the time should be logged;
  - c. Details of the person (or persons) responsible for maintaining the logs;
  - d. An undertaking that all logs will be maintained for review by the Planning Authority and/or SNH, if deemed necessary by the Planning Authority.

The appraisal that we carried out considered the impact of the proposal on the following factors:

- The risk posed through potential entanglement of cetaceans in farm equipment is not considered to be significant.
- The risk of injury as a result of exposure to sound emanating from ADDs at this site is not considered to be significant. We conclude that it is unlikely that harbour porpoise will spend significant periods of time within the distances required to result in injury from the use of the equipment as proposed within the ADD deployment plan. We therefore consider the risk of auditory injury as a result of this individual development to be low.
- With the proposed mitigation any potential disturbance as a result of exposure to sound emanating from ADDs at this site is not considered to be significant. This is because:
  - a) The ADD deployment plan provides an appropriate protocol to ensure that the use of ADDs will be limited, and their repeated, continuous use over prolonged periods of time will be prevented, and;
  - b) Due to the relatively low source level of the devices that are proposed. It is predicted that the sound levels emanating from the devices that are proposed at this site will result in a reduced area of potential disturbance, in comparison to some other higher power device types.
- The operator has committed to keeping a record of ADD use at the site and will provide this information to the Planning Authority on request. This will provide an opportunity for the Planning Authority to consider and review the use of ADDs at this site, thus ensuring that long-term cumulative issues can be taken into account in the future.

If the planning authority intends to grant planning permission against this advice without the suggested mitigation, you must notify Scottish Ministers.

We would be happy to provide the full details and reasoning of these recommendations in the form of our Habitats Regulations Appraisal (HRA) proforma.

Background information on the cSAC can be found at: <https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/protected-areas/international-designations/natura-sites/harbour-porpoise-candidate>

## **2. Loch Sunart to the Sound of Jura MPA**

The proposal lies within the Loch Sunart to the Sound of Jura Nature Conservation Marine Protected Area (NC MPA) selected for its common skate and Quaternary of Scotland glaciated channels and troughs.

The site's status means that the requirements of the Marine (Scotland) Act 2010 apply. Consequently, Argyll and Bute Council is required to consider the effect of the proposal on the NC MPA before it can be consented. In our view, the proposal is capable of affecting the common skate protected feature of the Loch Sunart to the Sound of Jura MPA.

We have reached this conclusion because the proposal could theoretically result in a reduced availability of prey species, particularly crustaceans, in a relatively localised area around the proposed development. It could also affect egg-laying areas of common skate locally through deposition of materials onto suitable substrate. However, within the context of the MPA as a whole, we consider that any reduction in prey species or the degradation of egg-laying substrates as a result of the deposition of organic waste is unlikely to be significant.

We therefore consider that the risk of this proposal being capable of affecting, other than insignificantly, the protected features of the Loch Sunart to the Sound of Jura NC MPA is low.

The discharge of chemicals is primarily SEPA's remit and we would expect this aspect of the proposal to be considered in detail through the CAR licensing process. Argyll and Bute Council may wish to consult with SEPA when undertaking their own assessment of the effect of the proposal on the NC MPA.

## **3. Firth of Lorn SAC**

The proposal is close to the Firth of Lorn Special Area of Conservation (SAC) designated for its reefs.

The site's status means that the requirements of the Conservation (Natural Habitats, &c.) Regulations 1994 as amended (the "Habitats Regulations") apply or, for reserved matters, The Conservation of Habitats and Species Regulations 2017. Consequently, Argyll and Bute Council is required to consider the effect of the proposal on the SAC before it can be consented (commonly known as Habitats Regulations Appraisal). The SNH website has a summary of the legislative requirements (see link under section 2 above).

In our view, it is unlikely that the proposal will have a significant effect on any qualifying interests either directly or indirectly. An appropriate assessment is therefore not required. We have reached this conclusion because the proposal is located approximately 2.5km from the boundary of the Firth of Lorn SAC. The applicant states that no material is predicted to be exported outwith the modelled domain. However, we note that SEPA have stated that final modelling has not yet been verified for this proposal. Given the separation distance between the proposal and the SAC boundary, and on account of the expansive and energetic nature of this area of water, we would expect any potential waste material exported in to the SAC to be dispersed widely and therefore unlikely to result in any impacts on the feature on the SAC.

The discharge of chemicals is primarily SEPA's remit and we would expect this aspect to be considered in detail through the CAR licensing process.

#### 4. Benthic Impacts

The applicant has reached the decision that no new baseline visual survey is required. At screening/scoping stage we advised that further dialogue between MHS, SEPA and SNH would be required to determine whether or not additional visual survey information was necessary, and if so, to agree where any such transects should be carried out. As far as we are aware this advice does not appear to have been taken into account by the applicant. No further information was provided subsequent to our screening/scoping response being issued and it is unclear whether or not this decision was agreed with SEPA.

We have data from a visual survey carried out in 2015 which suggests that the Priority Marine Feature (PMF) habitat Burrowed Mud is present in the vicinity of the cages. The component PMF species tall sea pen (*Funiculina quadrangularis*) was also recorded. Any increase in the footprint of this site is likely to result in increased impacts on these PMF habitats and species. These features do not have legislative protection, but the basis for protection of their national status across Scottish waters is included in the National Marine Plan.

As the information/dialogue that we requested at screening/scoping was not provided, there is insufficient information to complete an impact assessment for PMFs, and therefore we have no means of predicting the degree or extent of likely impacts. Therefore, we cannot advise further on the benthic impacts arising from this proposal. However, we note that this aspect of the proposal will be considered in detail through the CAR licencing process and we would expect to discuss this further with SEPA during that process.

I trust that our advice is clear but please do not hesitate to contact me if you require any further information or clarification.

Yours faithfully

██████████ ██████████  
Operations Manager  
Lorn and North Argyll  
██████████ [snh.gov.uk](http://snh.gov.uk)

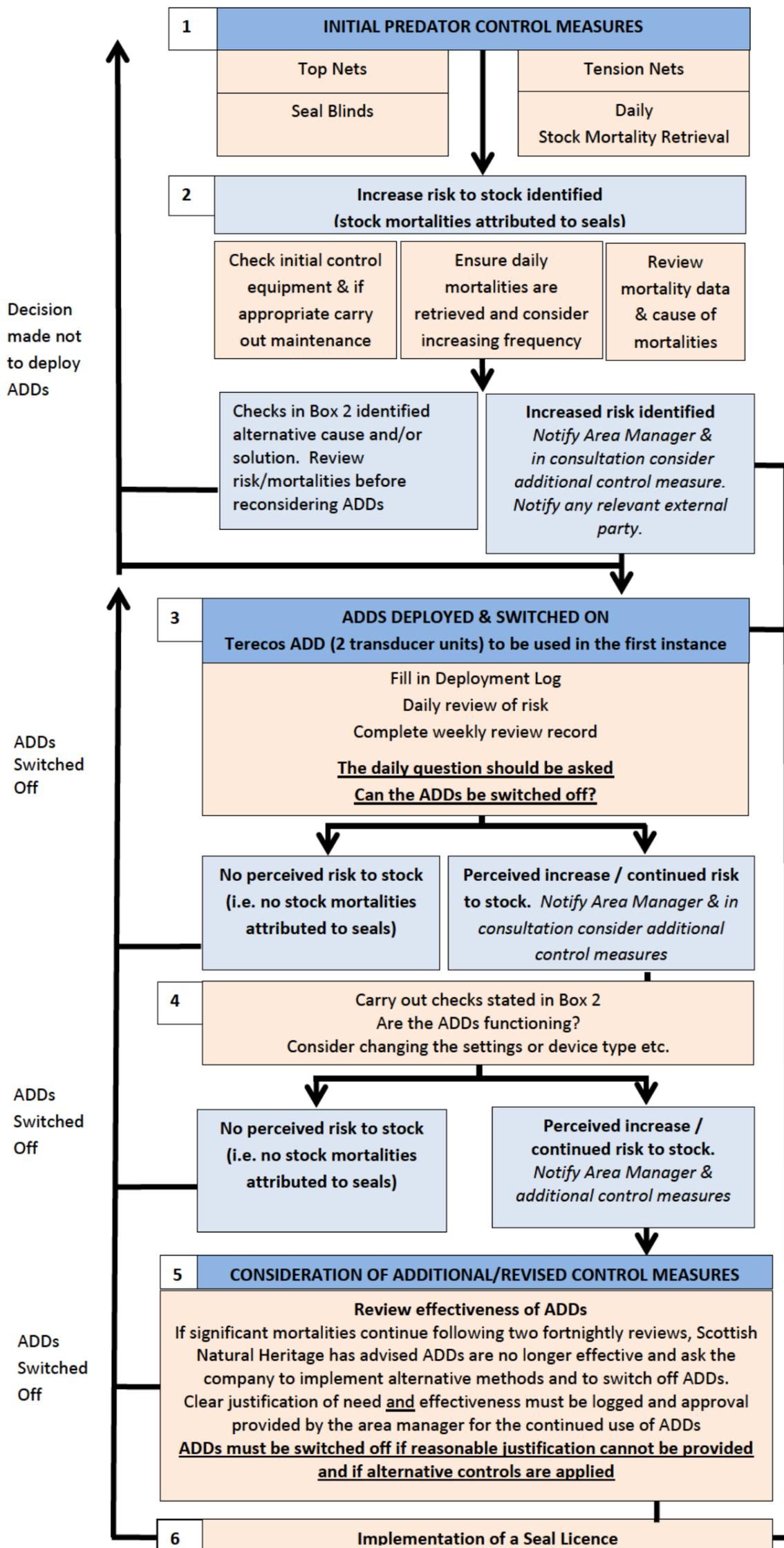
# BDNC SALMON FARM

## ACOUSTIC DETERRENT DEVICE DEPLOYMENT GUIDANCE

Under the Regulation 39(2) of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), it is an offence to deliberately or recklessly disturb any dolphin, porpoise or whale (cetacean). Furthermore, the farm is located within the Inner Hebrides and Minches candidate Special Area of Conservation (cSAC) for the protection of harbour porpoise. Scottish Natural Heritage advise that the use of ADDs has the potential to lead to disturbance/habitat exclusion of harbour porpoise and the continuous noise emission from ADDs is not best practice. The following deployment plan has been developed as a requirement of Scottish Natural Heritage to guide the efficient use of ADDs with due regard to the responsible management of fish welfare and protection given to seal species.

### DECISION MAKING FLOW DIAGRAM

### ROLES & CONSIDERATIONS



Marine Harvest and its site managers have a responsibility to maintain the welfare of its stock. The RSPCA welfare standard is based on 5 core freedoms covering the freedom from pain, injury, fear and distress. Your site is independently assessed by Freedom Foods and RSPA Officers prior certification to this standard

Is there a licence condition or other mechanism which prevent the use of ADDs?  
 Are any external notifications required before or after use?  
 If yes, notification sent to, or permission sought from, relevant external party. If in doubt, please consult the Marine Harvest Environmental Team

The Site Manager is responsible for:-

- maintaining a record of the deployment date, make & model of device, dates of use, settings used, the position of the transducers
- a daily review as to whether the risk is still present and whether the ADDs can be switch off or additional measures required. Any changes to ADD use should be recorded, and
- a fortnightly review in conjunction with Area Manager as to whether the risk is still present and whether the ADDs can be switch off or additional measures required; actions and justification to be recorded in a log by the site manager.
- Site and Area Manager to review ADD use at the end of each cycle.

Marine (Scotland) Act - From the 31st January 2011, any fish farm in Scotland that requires to manage seals, at any time of year, will need an annual Seal Management Licence. Predator control at the salmon farm should be managed in a manner which is compliant with the conditions of its licence.

Prior to taking further steps, the site manager must ensure that the following documents have been completed and approval formally issued by the Seawater Production Manager:-

Authorisation to dispatch seal  
 Contractor's guidelines – seal dispatch  
 Please refer to the Seal Protocol for further details or seek guidance from your Area Manager.

Argyll and Bute Council  
Planning Services  
Municipal Buildings  
Albany Street  
Oban  
PA34 4AW

Your ref: 19/02628/MFF

Our ref: Part 4 Marine Licensing – Lorn and North Argyll – Moorings and Marine Fish and Shellfish Farms

16<sup>th</sup> January 2020

Dear Sir / Madam

**Lismore North Fish Farm, installation of 12 x 90m circumference cages within 60m grid and feed barge (consolidation of two existing fish farm sites to form one) with no increase in biomass**

**Eileanan agus sgeirean Lios mor Special Area of Conservation (SAC)**

This proposal could be progressed with appropriate mitigation. However, because it could affect internationally important natural heritage interests, **we object to this proposal unless it is made subject to conditions so that the works are done strictly in accordance with the mitigation detailed in our appraisal below.**

The proposal lies within Eileanan agus Sgeirean Lios mor Special Area of Conservation (SAC) designated for harbour seal (*Phoca vitulina*).

The site's status means that the requirements of the Conservation (Natural Habitats, &c.) Regulations 1994 as amended (the "Habitats Regulations") or, for reserved matters the Conservation of Habitats and Species Regulations 2010 as amended apply. Consequently, Argyll and Bute Council is required to consider the effect of the proposal on the SAC before it can be consented (commonly known as Habitats Regulations Appraisal). The SNH website has a summary of the legislative requirements (<http://www.snh.gov.uk/docs/A423286.pdf>).

In our view, from the information available, it appears that in this case the proposal is not connected with or necessary for the conservation management of the site. Hence, further consideration is required.

In our view, this proposal is likely to have a significant effect on the harbour seal interest of site by disturbance of seals while they are in the water (via ADD use) and when they are hauled out on Dubh Sgeir particularly during sensitive periods such as pupping (June – July) and moulting (August). Consequently, Argyll and Bute council is required to carry out an appropriate assessment in view of the site's conservation objectives for its qualifying interest. To help you do this, we advise that in our view on the basis of the information provided, if the proposal is undertaken strictly in accordance with the following mitigation, then the proposal will not adversely affect the integrity of the site.

- Major works at the site such as installation of the new cages are scheduled to avoid the sensitive pupping and moulting season for harbour seal June – July and August respectively.
- A work management plan is produced for routine operations during this period to reduce disturbance. This could include, for example, approaching the site in boats more slowly, giving hauled out seals a wider berth and using ADDs as little as possible during pupping and moulting.
- The ADD deployment plan submitted with the application is adhered to.

You may wish to carry out further appraisal before completing the appropriate assessment.

If the planning authority intends to grant planning permission against this advice without the suggested mitigation, you must notify Scottish Ministers.

#### **Burrowed mud (Priority Marine Feature)**

Burrowed mud is present at the site and dense aggregations of *Funiculina* were identified in the visual survey footage. We advise that the proposal is not capable of significantly impacting the national status of either of these Priority Marine Features (PMFs).

#### **Wild salmonids**

We raised the issue of potential cumulative impacts on wild salmonids as a result of multiple proposed expansions by SSF in the area during screening and scoping. SSF have drafted a comprehensive environmental management plan to address these concerns and we welcome the measures proposed.

#### **Lynn of Lorn National Scenic Area (NSA)**

There is already fish farming developments within the Lynn of Lorn NSA and other developments round about it. Therefore we consider that expanding one existing fish farm site and removing another will not have a negative impact on the character of the NSA.

If you require any further information please don't hesitate to contact me at the Oban Office.

Regards,



Dr   
Operations Officer – Marine  
Argyll and the Outer Hebrides

**From:** [REDACTED]  
**To:** [REDACTED]  
**Subject:** RE: Proposed mitigation for Lismore North application  
**Date:** 18 February 2020 17:03:51  
**Attachments:** [image001.png](#)

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Hi [REDACTED]

Thanks for your email and helpful advice. The proposed Lismore North farm will be operated in the same way as the previous two farms and overall there is likely to be less local movement at the farm due to just operating one farm instead of two and servicing less farm cages in total - 10 rather than 16 cages. The following statement which was included in our 'Supporting Information' document will be added to the Work Management Plan:

*The proposed Dubh Sgeir site will be serviced and operated in the same way as the existing sites with no changes to husbandry procedures. Operational activities typically occur between the hours of 08:00 and 17:00 but may occasionally be carried out outside these hours. All harvesting and stocking will be carried out by wellboat. There will be no significant change in duration and intensity of servicing and operational activities, including vessel transit routes and husbandry procedures, from the current situation, other than the removal of the cages and moorings at Port na Moralachd.*

In terms of ADD use, we are proposing to use the Airmar devices at Lismore North and these do not have the 'patrol' mode function. We are hoping to trial the OTAQ seal fence system at two sites in the Sound of Mull which have this feature but would like to see how well these work before expanding their use to other locations. It is highly likely that we won't have to use ADDs at all at this farm given that ADDs haven't been used for 5 years and that we would be upgrading the cage nets to the stronger polyethylene nets which have significantly reduced seal predation at locations which have experienced issues in the past.

Please let me know if you would like any further information or clarification.

Regards

[REDACTED]

**Development Manager | Scottish Sea Farms Limited**

South Shian, Connel, Argyll, PA37 1SB

Tel +44 (0)1631 [REDACTED] Mobile [REDACTED]

cid:image001.png@01D37472.779789B0



---

**From:** [REDACTED]  
**Sent:** 17 February 2020 17:42  
**To:** [REDACTED]; [REDACTED]  
**Subject:** RE: Proposed mitigation for Lismore North application

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Hi [REDACTED]

I have had a look over the plan I think it clearly sets out the key measures that will be taken to avoid / minimise the risk of any operational management resulting in disturbance to hauled out seals. While reading the document it occurred to me that it would be useful to understand if /

how / to what extent the expansion will result in any increased operational management that might increase the risk of causing disturbance (i.e. will boat traffic increase etc?). This might not necessarily influence the measures outlined in the plan itself but it will provide useful context in terms of assessing the likelihood of whether or not there will be any increased risk of disturbance. On this basis it might be useful to include a short statement in the introduction to set out if and how the expansion will result in any changes in operational management which could result in any additional risk of disturbance, over and above that already experienced as a result of the operation of both existing sites.

With regards the ADD plan, I think the key aspect in relation to the SAC will relate to whether or not the use of ADDs could have a negative effect on how the seals use the site during the sensitive haul out periods. I note you have included additional measures to try and address this issue. The only point that occurs to me here is whether there may be merit in including a further commitment to only use the devices in patrol mode during the sensitive period, if required at all. Happy to discuss further.

Regards,

██████████

---

**From:** ██████████ <██████████@scottishseafarms.com>

**Sent:** 12 February 2020 15:42

**To:** ██████████ <██████████@nature.scot>

**Subject:** Proposed mitigation for Lismore North application

Hi ██████████

How are things? I have spoken to production colleagues and have prepared a 'Work Management Plan' as requested in the SNH response to this planning application (19/02628/MFF). This identifies a vessel transit route for daily boat traffic and other measures to minimise potential for disturbance to seals during June to August. I have incorporated avoiding major works at the site during this period and a statement on the use of ADDs which is replicated in an updated ADD Deployment Plan (also attached). Please note that this ADD Deployment looks slightly different as I have reorganised the points as per the Sound of Mull ADD deployment plan. The new points relating to seals are points 16 and 17.

I would be grateful for your views on this prior to us submitting to the Council.

Happy to discuss any of the detail or to provide further information.

Regards

██████████

██████████ | **Development Manager | Scottish Sea Farms Limited**

South Shian, Connel, Argyll, PA37 1SB

Tel +44 (0)1631 ██████████ Mobile ██████████

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Thoiribh an aire airson adhbharan gnothaich, 's dòcha gun tèid sùil a chumail air puist-dealain a' tighinn a-steach agus a' dol a-mach bho SNH.

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**From:** [REDACTED]  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** RE: Proposed mitigation for Lismore North application  
**Date:** 19 February 2020 11:41:59  
**Attachments:** [image001.png](#)  
[Lismore North Supporting Information Document.pdf](#)

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Hi [REDACTED]

Yes its unfortunate they have very similar names! I will add a brief statement on historic ADD use at the Lismore North farm to the introduction as suggested.

For information I have attached the 'Supporting Information' document which we submitted with the planning application. You may not have seen this document but it summarises the existing seal predation measures and ADD use at existing farms in section 9 of the document. We have had low levels of predation (compared to other farms) at all of our Lismore farms, despite being located close to seal haul-out sites. Across all our farming areas we don't see any trend of increased seal predation with closer proximity to seal haul out sites which is perhaps not what you would expect.

Regards

[REDACTED]

[REDACTED] [REDACTED] **I Development Manager | Scottish Sea Farms Limited**  
South Shian, Connel, Argyll, PA37 1SB  
Tel +44 (0)1631 [REDACTED] Mobile [REDACTED]

---

**From:** [REDACTED] <[REDACTED]@nature.scot>  
**Sent:** 19 February 2020 09:24  
**To:** [REDACTED] <[REDACTED]@scottishseafarms.com>; [REDACTED]  
<[REDACTED]@nature.scot>  
**Subject:** RE: Proposed mitigation for Lismore North application

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Hi [REDACTED]

Apologies I saw reference to sealgaurd and got mixed up with sealfence, which is the OTAQ device.

It is really interesting to know that ADDs have not been required in the past 5 years, and quite surprising given the location of the site. I think it would be useful if you also included a brief statement somewhere in the introduction to make reference to the fact that ADDs have not been activated at this site over the past 5 years.

Regards,

████

---

**From:** █████ █████ <████████@scottishseafarms.com>

**Sent:** 18 February 2020 17:04

**To:** █████ █████ <████████@nature.scot>; █████ █████ <████████@nature.scot>

**Subject:** RE: Proposed mitigation for Lismore North application

Hi █████

Thanks for your email and helpful advice. The proposed Lismore North farm will be operated in the same way as the previous two farms and overall there is likely to be less local movement at the farm due to just operating one farm instead of two and servicing less farm cages in total - 10 rather than 16 cages. The following statement which was included in our 'Supporting Information' document will be added to the Work Management Plan:

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Please let me know if you would like any further information or clarification.

Regards

████

████ █████ | **Development Manager | Scottish Sea Farms Limited**

South Shian, Connel, Argyll, PA37 1SB

Tel +44 (0)1631 █████ Mobile █████

cid:image001.png@01D37472.779789B0



**From:** [REDACTED] <[REDACTED]@nature.scot>  
**Sent:** 17 February 2020 17:42  
**To:** [REDACTED] <[REDACTED]@scottishseafarms.com>; [REDACTED]  
<[REDACTED]@nature.scot>  
**Subject:** RE: Proposed mitigation for Lismore North application

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Hi [REDACTED]

I have had a look over the plan I think it clearly sets out the key measures that will be taken to avoid / minimise the risk of any operational management resulting in disturbance to hauled out seals. While reading the document it occurred to me that it would be useful to understand if / how / to what extent the expansion will result in any increased operational management that might increase the risk of causing disturbance (i.e. will boat traffic increase etc?). This might not necessarily influence the measures outlined in the plan itself but it will provide useful context in terms of assessing the likelihood of whether or not there will be any increased risk of disturbance. On this basis it might be useful to include a short statement in the introduction to set out if and how the expansion will result in any changes in operational management which could result in any additional risk of disturbance, over and above that already experienced as a result of the operation of both existing sites.

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Happy to discuss further.

Regards,

[REDACTED]

---

**From:** [REDACTED] <[REDACTED]@scottishseafarms.com>  
**Sent:** 12 February 2020 15:42  
**To:** [REDACTED] <[REDACTED]@nature.scot>  
**Subject:** Proposed mitigation for Lismore North application

Hi [REDACTED]

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Deployment looks slightly different as I have reorganised the points as per the Sound of Mull ADD deployment plan. The new points relating to seals are points 16 and 17.

I would be grateful for your views on this prior to us submitting to the Council.

Happy to discuss any of the detail or to provide further information.

Regards

██████

██████ ████████ **Development Manager | Scottish Sea Farms Limited**

South Shian, Connel, Argyll, PA37 1SB

Tel +44 (0)1631 ████████ Mobile ██████████

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# Supporting Information Document – Lismore North application

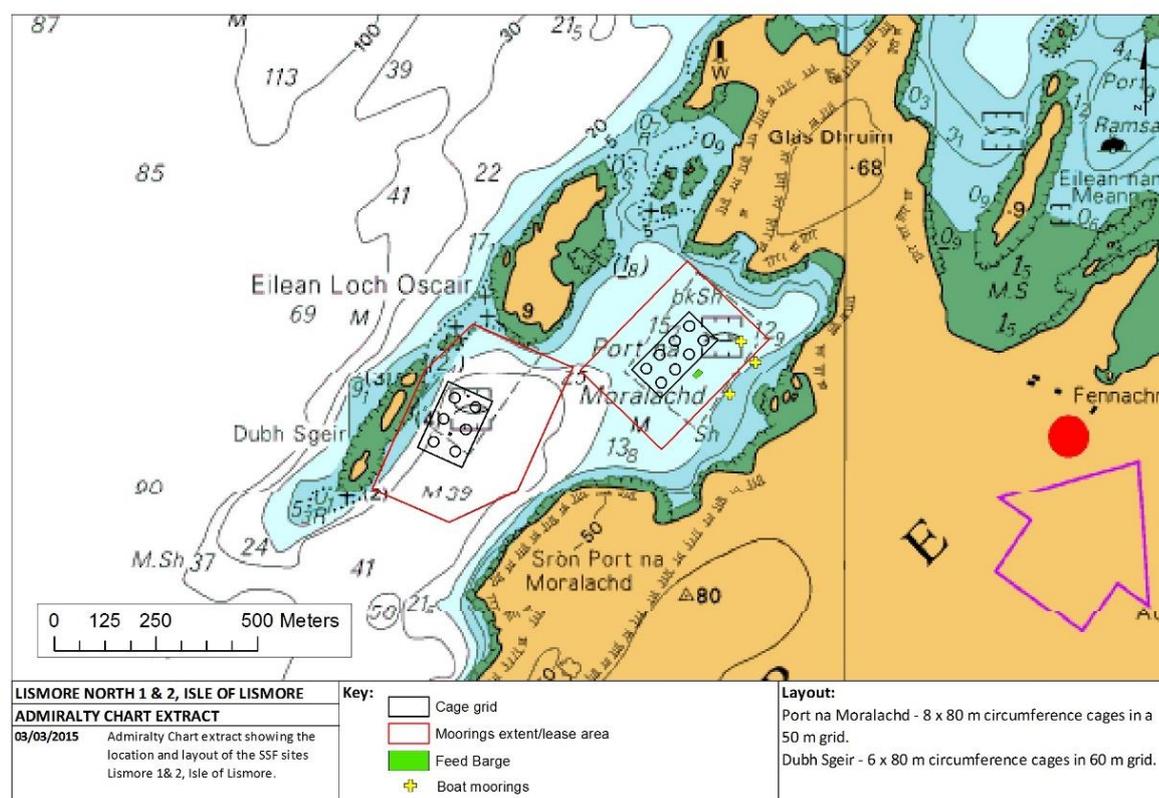
## 1. Development proposal

Scottish Sea Farms currently operates two farms at Lismore North: Port na Moralachd and Dubh Sgeir. The proposal being applied for is to consolidate production from these two farms into a single farm overlapping the current Dubh Sgeir site, with no overall increase in maximum biomass.

Dubh Sgeir consists of 6 x 80m circumference cages arranged 2 x 3 in a 60m grid located at 186596 E, 745245 N (site centre). Feeding is from two automated hoppers, and power is supplied to the site by a generator on a raft. A single planning permission (ref FFR/ABC/011) to cover both sites was granted through the Audit & Review process in August 2014. Port na Moralachd consists of 8 x 80m circumference cages arranged 2 x 4 in a 50m grid located at 186090 E, 745098 N (site centre). Automated feeding is from a platform barge which also provides storage for feed and equipment, plus incinerator, offices, drying room and staff welfare facilities. Details of equipment and surface and moorings area are shown in **Table 1.1**. The location and extent of these existing farms is shown in **Figure 1.1**.

**Table 1.1: Existing and proposed site equipment and area**

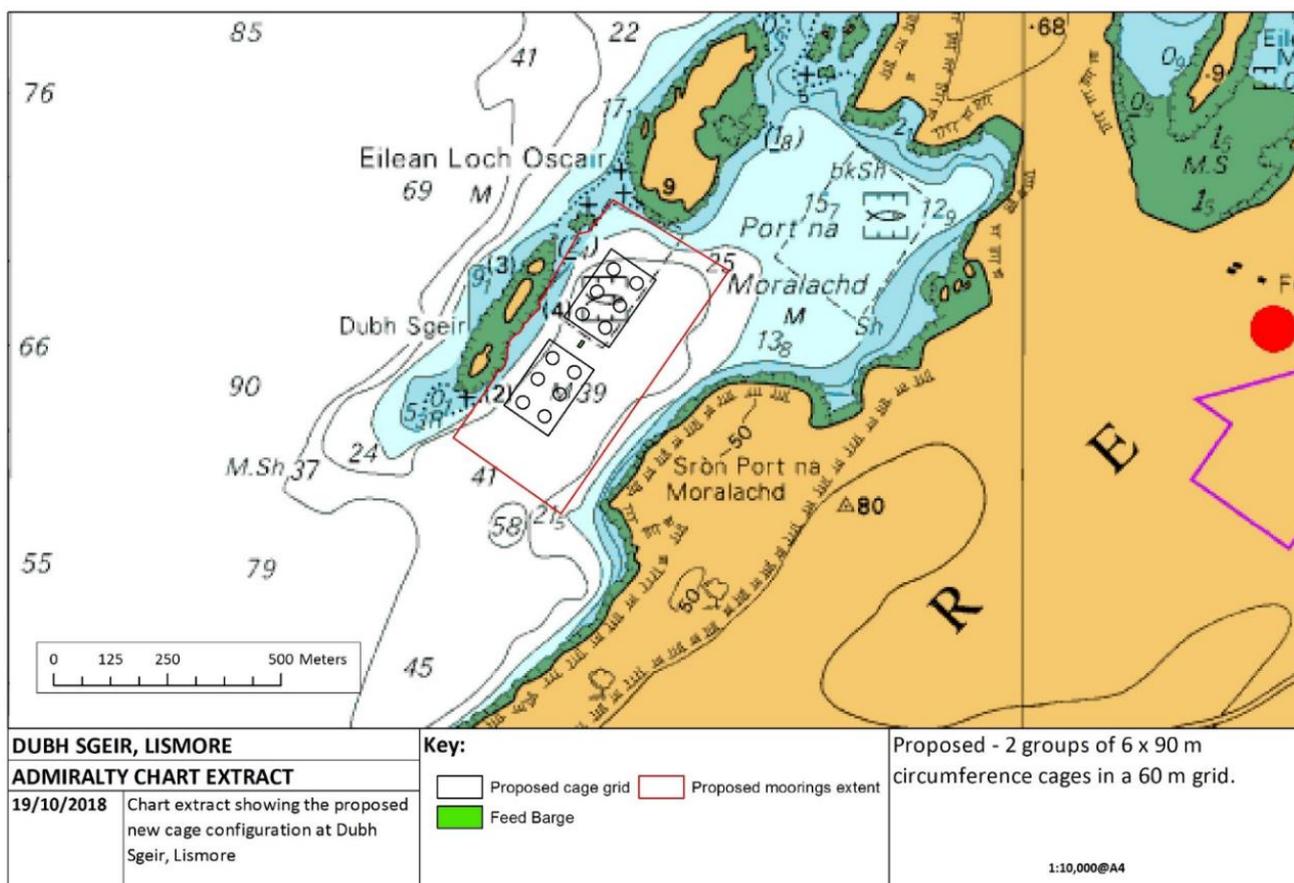
	Existing Dubh Sgeir	Existing Port na Moralachd	Existing combined	Proposed Dubh Sgeir
Cages	6 x 80m circles in a 50m grid	8 x 80m circles in a 50m grid	14 x 80m circles	Single site: 12 x 90m circles in 60m grid
Barge	Automated feed hoppers from feed raft	Automated feed system from barge	-	Automated feed system from raft-style barge (15x10m)
Cage surface area	3,057m <sup>2</sup>	4,076m <sup>2</sup>	7,134m <sup>2</sup>	7,739m <sup>2</sup>
Total surface area (Cages & barge)	3,207m <sup>2</sup>	4,362m <sup>2</sup>	7569m <sup>2</sup>	7,889m <sup>2</sup>
Moorings area	169,175m <sup>2</sup>	106,400m <sup>2</sup>	275,575m <sup>2</sup>	192,975m <sup>2</sup>
Maximum biomass	500 tonnes	680 tonnes	1180 tonnes	1180 tonnes



**Figure 1.1 – Location and configuration of existing Lismore North farms (Dubh Sgeir & Port na Moralachd)**

We propose to reconfigure and expand the farm site at Dubh Sgeir, replacing the existing infrastructure with 12 x 90m circumference cages in two groups of 2 x 6 in a 60m grid. The existing small feed barge (15m x 10m) would be located between the two cage groups with feed distributors on each end connecting it with each cage group. Full measurements are provided in the Feed Barge Elevation drawing (**Attachment G**).

The proposed configuration is illustrated in **Figure 1.2** and the accompanying plans (**Attachments A to C**), and co-ordinates are provided in **Attachment E**. The centre point for the proposed farm would be E186033 N745040 (56 32.907 N, 05 28.950 W).



**Figure 1.2** – Location and configuration of proposed Lismore North (Dubh Sgeir) farm

A maximum biomass of 500 tonnes is currently consented at Dubh Sgeir (SEPA licence CAR/L/1008806) and 680 tonnes at Port na Moralachd (CAR/L/1008832). We propose to apply for a variation to the existing Dubh Sgeir SEPA CAR licence to farm at a maximum biomass of 1180 tonnes, which is equivalent to the two existing consent limits combined. Should this development be approved, we would cease production at Port na Moralachd, relinquish its existing CAR licence and remove all farm equipment.

The Port na Moralachd barge currently provides operational facilities for both Lismore North farms including staff welfare facilities, farm monitoring systems, offices, drying room, incinerator and storage. The feed raft proposed for the expanded Dubh Sgeir farm is only large enough to accommodate the feeding system and so it is proposed to retain the Port na Moralachd barge in its existing location to provide the required operational facilities for the new proposal.

## 2. Equipment Specification

Equipment attestations have been provided which confirm that the proposed specification of equipment (**Appendices O-Q**) has been carefully identified by suitably qualified personnel and are appropriate for the site-specific conditions expected at the proposed site in Loch Linnhe. The average current speed is 0.065m/s with a predicted annual significant wave height of 1.5 metres. The proposed cages, grid and mooring system

have been designed to meet the Scottish Technical Standard which applies appropriate safety factors to ensure that equipment will withstand the worst conditions expected at the farm location.

#### Cage net specification

The existing Lismore North sites use nylon cage nets and the proposed Dubh Sgeir farm would install new polyethylene cage nets with a mesh size of 20mm and a cage net depth of 14 metres. Top nets are made of 3mm knotless nylon, have a mesh size ranging from 25 to 50mm, and a height of 2.5 metres above the water level. Full net specification is provided in **Attachments I and J**.

## **2. Site servicing and operation**

The proposed Dubh Sgeir site will be serviced and operated in the same way as the existing sites with no changes to husbandry procedures. Operational activities typically occur between the hours of 08:00 and 17:00 but may occasionally be carried out outside these hours. All harvesting and stocking will be carried out by wellboat. There will be no significant change in duration and intensity of servicing and operational activities, including husbandry procedures from the current situation, other than the removal of the cages and moorings at Port na Moralachd.

#### Lighting and noise

The farm will continue to use underwater lighting to prevent the maturation of fish between December and May every second year of production. Each cage will use two 1000W Idema underwater anti-maturation lights.

Navigational lighting will be as directed by the Northern Lighthouse Board who provide advice on the planning application once submitted. Based on other fish farm applications the navigational lighting and marking required by NLB is likely to include the following:

- The site will be marked by two yellow lit poles exhibiting a flashing light with a character flash to be determined, and fitted with a yellow multiplication cross topmark. Poles will be positioned on the south east corner of the southern cage group and north west corner of the northern cage group.
- The feed barge will have an all-round fixed white light, at least 1m above obstruction and with 2 nautical mile nominal range.

There are no expected changes to noise levels resulting from the proposed consolidation as the Dubh Sgeir site will be operated in the same way as the existing sites with the same level of production, same service vessels and same feeding system.

#### Disposal and removal of mortalities

Cage nets will be checked daily by underwater camera for mortalities and removed by diver a minimum of weekly, but more often if required depending on mortality level as per Section 6.4 in **Appendix K (Veterinary Health and Welfare Plan)**.

All mortalities are collected at the site and secured in specific mort tubs with lids. These are then transferred by boat to the shorebase where the incinerator is located. The small quantities of ash resulting from the incineration process are legally disposed of in general waste.

Only under special circumstances or when the disposal method explained above is not functioning correctly mortalities will be placed in sealed skips and transferred to a licenced waste disposal site for incineration or anaerobic digester plant by a local licenced transport company.

## **3. SEPA CAR licence**

A maximum biomass of 500 tonnes is currently consented at Dubh Sgeir (SEPA licence CAR/L/1008806) and 680 tonnes at Port na Moralachd (SEPA licence CAR/L/1000832). We have applied for a variation to the existing Dubh Sgeir SEPA CAR licence to farm at a maximum biomass of 1180 tonnes, which is equivalent to

the two existing consent limits combined. Should this development be approved we will relinquish the CAR licence for Port na Moralachd.

#### 4. Production information

Maximum stocked biomass for the proposed Dubh Sgeir site is 1180 tonnes at a maximum stocking density of 10.9 kg/m<sup>3</sup>. The Production Plan (**Appendix N**) will follow a 22 month production cycle with a minimum fallow period of two months.

#### 5. Benthic habitats and species

Effects on seabed habitats and species from the deposition of waste feed, faeces and medicinal residues is considered by SEPA under the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR). Dubh Sgeir has been evaluated as satisfactory for all self-monitoring seabed surveys since switching to a modelled site-specific Monitoring Protocol Specification in 2011, indicating that it is currently operating within sustainable limits in this regard.

AUTODEPOMOD Modelling, using hydrographic data summarised in **Appendix R**, has been carried out in order to identify appropriate biomass and medicinal treatment limits for the new cage configuration (**Appendix B**). This identifies that the new cage configuration can support a maximum biomass of 1180 tonnes with a stocking density of 10.9 kg/m<sup>3</sup> whilst meeting relevant Environmental Quality Standards for benthic deposition. This report also identifies recommended consent limits for bath and in-feed medicinal treatments.

The modelling report identifies the predicted depositional footprint from the proposed site configuration. The Allowable Zone of Effect (AZE) is the area where ITI values of below 30 are forecast by the model, indicative of a changed benthic community structure and is predicted to measure 86,502m<sup>2</sup> (0.087km<sup>2</sup>). The AZE for current Dubh Sgeir site is 45,370m<sup>2</sup>, and for Port na Moralachd 41,550m<sup>2</sup>.

A benthic ROV survey was carried out at Lismore North in April 2018 to identify the baseline benthic environment and any sensitive seabed habitats and species. The survey transects were agreed with SNH and SEPA to focus on the new areas of seabed which overlap with the predicted depositional footprint. These transects extended beyond the boundary of the AZE.

A Visual Seabed Report (**Appendix C**) has been prepared which describes and characterises the habitats and species identified along the video transects. This report identified that the waters around the proposed site at Dubh Sgeir ranged from 16-50m in depth. Within the shallower water (<20m) the substrate mainly comprised mixed coarse sediments and rocky substrate, while the deeper water (30-50m) was dominated by fine burrowed muds. The latter were noted to share characteristics with the biotope "Sea pen and burrowing megafauna in fine mud" which is a Priority Marine Feature (PMF). Aggregations of the sea pen *Funiculina quadrangularis* were also present in parts of the survey area but were not considered abundant. This species is a component of the 'burrowed mud' PMF habitats but also a PMF species in its own right.

According to the [Feature Activity Sensitivity Tool \(FEAST\)](#), the broad 'burrowed mud' feature is considered to be of medium sensitivity to organic enrichment; low sensitivity to levels of siltation (<5cm); medium sensitivity to levels of siltation in the range 5-30cm; and have some sensitivity to synthetic chemical compounds. While most species in the burrowed mud biotopes appear to tolerate sediments relatively high in organic content, heavy organic deposition is likely to change community structure. Within the AZE changes in community structure are acceptable under CAR on the basis that sediment re-workers remain in sufficient abundance to maintain aeration and carbon turn-over. Within the AZE a reduction in abundance of burrowing megafauna and sea pens is therefore expected.

The depositional footprint of the expanded Lismore North farm at Dubh Sgeir will be larger than its existing footprint but the additional area of seabed and potentially 'burrowed mud' that would be affected is of an equivalent scale to the area of seabed which will no longer be affected by deposition at Port na Moralachd,

which also supports 'burrowed mud' habitat. While we have not undertaken a seabed visual survey at Port na Moralachd, benthic monitoring reports for this site since 2009 identify mud habitat but do not provide an indication of the presence of sea pen species. There is also significant overlap between the existing and proposed footprint, meaning that much of the seabed within the proposed footprint has already been affected by deposition. The new area of seabed that will be affected by deposition represents around 50% of the proposed AZE area (0.04km<sup>2</sup>).

A very crude estimation of the possible extent of burrowed mud habitat with the tall sea pen in Loch Linnhe has been taken from spatial records of this habitat & species available on National Marine Plan Interactive<sup>1</sup>. This data shows a wide extent of a high number of records across Loch Linnhe. A rough estimate of the extent of the area, within 20km of the Lismore North farm, which encompasses these records in upper Loch Linnhe (from the south end of Lismore to the Corran narrows) is 145km<sup>2</sup>. This concurs with the SNH Commissioned report describing Scottish PMFs, which states that 'Burrowed Mud' is extensively distributed along the Scottish west coast (SNH 2016<sup>2</sup>). The new area of seabed predicted to be affected by deposition of 0.04km<sup>2</sup> represents approximately 0.03% of the predicted extent of 'burrowed mud with the tall seapen' in lower Loch Linnhe.

Adhering to a variation of the existing CAR licence and relevant environmental quality standards for medicinal treatments and benthic deposition will mitigate against significant effects on seabed habitats including 'Burrowed Mud' habitat. This includes limits on stocking density, maximum biomass, use of medicinal treatments, visual monitoring of feeding by camera from the feed barge to minimise any waste feed falling to the seabed, good husbandry practices, and conformance with the site Veterinary Health Plan. Following establishment of the site, benthic impacts at the fish cages and the surrounding area will be regularly monitored in accordance with the terms of the CAR licence. The site will also be left fallow for a period a minimum period of six weeks at the end of each production cycle prior to restocking.

### Conclusion

The proposed consolidation of farming operations at Lismore North will affect the PMF habitat 'Burrowed Mud' and PMF species, *Funiculina quadrangularis* in new areas of seabed within the depositional footprint of the proposed Dubh Sgeir farm. While any effects are likely to be of local significance, they will be partially offset by the cessation of farming at Port na Moralachd, limited by identified mitigation measures and affect a relatively small area of new seabed (0.04km<sup>2</sup>). In comparison to the wider distribution of these PMFs (145km<sup>2</sup>) it is considered unlikely that the proposed development would have a significant impact on the national status of this Priority Marine Feature.

## **6. Water column impact**

### Water quality

Marine Scotland and Argyll and Bute Council asked that the ECE assessment undertaken in support of four proposed expansions in the Loch Linnhe be submitted with the application and updated to account for a recently surrendered CAR licence in Loch Etive. This assessment has been submitted (**Appendix S**) but has not been revised and no commentary is provided on this report because it is not relevant to the development proposed. The purpose of an ECE assessment is to consider the potential worst-case cumulative implications of nutrient enhancement from an overall increase in production within a defined water body or wider farm area. In the case of the consolidation being applied for, there will be no overall increase in production or maximum consented biomass within Loch Linnhe and therefore no additional effects on the water column from nutrient enhancement within this body of water. Should the proposal be granted planning permission the Port na Moralachd farm would be de-equipped and its SEPA CAR licence relinquished.

The Modelling Summary Report (**Appendix B**) identifies the recommended consent limits for bath medicines for the proposed configuration and these are compared to existing consent limits for the existing Dubh Sgeir and Port na Moralachd sites in the Sea Lice Efficacy Statement (**Appendix I**). The recommended consent limit

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<sup>1</sup> <http://marine.gov.scot/maps/938>

<sup>2</sup> [SNH Commissioned Report No. 406: Descriptions of Scottish Priority Marine Features \(PMFs\)](#), p27.

for Azamethiphos is slightly higher for the proposed Dubh Sgeir site than the existing site, but lower for both Cypermethrin and Deltamethrin. For all three bath medicines the new limits are significantly lower than the cumulative limits for the existing Dubh Sgeir and Port na Moralachd sites. The use of bath treatments within consent limits set by SEPA will ensure that strict environmental quality standards (EQS) set to prevent environmental harm are met. It is therefore concluded that it is unlikely that the proposed consolidation will result in any significant effects on water quality from the use of bath medicines.

## 7. Wild Migratory Salmonids

### Potential wild fish interactions

The potential interactions between salmon farming activity and wild salmonids include the transfer of parasites and disease between farmed and wild fish and the risk of genetic introgression arising from farmed fish escapes. In addition to these potential risks, wild salmonid populations can be affected by a range of other pressures<sup>3</sup> including exploitation (fishing); predation; invasive non-native species, river water and habitat quality, barriers to migration; and other marine activities.

The existing fish farms at Lismore North have been operating since 1992 and are operated within the wider Farm Management Area M-36 encompassing lower Loch Linnhe, Loch Creran and Loch Etive. The surrounding catchments host wild salmonid populations, with the Creran and Lochy districts the most relevant to this planning application. The most significant catchment is the Lochy which is approximately 30km north of the Lismore North farm and wild fish migrating to and from the Lochy will travel along Loch Linnhe past this farm site.

In the absence of accurate counts and estimates of salmon and sea trout populations, Marine Scotland fishery statistics are the only long-term data set available to consider trends in wild salmonid catchments. Fisheries statistics for the Creran district show a significant decline in salmon and grilse catches and a general decline in sea trout catches from the late 1980s. Salmon, grilse catches in the Lochy district show a decline from the early 1970s before improving between 2000 and 2007 and then repeating a fluctuating but declining trend. Sea trout catches show a similar general decline from the early 1970s with number remaining low.

Overall the returns of wild fish to rivers in these catchments have been declining with current estimates of returning smolts in the larger rivers very low. Local fisheries in these rivers have for many years operated a 'catch and return' policy, which is now mandatory under the Conservation of Salmon (Scotland) Regulations 2016.

### Sea lice and fish health management

SSF are committed to effective sea lice management which is essential to protect the health and welfare of farmed fish and to minimise the risk of potential significant adverse effects on wild salmonids. Unsuccessful sea lice management can increase the risk of impacts on local wild salmonids as well as resulting in significant financial cost from decreased productivity. There will be no overall increase in biomass at Lismore North and therefore no increased risk in the potential for wild fish to be affected by farm-derived lice dispersed from the Lismore North farm.

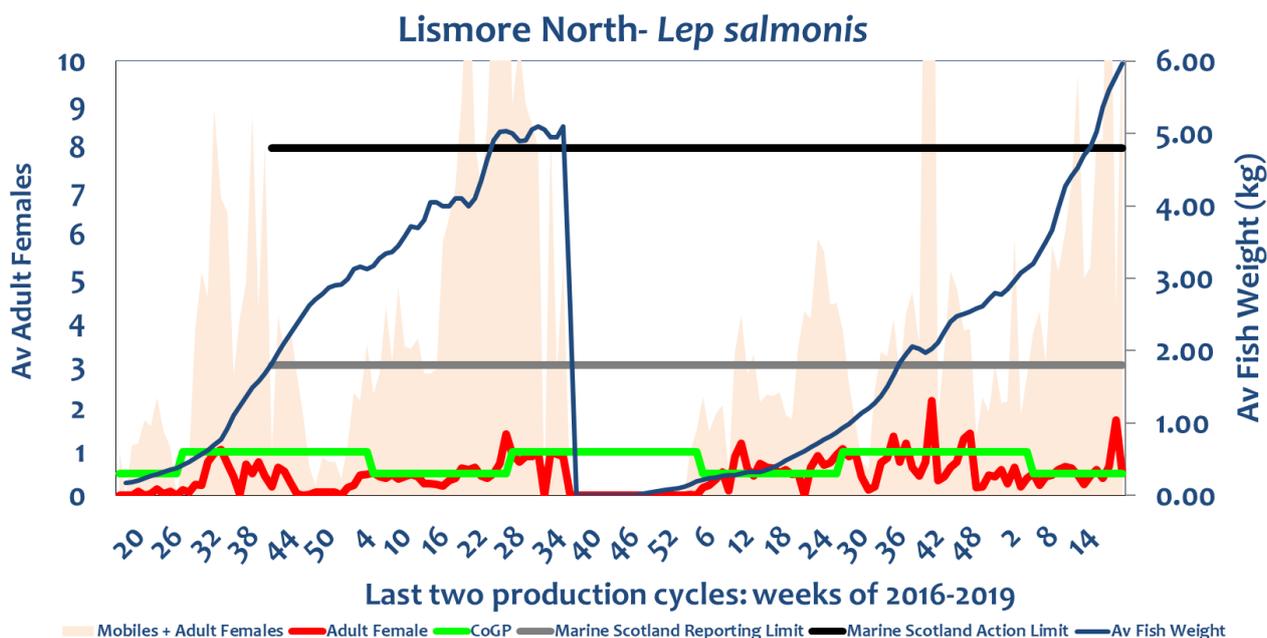
### *Experience at existing Dubh Sgeir farm*

Sea lice levels on the Lismore North Farm for the previous production cycle and current cycle (which ended in May 2019) are presented in **Figure 7.1**. Lice levels are largely within CoGP thresholds and where these have been exceeded, they have responded well to treatment or other management measures and brought back below the thresholds quickly. These exceedances therefore do not represent a failure to control sea lice, which would be characterised by lice remaining above levels for long periods despite management interventions. In the last production cycle (November 2017 to May 2019) key measures which were effective in bringing lice levels back below CoGP included an increased stocking of cleaner fish (wrasse) in March 2018

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<sup>3</sup> Marine Scotland [High Level Pressures on Atlantic Salmon](#)

(week 9); thermolicer treatments in October 2018 (week 40) and then harvesting with redistribution of cleaner fish at a higher ratio in remaining cages near the end of the cycle in April 2019 (week 14).



**Figure 7.1** - Sea lice data from the current and previous production cycles at Dubh Sgeir (from April 2016 to May 2019)

#### Proposed sea lice management strategies

The sea lice and fish health management strategies that apply to the proposed Lismore North (Dubh Sgeir) farm will not change following the reconfiguration in cage equipment. The following documents set out the preventative and reactive measures that will be taken to control and treat sea lice at Lismore North and at SSF farms within Farm Management Area M36:

- Linnhe Sea Lice Strategy (**Appendix J**)
- Lismore North Veterinary Health & Welfare Plan (**Appendix K**)
- Linnhe Farm Management Statement (**Appendix L**)

The enclosed Sea Lice Strategy (**Appendix J**) demonstrates that our fully integrated approach for the control of sea lice has prevention and continuous non-medicinal measures as the core strategy, which includes physical barriers (lice shields); biological control (cleaner fish); physical delousing systems (thermolicer and hydrolicer); genetic selection of stock type; and functional health feeds.

Planned use of cleaner fish at Lismore North farm for the next farm cycle (commencing June 2020) will include wrasse stocked at 4% and potentially lumpfish later in the cycle, due to the early summer start of the farm cycle. SSF have no sourcing issues and can confirm we have agreements in place with dedicated suppliers of cleaner fish to ensure a sufficient ongoing supply that meets our planned stocking ratios for effective biological lice control. Recent investment by SSF in a second thermolicer will provide increased availability of this physical treatment option in the Mainland region (Argyll & Highland) from Spring 2020. Thermolicer treatments on SSF farms in the Linnhe region have consistently been reducing lice levels on the farm by around 90% for adult female lice and 95% for pre adult lice.

Despite a reducing reliance on medicinal treatments, they still have an important part to play in a wider management strategy. Modelling of medicinal bath treatments and in-feed treatments has been undertaken in support of the variation to the existing CAR licence and is presented in **Appendix B**. This modelling report and a Sea Lice Efficacy Statement (**Appendix I**) identify the modelled quantities of medicines that are likely to be consented by SEPA.

Using the current EQS for Emamectin Benzoate (Slice) under SEPAs 'Interim Statement', the modelling report identifies a quantity of Emamectin Benzoate that can treat a biomass of 222 tonnes. This is significantly lower

than that consented under the existing SEPA CAR licence for Dubh Sgeir which would allow treatment of up to 2500 tonnes of fish. In recent years Slice has been used to treat sea lice (*Lep. Salmonis*) at the early stages of a production cycle when the fish are small and biomass on the farm is low and therefore quantities used have been significantly lower than the maximum consented quantities. The low modelled quantity for the proposed Lismore North configuration will still allow a single preventative treatment at 6 weeks post stocking.

Bath treatment quantities identified would allow effective tarpaulin treatment of the proposed farm at all stages of the production cycle in between 2 and 6 days. Permission will also be in place to carry out bath treatments in a wellboat.

Given the wide range of sea lice management measures available and reducing use of medicinal treatments we are confident that despite a reduction in availability of Emamectin Benzoate, the fish health and management measures identified in our Sea Lice Strategy (**Appendix J**) will allow an appropriate range of non-medicinal and medicinal options to implement effective control of sea lice across all stages of the production cycle. Overall the proposal to reconfigure this site is considered unlikely to be detrimental to the effective control and treatment of sea lice at Lismore North and wider farms in FMA M-36, and therefore no significant environmental effects are expected.

All SSF farm sites in Farm Management Area M-36 are stocked and managed on a single year class basis, in accordance with the Farm Management Statement (**Appendix L**), which also requires the sharing of sea lice data between all operators (SSF, Mowi and Dawnfresh), controls over fish movements and a target for a minimum four-week synchronous fallow across all salmon farms within FMA M-36 (SSF & Mowi farms). Farms operated by Dawnfresh in Loch Etive do not follow the same pattern of stocking and fallowing and therefore a Risk Assessment (**Appendix M**), as required by the Code of Good Practice has been provided. This document identifies the potential risk associated with non-synchronous fallowing across the whole FMA, taking account of the proposed consolidation at Lismore North, and identifies appropriate mitigation to minimise/manage those risks.

#### *Wider fish health management*

The risk of introduction of other parasites and disease from farmed salmon to wild salmonids and the protection of farmed stock from diseases carried by wild fish is managed through a full suite of monitoring and mitigation measures detailed in the site-specific Veterinary Health and Welfare Plan (**Appendix K**). This includes the vaccination of all smolts stocked at SSF farms against common bacterial and viral infections and specific biosecurity measures for farmed salmon and cleaner fish species.

#### Escapes and containment

SSF recognise the potential environmental and economic impacts of farm escapes on wild fish populations and local fisheries and commit to undertake all possible actions to minimise the risk of escapes.

A site-specific Containment Plan (**Appendix F**) and an Escape Prevention and Recapture Strategy (**Appendix G**) which set out measures and operational procedures to ensure equipment is used and maintained appropriately and ultimately minimise the risk of fish escapes. The latter also identifies procedures which must be followed in the event of an escape or suspected escape. Site specific attestations (**Appendices O-Q**) have been provided from equipment manufacturers that confirm equipment is suitable for the conditions expected at the site and will meet the design requirements specified by [The Technical Standard for Scottish Finfish Aquaculture](#).

A Predator Exclusion Plan (**Appendix D**) for the proposed Lismore North farm identifies specific measures to prevent, reduce and manage predator interactions and therefore the risk of escapes from damage caused by predators. There have been no confirmed escapes from the existing Dubh Sgeir and Port na Moralachd fish farms to date and both farms have experienced low levels seal predation.

The existing site uses nylon cage nets and it is proposed to upgrade these nets with significantly stronger polyethylene nets and increased net tensioning using sinker tubes. These equipment changes will further

reduce the risk of escapes and in terms of daily operations, the same management practices will apply to the expanded site as apply to the current site, as detailed in **Appendix F** and **Appendix G**.

Escapes or suspected escapes will be reported immediately to Scottish Government and local fishery boards and trusts as set out in the Escape Prevention and Recapture Strategy (**Appendix G**). SSF will provide assistance with recapture in affected rivers and estuaries if required.

Overall, it is concluded that mitigation is in place to minimise the risk of escapes and therefore potential effects on wild salmonids, and that the proposed changes at the Lismore North farm present no increased risk to wild salmonids.

#### Environmental Management Plan (EMP)

SSF are currently working with Argyll and Lochaber Fishery Boards and Trusts to develop an EMP covering our farms in Loch Linnhe, which is designed to meet Marine Scotland guidance on EMPs and to manage the potential interactions with wild salmonids relevant to our future expansion proposals at four Linnhe farms, namely Lismore North, Dunstaffnage, Shuna and Lismore West.

A draft EMP (**Appendix H**) has been submitted with this planning application and a final EMP will be place and agreed with Argyll and Bute Council prior to stocking the Lismore North farm, should this application be approved.

The EMP provides a working framework which seeks to minimise the risk of potential pressures from salmon farming activity on wild migratory salmonids and foster a closer working relationship between SSF and the Argyll and Lochaber Fisheries Boards/Trusts. It focusses specifically on the interaction between local populations of Atlantic salmon (*Salmo salar*) and sea trout (*Salmo trutta*) and SSF salmon farms in Farm Management M-36. A defined reporting and review process involving the local fishery boards and trusts will allow an ongoing 'adaptive management' approach where appropriate changes to the EMP and associated farm management measures are informed by an agreed programme of farm and wild fish monitoring.

In conclusion the proposed EMP provides an overarching process to minimise the risk of potential effects from salmon farming activity and mitigate against significant adverse effects on local salmon and sea trout populations.

## **8. Predator interactions**

### Anti-predator measures

The Predator Exclusion Plan (**Appendix D**) set out a sequential structure to anti-predator measures which takes a balanced approach to protection of farmed stocks and minimising effects on non-target wildlife.

Top nets will prevent predatory birds accessing farm stock and will have a mesh size ranging from 25 to 50mm to minimise entanglement risk. Existing nylon cage nets will be replaced with stronger polyethylene nets and increased net tensioning which will reduce the potential for entanglement of diving birds and seals and seal predation. Full net specifications for top and cage nets are provided in **Attachments I and J**. Overall, the proposed equipment changes at Lismore North are not considered likely to increase the risk of predation or risk to predatory wildlife from entanglement above and below the water.

While high quality tensioned cage nets are the first line of defence against seal predation, Acoustic Deterrent Devices (ADDs) are an important secondary deterrent for seals, in the event that tensioned netting does not deter seal predation. The Lismore North sites (Dubh Sgeir & Port na Moralachd) have not needed to use ADDs during the least five years and the proposal to increase the scale of the Lismore North (Dubh Sgeir) site is not likely to increase the likelihood of needing to use ADDs, particularly as cage nets will be upgraded to the stronger polyethylene nets and farming operations are being consolidated from two sites to one.

The proposed **ADD Deployment Plan (Appendix E)** has been developed to apply a consistent approach to ADD use across our Argyll sites and to introduce an improved cascade of actions which must be taken before ADDs can be switched on. This approach will ensure that the use of ADDs is limited and that continuous use over prolonged periods of time is prevented. The ADD Deployment Plan also commits to daily recording of signs of seal predation, seal related fish mortalities and use of ADDs which will be available to Argyll and Bute Council and SNH on request and will inform regular review of predator exclusion measures.

The proposal to include ADDs as a secondary deterrent at the proposed consolidated Lismore North farm will not increase the overall number of ADDs that could be used if needed (due to 2 less cages overall) or the likelihood that they will need to be activated. It is therefore concluded that there is no increased risk of underwater noise affecting cetaceans from this development proposal. The Lismore North farm is approximately 7km from the Inner Hebrides and Minches SAC, designated for harbour porpoise. It is considered that the use of ADDs as proposed in the **ADD Deployment Plan (Appendix E)** will not result in an adverse effect on the integrity of this designated site.

## 9. Protected sites, habitats and species

### Eileanan agus Sgerierean Lios mor SAC

The Lismore North farm (Dubh Sgeir) is located within the Eileanan agus Sgerierean Lios mor SAC, designated for harbour seal. The extent of the component parts of this SAC are shown in **Figure 9.1**.



**Figure 9.1** – Boundary of Eileanan agus Sgerierean Lios Mor SAC & location of Dubh Sgeir farm (red dot)

The following information is provided as an assessment of the likely effects of the proposal on the SAC but also to provide information to inform the Habitats Regulations Appraisal that Argyll and Bute Council as competent authority are required to undertake.

In their screening response to the Lismore North proposal, SNH stated that they felt the use of acoustic deterrent devices could result in a ‘likely significant effect’<sup>4</sup> on the distribution of harbour seals within the SAC and therefore advised that a Habitats Regulations Appraisal will be required to assess the impact of proposed predator control on the conservation objectives of the site.

<sup>4</sup> [SNH Natura Casework Guidance](#) identifies that a ‘likely’ effect is one that cannot be ruled out on the basis of objective information rather than an effect being a certainty or probable.

The Conservation Objectives of this SAC are as follows:

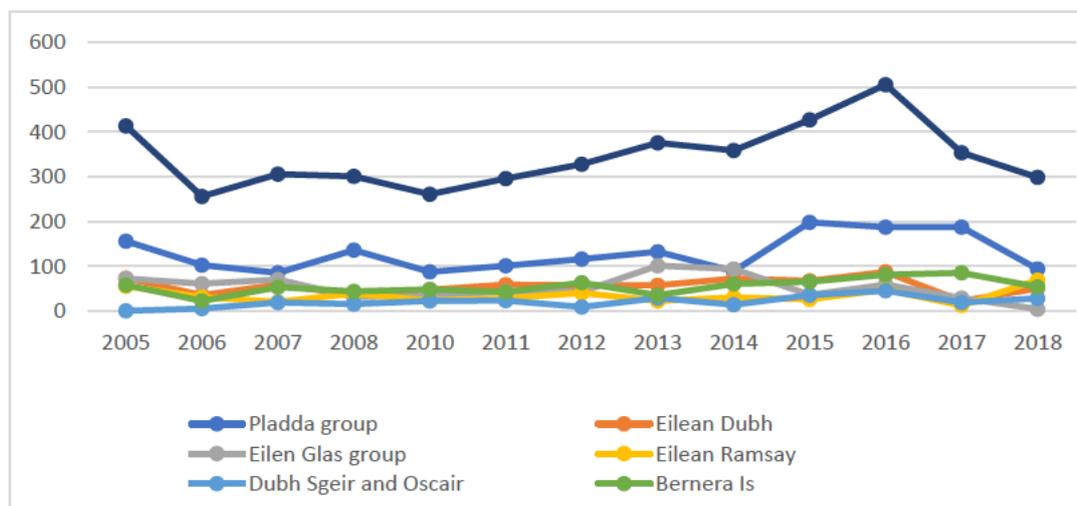
*To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained, and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and*

*To ensure for the qualifying species that the following are maintained in the long term:*

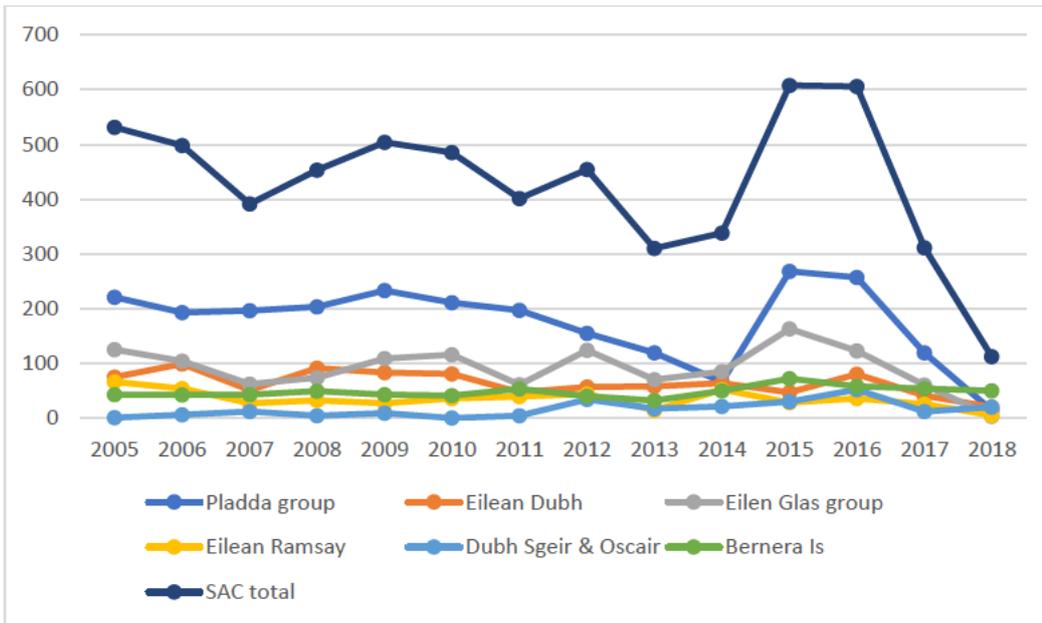
- *Population of the species as a viable component of the site*
- *Distribution of the species within the site*
- *Distribution and extent of habitats supporting the species*
- *Structure, function and supporting processes of habitats supporting the species*
- *No significant disturbance of the species*

The relevant conservation objective for consideration of possible effects on the distribution of harbour seals within the SAC, as identified by SNH, is 'To ensure for the qualifying species that the distribution of the species within the site is maintained in the long term'.

The Lismore North farm was established in 1992, 13 years before the SAC was designated and assessed as being in favourable condition in 2005. The condition of the SAC was last assessed in 2014 as being 'Favourable Maintained'. Annual seal counts of the SAC undertaken by SNH during the breeding season and the moulting season are shown in **Figures 9.2 and 9.3**. These figures show that numbers of harbour seals counted within the five component parts of the SAC and the SAC as a whole have fluctuated between 2005 and 2018 but have remained relatively stable, with the exception of a decline in numbers counted during the breeding season between 2016 and 2018. It should be noted that there are many factors that affect the number of seals hauled-out on any given day, including weather conditions, and therefore fluctuation in the number of seals recorded in different counts are expected.

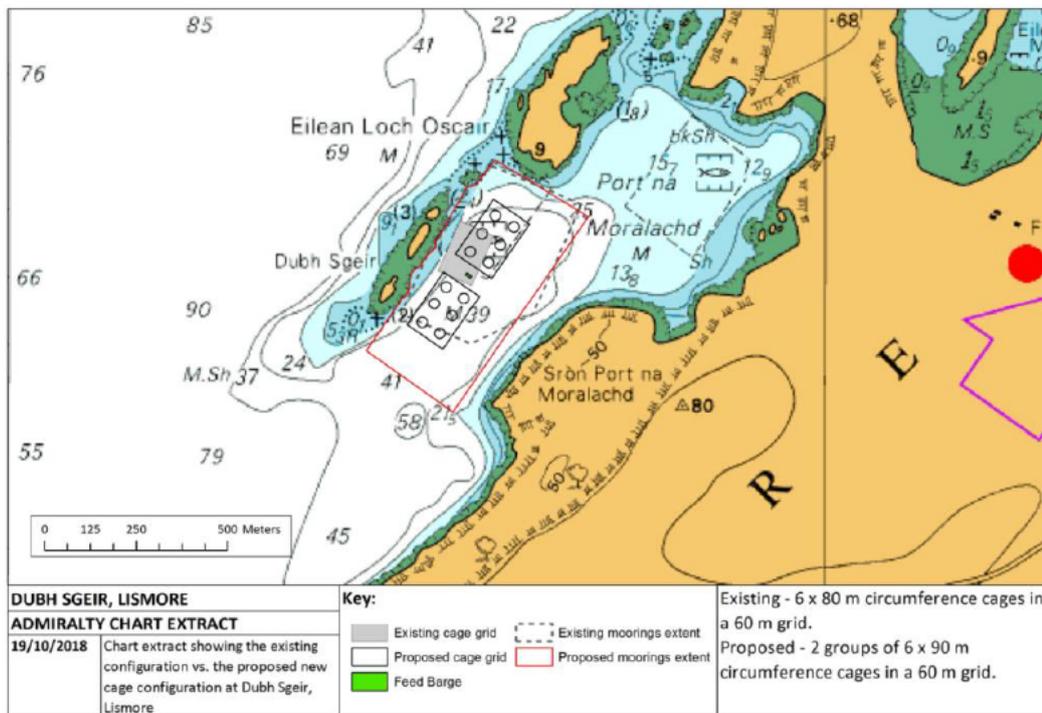


**Figure 9.2** - Counts of harbour seals in SAC during moult in whole of SAC and in each of the six Island groupings

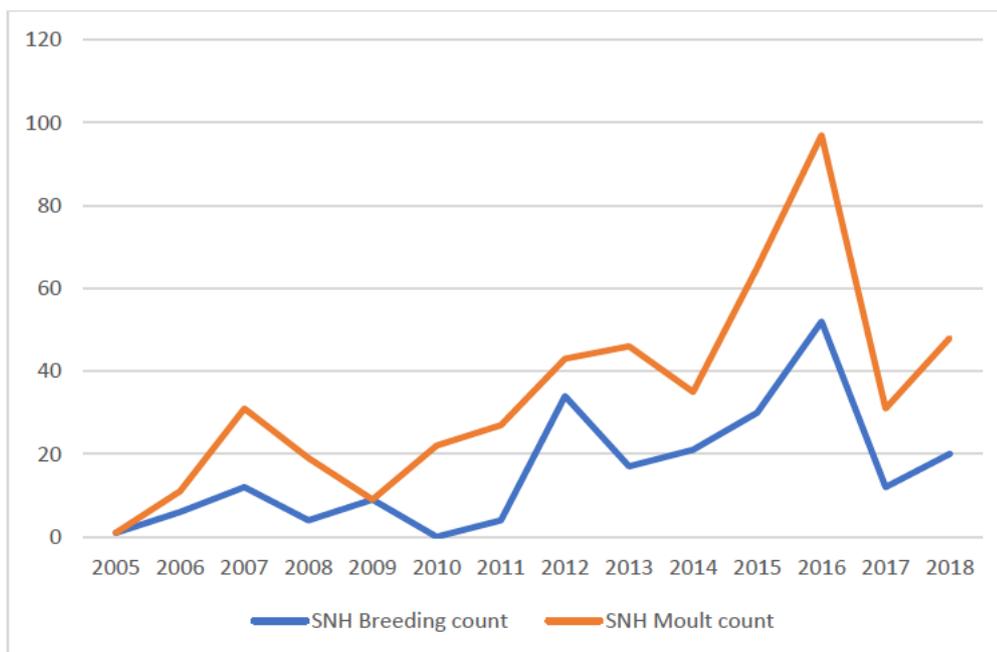


**Figure 9.3** – Counts of harbour seals (total adults & pups) in SAC during breeding season in whole of SAC and in each of the six island groupings

**Figure 9.4** shows the location of the existing Dubh Sgeir farm and extent of the proposed expanded farm at this location in relation to adjacent skerries and islands. The Dubh Sgeir farm is immediately adjacent to the Dubh Sgeir skerry which is within the SAC and close to the small island, Eilean Loch Osgair which is just outwith the SAC. Seal counts for these two islands are recorded as a single combined figure by SNH and are shown in **Figure 9.5**. Seal counts during the moult and breeding season have remained relatively stable over this period and show an overall increasing trend between 2005 and 2018.



**Figure 9.4** - Location of the existing Dubh Sgeir farm and extent of the proposed expanded farm at this location in relation to adjacent skerries and islands



**Figure 9.5** – SNH annual harbour seal counts for Dubh Sgeir and Oscair

### Seal predation measures

The use of predator measures that might have the potential to affect the distribution of seals hauled out on land within the SAC include the use of Acoustic Deterrent Devices (ADD) and the last resort shooting of individual seals. The need to use these measures will be mitigated by the selection of the latest materials for net manufacture and sustained net tensioning. Predator control measures are outlined in the **Predator Exclusion Plan (Appendix D)**.

**Table 9.1** shows the proximity of the current salmon farms around Lismore to haul out sites within the SAC. Despite all four farms being within 2.5km of seal haul outs, seal predation has historically been low with low numbers of seal related fish mortalities and very occasional isolated seal predation events.

**Table 9.1** – Proximity of salmon farms to seal haul outs within the SAC

Farm	Nearest part of the SAC	Distance (m)
Lismore North (Dubh Sgeir)	Dubh Sgeir & Oscair	50
Port na Moralachd	Dubh Sgeir & Oscair	540
Lismore West	Bernera Island	2,200
Lismore East	Pladda Group	1,300

### *Tensioned netting*

The first line of defence against seal predation is tensioned cage netting, net maintenance and regular removal of fish mortalities. The Lismore North and West farms use top of the range nylon nets and the Lismore East farm changed to stronger polyethylene nets in 2017 following an isolated seal predation incident in 2016. It is proposed to upgrade cage nets at Lismore North to the stronger polyethylene nets, which have proven to significantly reduce seal related fish mortalities at other farms which have experienced higher levels of seal predation. These cage nets will also be tensioned using sinker tubes, providing a higher degree of net tensioning. The improved strength and tensioning of cage nets proposed will reduce the potential for seal interaction and the likelihood of needing to use ADDs or resort to shooting seals.

### *ADD use*

ADD use has generally been at a low level at the Lismore farms with the Lismore North sites (Dubh Sgeir & Port na Moralachd) not having used ADDs for at least five years, Lismore East only using once in the last two

years and Lismore West using ADDs more frequently. It is proposed to continue to have ADDs as a predator control option at the expanded Lismore North farm which would be managed under an **ADD Deployment Plan (Appendix E)** for the Lismore North Farm, where ADD use can only occur in the event other measures have not prevented seal predation and seal related fish mortality. It is considered that the proposal to increase the scale of the Lismore North (Dubh Sgeir) site is not likely to increase the likelihood of needing to use ADDs, particularly as cage nets will be upgraded to the stronger polyethylene nets and farming operations are being consolidated from two sites to one.

#### *Last resort seal management*

No seals have been shot at either of the existing Lismore North farms since the start of the Seal Licensing regime in 2011. In this time at nearby sites, a single seal was shot at Lismore West in 2014 and two seals at Lismore East in 2016. Following the seal predation event at Lismore East this farm installed the first polyethylene nets used by Scottish Sea Farms. It is expected that the proposal to increase the scale of the Lismore North (Dubh Sgeir) site and relinquish Port na Moralachd will not increase the likelihood of needing to shoot seals as a last resort, particularly as net strength and tensioning will be improved.

#### Conclusions

There does not appear to be any evidence from the annual SNH seal counts that the existing farm at Dubh Sgeir, combined with activity at Port na Moralachd farm has significantly affected the numbers of seals in any component part of the SAC, including the Dubh Sgeir and Osgair islands. While numbers have fluctuated, seals have been recorded on these islands each year and numbers counted during the moult and breeding season appear relatively stable with a slight increasing trend. This trend is considered to be consistent with, or more positive than, count data for the other component parts of the SAC and the overall SAC totals.

In terms of physical presence and disturbance from routine farm operations (staff and vessels working on site), any effects of increasing the scale of the Dubh Sgeir site are likely to be offset by the relinquishment of activity at the nearby Port na Moralachd site.

Considering the locations of existing fish farms and their proximity to different parts of the SAC (**Table 9.1**) the geographical components of the SAC where a reduction in numbers has been recorded between 2016 and 2018 are those which are most distant from salmon farms.

The proposed changes to seal predation measures as a result of this proposal are considered to either reduce or not increase the likelihood of seal predation and therefore the need to implement ADD use or shoot seals as a last resort. It is therefore concluded that proposed predator control measures are unlikely to affect the distribution of harbour seals within the SAC and therefore that Conservation Objectives will be met and this proposal will not result in an adverse effect on site integrity.

## **10. Landscape**

The landscape implications of the Lismore North proposal are considered in **Appendices A1-A4 (Lismore North Landscape and Visual Appraisal)**. This appraisal concludes that significant adverse effects on the special qualities of the Lynn of Lorn NSA or local landscape character will not arise from the proposed development.

## **11. Other marine activities and socio-economic considerations**

The proposed reconfiguration of the Lismore North (Dubh Sgeir) site will bring cage surface equipment further south than existing cages, towards the mouth of the inlet into Port na Moralachd. The proposed cage group locations are around 190m from the western shore of Lismore allowing continued safe navigational access into the inlet. Pre-application consultation with the Northern Lighthouse Board (NLB) did not identify any major navigational issues. The proposed farm configuration will be marked as advised by NLB through the planning and marine licence process.

No issues relating to other marine activities and socio-economic impacts were raised at a consultation event on Lismore in 2017, organised to seek community views on the proposal.

Trawling and creel fishing for prawns (*Nephrops*) is widespread within Loch Linnhe and close to Lismore, with low levels of creel fishing activity occurring close to the existing and proposed farms (opposite Dubh Sgeir close in to the Lismore coastline and occasionally within the bay at Port na Moralachd). The West Coast Regional Inshore Fisheries Group (WCRIFG) was consulted on this and the other Linnhe expansion proposals in February 2019 and Clyde Fishermens Association responded (as a member of WCRIFG) objecting to and raising concerns over the four proposals. These representations included concerns over the continued loss of fishing ground to other marine activities and Marine Protected Areas, loss of sheltered and safe fishing grounds, potential effects from fish farm discharge of waste and chemical use, and the resulting economic impact of reduction/loss of fishing opportunity.

The proposed moorings area for Lismore North (shown in **Figure 1.2**) extends further south than the existing moorings extent but no further towards the western shore of Lismore. The proposed cage group locations are around 190m from the western shore of Lismore allowing continued access to the inlet for creel fishing vessels. The expansion of the existing moorings area for the Lismore North site will be offset by the removal of equipment at Port na Moralachd resulting in the total area restricted by moorings reduced by 30% from 275,575m<sup>2</sup> to 192,975m<sup>2</sup> (**Table 1.1** and **Figure 1.1**). This change will also not affect prawn trawling in Loch Linnhe as the proposed moorings area will not overlap with potential fishing ground that trawlers can safely access, given the width of channel between Dubh Sgeir and the west shore of Lismore.

While we recognise the concerns of Clyde Fishermens Association in relation to cumulative loss of productive and safe fishing ground, the proposed consolidation of farms will allow existing fishing activity to continue and is not considered to limit or reduce access to fishing ground.

On shore recreational activity adjacent to the Lismore North farms is limited to the coastal walk between Port Ramsay and Castle Coeffin. This is considered in **Appendix A1** and concludes that the proposed consolidation will not result in significant effects on landscape character or the special qualities of the National Scenic Area. Port na Moralachd bay is not a designated anchorage but may be accessed by the occasional yacht or visited by kayakers. The proposed consolidation will not restrict access to the bay and the removal of cages at Port na Moralachd will reduce the overall extent of farming activity at this location.

Overall, no significant adverse effects are identified on commercial and recreational activities and therefore no significant socio-economic impacts are expected. The proposed consolidation of operations at Lismore North will ensure long term job security within the local community, maintaining the current levels of employment.

**From:** [REDACTED]  
**To:** [REDACTED]  
**Subject:** RE: Proposed mitigation for Lismore North application  
**Date:** 24 February 2020 16:31:15  
**Attachments:** [image001.png](#)  
[image002.jpg](#)  
[SSF response to statutory consultee queries.pdf](#)  
[Appendix Q - Lismore North Work Management Plan v0.1.pdf](#)  
[Appendix E - Revised Lismore North ADD Deployment Plan v0.pdf](#)

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Hi [REDACTED]

Thanks for the email. I have submitted the additional information discussed with [REDACTED] and I believe Argyll and Bute Council will now consult you for comment. For information I have attached what was submitted to the Council and will at some point be published on the planning portal.

Many thanks

[REDACTED]

[REDACTED] [REDACTED] | **Development Manager | Scottish Sea Farms Limited**  
South Shian, Connel, Argyll, PA37 1SB  
Tel +44 (0)1631 [REDACTED] Mobile [REDACTED]

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**From:** [REDACTED] [REDACTED] <[REDACTED]@nature.scot>  
**Sent:** 24 February 2020 15:16  
**To:** [REDACTED] [REDACTED] <[REDACTED]@scottishseafarms.com>; [REDACTED] [REDACTED] <[REDACTED]@nature.scot>  
**Subject:** RE: Proposed mitigation for Lismore North application

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Thanks for dealing with this in my absence [REDACTED]

[REDACTED] do you need anything else from us?

[REDACTED]

Dr [REDACTED] [REDACTED] | **Operations Officer - Marine**  
Scottish Natural Heritage | Cameron House | Albany Street | Oban | PA34 4AE | t: 0300 244



Apologies I saw reference to sealgaurd and got mixed up with sealfence, which is the OTAQ device.

It is really interesting to know that ADDs have not been required in the past 5 years, and quite surprising given the location of the site. I think it would be useful if you also included a brief statement somewhere in the introduction to make reference to the fact that ADDs have not been activated at this site over the past 5 years.

Regards,

█

---

**From:** █ █ <█ [scottishseafarms.com](mailto:█@scottishseafarms.com)>

**Sent:** 18 February 2020 17:04

**To:** █ █ <█ [nature.scot](mailto:█@nature.scot)>; █ █ <█ [nature.scot](mailto:█@nature.scot)>

**Subject:** RE: Proposed mitigation for Lismore North application

Hi █

Thanks for your email and helpful advice. The proposed Lismore North farm will be operated in the same way as the previous two farms and overall there is likely to be less local movement at the farm due to just operating one farm instead of two and servicing less farm cages in total - 10 rather than 16 cages. The following statement which was included in our 'Supporting Information' document will be added to the Work Management Plan:

*The proposed Dubh Sgeir site will be serviced and operated in the same way as the existing sites with no changes to husbandry procedures. Operational activities typically occur between the hours of 08:00 and 17:00 but may occasionally be carried out outside these hours. All harvesting and stocking will be carried out by wellboat. There will be no significant change in duration and intensity of servicing and operational activities, including vessel transit routes and husbandry procedures, from the current situation, other than the removal of the cages and moorings at Port na Moralachd.*

In terms of ADD use, we are proposing to use the Airmar devices at Lismore North and these do not have the 'patrol' mode function. We are hoping to trial the OTAQ seal fence system at two sites in the Sound of Mull which have this feature but would like to see how well these work before expanding their use to other locations. It is highly likely that we won't have to use ADDs at all at this farm given that ADDs haven't been used for 5 years and that we would be upgrading the cage nets to the stronger polyethylene nets which have significantly reduced seal predation at locations which have experienced issues in the past.

Please let me know if you would like any further information or clarification.

Regards

█

█ █ **Development Manager | Scottish Sea Farms Limited**  
South Shian, Connel, Argyll, PA37 1SB

Tel +44 (0)1631 [REDACTED] Mobile [REDACTED]

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**From:** [REDACTED] <[REDACTED]@nature.scot>  
**Sent:** 17 February 2020 17:42  
**To:** [REDACTED] <[REDACTED]@scottishseafarms.com>; [REDACTED] <[REDACTED]@nature.scot>  
**Subject:** RE: Proposed mitigation for Lismore North application

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Hi [REDACTED]

I have had a look over the plan I think it clearly sets out the key measures that will be taken to avoid / minimise the risk of any operational management resulting in disturbance to hauled out seals. While reading the document it occurred to me that it would be useful to understand if / how / to what extent the expansion will result in any increased operational management that might increase the risk of causing disturbance (i.e. will boat traffic increase etc?). This might not necessarily influence the measures outlined in the plan itself but it will provide useful context in terms of assessing the likelihood of whether or not there will be any increased risk of disturbance. On this basis it might be useful to include a short statement in the introduction to set out if and how the expansion will result in any changes in operational management which could result in any additional risk of disturbance, over and above that already experienced as a result of the operation of both existing sites.

With regards the ADD plan, I think the key aspect in relation to the SAC will relate to whether or not the use of ADDs could have a negative effect on how the seals use the site during the sensitive haul out periods. I note you have included additional measures to try and address this issue. The only point that occurs to me here is whether there may be merit in including a further commitment to only use the devices in patrol mode during the sensitive period, if required at all.

Happy to discuss further.

Regards,

[REDACTED]

---

**From:** [REDACTED] <[REDACTED]@scottishseafarms.com>  
**Sent:** 12 February 2020 15:42  
**To:** [REDACTED] <[REDACTED]@nature.scot>

**Subject:** Proposed mitigation for Lismore North application

Hi [REDACTED]

How are things? I have spoken to production colleagues and have prepared a 'Work Management Plan' as requested in the SNH response to this planning application (19/02628/MFF). This identifies a vessel transit route for daily boat traffic and other measures to minimise potential for disturbance to seals during June to August. I have incorporated avoiding major works at the site during this period and a statement on the use of ADDs which is replicated in an updated ADD Deployment Plan (also attached). Please note that this ADD Deployment looks slightly different as I have reorganised the points as per the Sound of Mull ADD deployment plan. The new points relating to seals are points 16 and 17.

I would be grateful for your views on this prior to us submitting to the Council.

Happy to discuss any of the detail or to provide further information.

Regards

[REDACTED]

[REDACTED] **I Development Manager I Scottish Sea Farms Limited**

South Shian, Connel, Argyll, PA37 1SB

Tel +44 (0)1631 [REDACTED] Mobile [REDACTED]

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Thoiribh an aire airson adhbharan gnothaich, 's dòcha gun tèid sùil a chumail air puist-dealain a' tighinn a-steach agus a' dol a-mach bho SNH.

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## **Appendix E – Lismore North ADD Deployment Plan**

Version 0.2

Revised February 2020

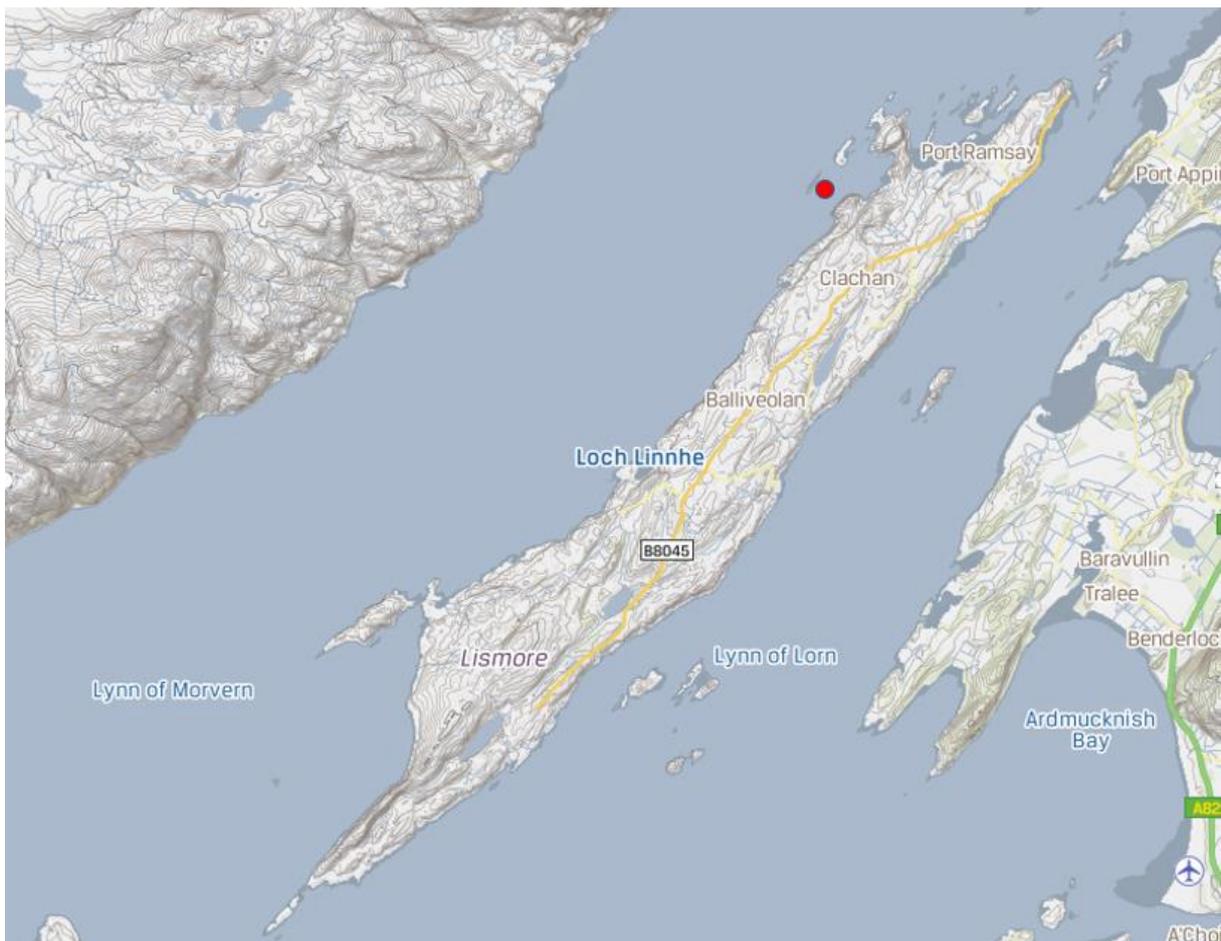
# ADD Deployment Plan for SSF Lismore North

Fish farms can attract predatory species including seals and if not managed, seals can cause damage to stocks and equipment, potentially leading to stock escapes, and sufficiently stress farmed stock to affect production. In addition to seeking to limit the loss of stock from both an economic and environmental perspective, Scottish Sea Farms have a fundamental ethical and legal duty of care to protect the health and welfare of farmed stock. The implementation of anti-predator measures is therefore essential to protect farmed stocks.

The Predator Exclusion Plan for Lismore North sets out a sequential approach to anti-predator measures which takes a balanced approach to protection of farmed stocks and minimising effects on non-target wildlife. While high quality tensioned cage nets are the first line of defence against seal predation, ADD use is an essential secondary deterrent for seals, in the event that tensioned netting does not deter seal predation. As net design improves and SSF's nylon net stock reduces then the use of polyethylene nets is anticipated to reduce seal predation and therefore the use of ADDs.

## Scope of the Deployment Plan

1. This ADD Deployment Plan covers a single marine farm, **Lismore North** (Figure 1).



**Figure 1:** Location of Lismore North farm

### **Preventative predator measures**

2. The farm above will have net designs and test procedures in compliance with the Scottish Technical Standard from 01/06/2020
3. The farm above will have top nets fastened securely to the net wall
4. The farm will clear dead baskets a minimum of 3 times weekly.
5. The farm above will utilise polyethylene mesh in combination with sinker tubes.

### **ADD specification**

6. The farm above will be provided with AirMar dB Plus II projectors as specified in Appendix 1.
7. The farm above will contain a manufacturer-defined deployment specification as detailed in Appendix 2.
8. The farm above will have a unique defined component specification.

### **Protocol for activating/deactivating ADDs**

9. Where losses of salmon through seal predation have been zero for two consecutive days the ADD system must be switched to "Off/Standby".
10. Where losses of salmon through seal predation are confirmed during any deading process then the cascade of actions is ...
  - A. to verify net tensioning (including that all weights of the correct size are in place at every downrope & deadbasket)
  - B. ensure that the sidewall is fully fastened to the top net to prevent any seal accessing the handrail
  - C. step up mortality removal to a minimum of every alternate day (including weekends)
  - D. checking that dead basket seating is correct & the base of the net is holding shape
  - E. ensure ADD functionality (but do not yet make operational)
11. Where losses of salmon through seal predation, (despite following actions 11 A->D) have continued into a 3rd day then the farm should activate the ADDs using the 'soft start' feature, following approval from the Farm Support Manager (Step 15).
12. ADDs should be deactivated on-farm when two consecutive days deading have resulted in zero fresh dead through seal predation, or if losses of salmon through seal predation from an individual sea have continued beyond two weeks.
13. Where losses of Atlantic salmon continue through seal predation despite fully functional net design and the use of ADDs, procedures for seal management should be considered as described in the Predator Exclusion Plan.
14. All farms are covered by a regional Seal Management Licence legally permitting seal destruction as a last resort. Such action is only taken if site staff are confident that an identified individual represents a reasonable threat to net integrity or stock welfare. If an individual seal is culled then ADDs are switched off and the procedure starts again.
15. In exceptional circumstances where multiple seals can be identified as predating a farm, ADDs may be reactivated with approval of the Farm Support Manager in consultation with SNH, within 24 hours (at Point 12) where losses of salmon through seal predation have

continued despite the cull of an individual seal; or if seal related fish mortality increases immediately after deactivation.

### ADD use during period June to August

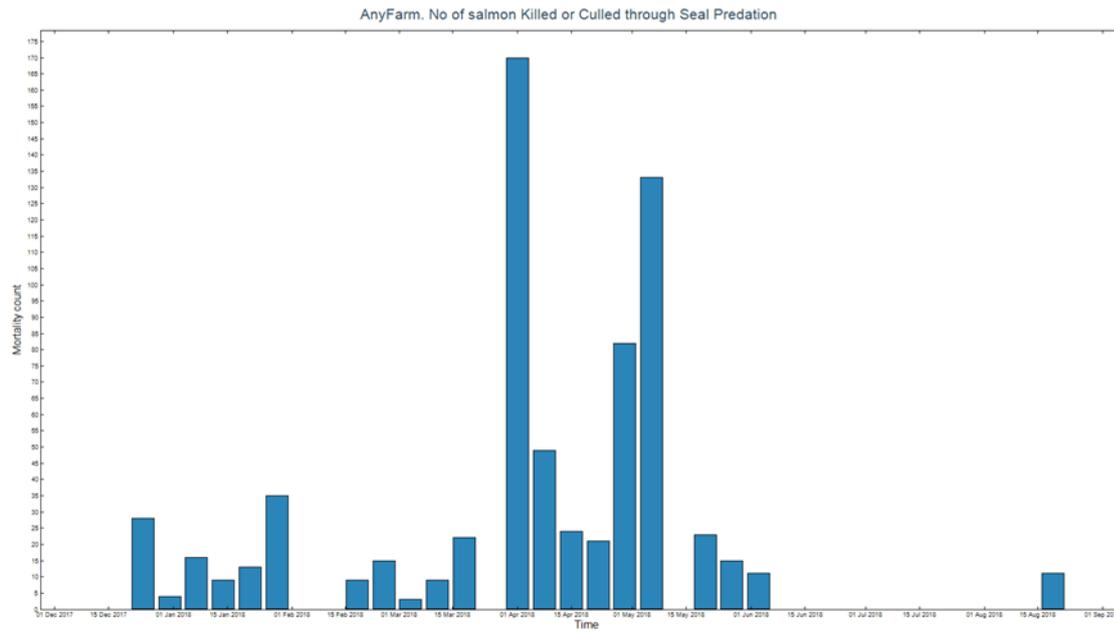
16. To minimise ADD use during the sensitive period for harbour seal pupping and moulting, ADDs can only be activated with permission of the Farm Support Manager.
17. If ADD use has been approved and is activated on site during the months of June to August, records of ADD use should be submitted to SNH at the end of this period.

### Monitoring ADD use and record keeping

18. The farm above will maintain a record form: "ADD Inspection, Clean/Maintenance Record" in its Marine Folder: 10.
19. The farm above will maintain a daily Log monitoring seal interaction and ADD usage. This record is called "Daily sheet/ADD Record Sheet." It is the farm manager's responsibility that this form is completed daily. Forms are filed in folder 20 section 1.
20. The daily farm logs will be made available to Argyll and Bute Council and SNH on request.

Daily Seal /ADD record sheet							issue date:		
Date	Seals number seen, SPECIES	Seal Activity Behaviour, how near cages	Net interaction none, abrasion, damage, holes - state what	Fish behaviour stress, feeding, swim pattern	Fish interaction seal damaged mortalities (no)	ADDs Model in Use	ADDs In use continuously, night time only, not at all?	ADD Management Weekly/Monthly Inspection/ Test/ Maintenance	Sign Off Farm staff undertaking Inspection/ Test/ Maintenance
-Nov-18									
1-Nov-18									
2-Nov-18									
3-Nov-18									
4-Nov-18									
5-Nov-18									
6-Nov-18									
7-Nov-18									
8-Nov-18									
9-Nov-18									
10-Nov-18									
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26-Nov-18									
27-Nov-18									
28-Nov-18									
29-Nov-18									
30-Nov-18									

21. The ADD manual will be available to all via SSF SharePoint.
22. The farm agrees to record any salmon losses as a consequence of seal predation as "Seal" in the SSF Fish Talk database. Where salmon are required to be culled as a consequence of seal predation these too are to be recorded under the title of "Seal" and added to the SSF Fish Talk database.
23. The farm manager should be able to demonstrate seal predation losses of salmon through running a Fish Talk graphic (eg. as below).



**Review and amendment of ADD use**

- 24. SSF commit to review, monitor and adapt future ADD use and predator control measures, including the consideration of alternative ADD systems and their method of operation.
- 25. Any future changes to the ADD Deployment Plan will be agreed in consultation with SNH and Argyll and Bute Council.

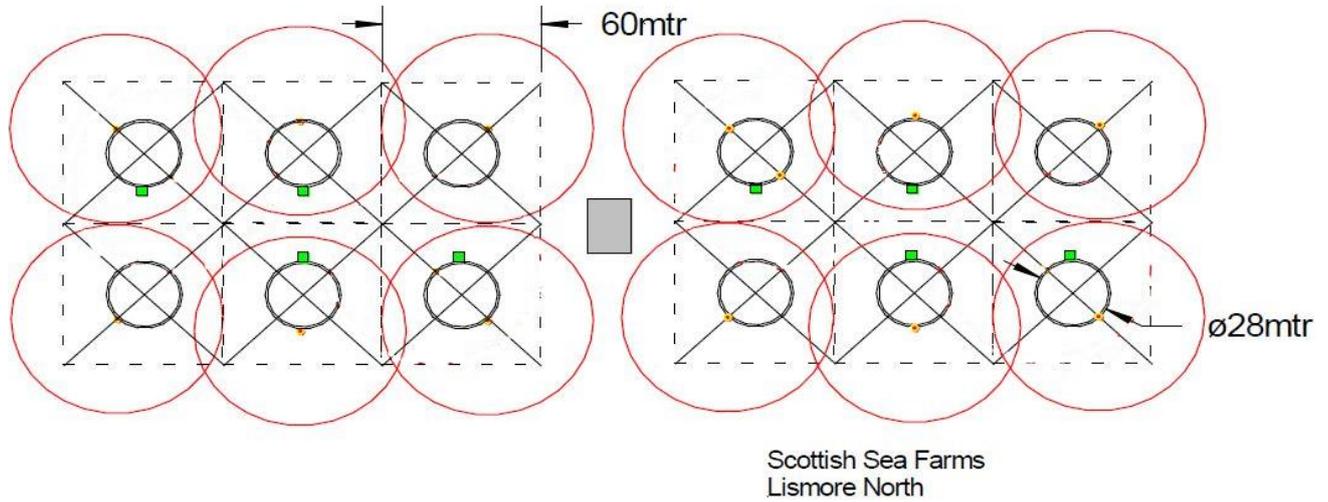
19 February 2020

## **Appendix 1 – Acoustic Deterrent Device Specification**

- The Lismore North farm will be fitted with the Sea Guard Seal Deterrent device. This operates at 10kHz with an indicative source level of 197 dB and is considered to be effective up to 40m in all directions.
- The SeaGuard Seal Deterrent can be used with a 2, 4 or 6 channel control box. All controllers (2, 4 & 6) fire one projector at a time.
- The SeaGuard Seal Deterrent is programmable with a random projector firing order, with variable firing durations between 0.5 seconds and 2.8 seconds. There is a 0.5 second gap between the end of one firing pulse and the beginning of the next.
- All products have a soft start feature which is intended to warn other marine mammals in the area that the system is starting up.

## Appendix 2: Deployment Specification for Lismore North Farm

Diagram of each cage group with position and number of ADD projectors



12 projectors using 2-channel control box



## **Appendix Q – Lismore North Work Management Plan**

Version 0.1

February 2020

# Work Management Plan for June to August - Lismore North salmon farm

## Introduction

The Lismore North farm is located adjacent to the Dubh Sgeir skerry which is part of the Eileanan agus Sgeriean Lios mor Special Area of Conservation (SAC) designated for harbour seal (*Phoca vitulina*)

The following measures will be strictly followed by farm staff and other third party contractors visiting the Lismore North farm during the months of June to August in order to minimise disturbance to harbour seals while hauled out on Dubh Sgeir adjacent to the farm and while in the water adjacent to the Dubh Sgeir skerry.

The proposed Dubh Sgeir site will be serviced and operated in the same way as the existing sites with no changes to husbandry procedures. There will therefore be no significant change in duration and intensity of servicing and operational activities, including vessel transit routes and husbandry procedures, from the current farming operation, other than the removal of the cages and moorings at Port na Moralachd.

In terms of potential disturbance from the use of ADDs the Lismore North farm has historically had low levels of seal predation and has not needed to use ADDs at this location since 2014. The proposal to upgrade cage nets to a stronger material which has significantly reduced seal predation at other farms should further reduce the likelihood of needing to use ADDs.

## Operational activities and boat traffic

The following measures apply to SSF and contractor vessels including crew vessels, farm support vessels, sea lice treatment vessels and wellboat smolt delivery and harvesting.

1. A specified vessel transit route will be used for daily vessel movements between the farm site and Port Appin (see Figure 1). This avoids passing directly between the cage groups and Dubh Sgeir.
2. Larger vessels which occasionally visit the farm, including the wellboat and feed delivery vessel, will access the farm from the south between Dubh Sgeir and Sron Port na Moralachd and maintain a distance of at least 250m from Dubh Sgeir when transiting to and from the farm.
3. Vessel activity at cages closest to Dubh Sgeir will be limited to essential activity only. Daily and weekly activity would include removal of fish mortalities (daily to 3 times weekly) and net cleaning (weekly). Infrequent activity includes fish treatments and wellboat harvesting.
4. Whilst within 500m of Dubh Sgeir, vessels will reduce speed, avoid approaching the haul-out directly, pass at an oblique angle and at a reasonable distance. If signs of increased alertness of seals are observed (i.e. raised heads, agitation or movement towards the water) the vessel will reduce speed and move away from the seal haul-out if possible.
5. Vessels will avoid passing within 500 m of all other haul-out sites which are part of the SAC, wherever possible.

6. All vessels will follow best practice and where possible adhere to the SNH 'Scottish Marine Wildlife Watching Code' (SMWWC) (SNH, 2017d; 2017e) (within practical feasibility) when manoeuvring around and within the vicinity of seals, including:
- avoid seals where possible;
  - reduce speed to 6 knots if seals are present, where consistent with crew and navigational safety or unless there is an emergency and speed a pre-requisite;
  - a steady speed and course will be maintained where possible if a seal approaches an SSF or contractor vessel; and,
  - sudden unpredictable changes in speed, direction and engine noise will be avoided to minimise disturbance to seals in the vicinity.

#### Construction activity

- Construction activity including installation or decommissioning of cages, cage grid and moorings will be undertaken out with June, July and August, the sensitive period for pupping and moulting.

#### Use of Acoustic Deterrent Devices (ADDs)

- ADD use will be minimised as far as possible during the months of June to August and will strictly follow the ADD Deployment Plan for the Lismore North farm. This includes the need to seek permission from the regional Farm Support Manager to use ADDs during this period and to report whether ADDs have been used or not to SNH at the end of this period each year.

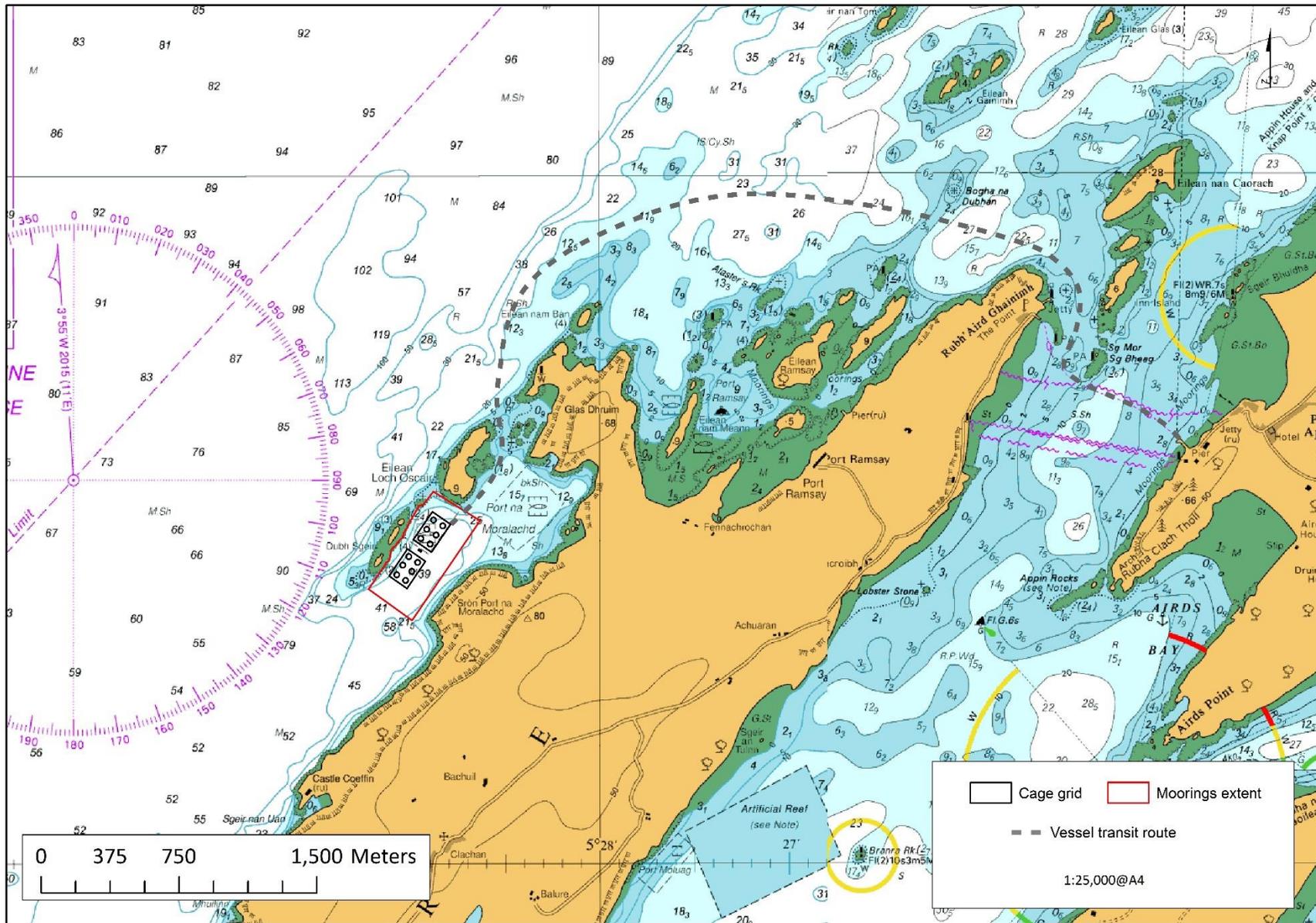


Figure 1 – Vessel Management Route

## **SSF response to statutory consultee queries – Lismore North planning application (19/02628/MFF)**

### **SNH response**

SNH's response of 16<sup>th</sup> January 2020 requested additional mitigation to avoid the risk of adverse effects on the integrity of the Eileanan agus Sgeirean Lios mor SAC.

As suggested by SNH, SSF have produced a Work Management Plan (enclosed as **Appendix Q – Lismore North Work Management Plan**) which identifies mitigation to avoid significant disturbance from routine operations during the sensitive pupping and moulting periods for harbour seals, June to August. This plan incorporates a commitment not to undertake any major works such as installation of cages during this sensitive period.

To ensure consistency in other relevant plans the ADD Deployment plan has been updated to incorporate additional mitigation identified in the Work Management Plan. A revised plan (**Appendix E – Revised Lismore North ADD Deployment Plan v0.2**) is enclosed.

### **Marine Scotland Science (MSS) response**

The MSS response of 24<sup>th</sup> January 2020 requested clarification or further information on the following:

#### Relinquishment of Port na Moralachd CAR licence

**MSS comment** - *The applicant has made reference to relinquishing the Port na Moralachd site however we would request that they confirm that this includes the CAR licence.*

**SSF response** - The 'Supporting Information' document which was submitted with the application clearly states in Section 3 that should the proposed development be approved, SSF will relinquish the CAR licence for Port na Moralachd. SSF reconfirm that this will be the case.

#### Details of cleanerfish availability

**MSS comment** - Confirmation that suitable numbers of cleanerfish can continue to be sourced to ensure stocking remains at a ration that will provide efficacious biological control was requested at the screening and scoping stage. This information does not appear to have been provided and should be submitted.

**SSF response** - Section 7 of the 'Supporting Information' document which covers wild migratory salmonids provided the requested information. This information is replicated below.

*Planned use of cleaner fish at Lismore North farm for the next farm cycle (commencing June 2020) will include wrasse stocked at 4% and potentially lumpfish later in the cycle, due to the early summer start of the farm cycle. SSF have no sourcing issues and can confirm we have agreements in place with dedicated suppliers of cleaner fish to ensure a sufficient ongoing supply that meets our planned stocking ratios for effective biological lice control.*

#### Addendum regarding recent UK-TAG recommendation

**MSS comment** - Slice would be available in sufficient quantities to treat a maximum biomass of 222 tonnes. However, the applicant has referred to an addendum regarding the recent UK-TAG recommendation which we have been unable to identify in the submitted documents. We would request that this be submitted for further assessment.

**SSF response** – The enclosed Addendum was submitted to SEPA alongside the 'Biomass and medicine modelling report' as part of the CAR licence variation application for Lismore North. This presented a re-run

of the Slice modelling using a minimum EQS for Slice recommended by UKTAG of 23.5 ng/kg dry weight. SEPAs interim position on Slice was updated in January 2020 and has applied this recommended EQS.

The run of the model using the revised EQS passes with a TAQ of 147g which relates to an equivalent treatable biomass of 420 tonnes. This would allow up to four treatments at the start of the production cycle.

### **Argyll District Salmon Fisheries Board (ADSF) response**

The ADSFB response of 10<sup>th</sup> January 2020 did not object to the Lismore North proposal but identified that they could not accept the terms of the proposed EMP which in their view did not fully implement the adaptive management approach.

**SFF response** – The proposed Linnhe EMP has been prepared by SSF in consultation with Argyll and Lochaber Fishery Boards and Trusts. As part of this process further changes have been made to the draft EMP originally submitted with the Lismore North planning application and the final proposed Linnhe EMP (**Proposed Linnhe Environmental Management Plan v0.7**) is enclosed for information. We feel that the proposed EMP is robust and is clear that farm management will be adapted in response to farmed and wild fish monitoring, enabling an effective and proportionate management action plan to be agreed through the end of cycle review process.

The key change made to the proposed EMP document is the inclusion in Section 8 of an 'Operator Meeting Request' procedure which allows the Fishery Boards and Trusts to raise a concern and trigger a meeting request. It should be noted also that Appendix A of the EMP which outlines the wild salmonid monitoring strategy is still under review and the fine detail of this will be discussed further with the Fishery Trusts in the coming months.

**From:** [REDACTED]  
**To:** <MS.MarineLicensing@gov.scot>  
**Subject:** SNH response to Marine Licence consultation - 05458V - Marine Harvest (Scotland) Limited - Variation to Existing Finfish Farm - Maclean's Nose, Loch Sunart - 17 January 2020  
**Date:** 17 January 2020 10:02:00  
**Attachments:** [image001.png](#)  
[PDF - Final - Macleans Nose Fish Farm expansion - 18\\_02922\\_FUL - SNH Planning response - 31 May 2019 \(A2953675\).pdf](#)  
[Standard response to Marine Licence consultation - 05458V - Marine Harvest \(Scotland\) Limited - Variation to Existing Finfish Farm - Maclean's Nose Loch Sunart - 17 January 2020.docx](#)

---

Dear [REDACTED]

Please find our standard response and copy of planning response attached.

Regards

[REDACTED]

[REDACTED] | **Operations Officer, Skye and Lochalsh**

Scottish Natural Heritage | King's House | The Green | Portree | Isle of Skye | IV51 9BS | t: 01463 [REDACTED]  
Dualchas Nàdair na h-A ba | Taigh an Rìgh | An Grianan | Port Rìgh | An t-Eilean Sgitheanach | IV51 9BS  
[nature.scot](#) – Connecting People and Nature in Scotland – [@nature\\_scot](#)

Please note - my telephone number has recently changed to 01463 [REDACTED] and my e-mail address has changed to [REDACTED]@nature.scot

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**From:** [REDACTED] <[REDACTED]@gov.scot>  
**Sent:** 10 January 2020 09:18  
**To:** [REDACTED] <[REDACTED]@nature.scot>  
**Subject:** RE: 05458V - Marine Harvest (Scotland) Limited - Variation to Existing Finfish Farm - Maclean's Nose, Loch Sunart - Consultation - Response Required by 01 November 2018

Good Morning [REDACTED]

Planning application 18/02922/FUL for Maclean's Nose fish farm has concluded and so MS-LOT now invites SNH comment on the marine licence application as laid out in the email below.

Kind regards,

[REDACTED]

---

**From:** [REDACTED] <[REDACTED]@nature.scot>  
**Sent:** 09 October 2018 08:58  
**To:** MS Marine Licensing <MS.MarineLicensing@gov.scot>  
**Subject:** RE: 05458V - Marine Harvest (Scotland) Limited - Variation to Existing Finfish Farm - Maclean's Nose, Loch Sunart - Consultation - Response Required by 01 November 2018

Good morning,

Thank you for your email below, consulting us on this Marine Licence application for Maclean's Nose Finfish Farm.

Normally we would send you a standard response and a copy of our planning response. However, we are yet to comment on the planning application for this proposal as we are awaiting resolution on another associated finfish farm case.

In light of this we are unable to respond to the Marine Licence application for this proposal at this time. Once the planning application for this case is concluded then we'll be in a position to provide a full response.

Kind regards,

[REDACTED]

[REDACTED] | **Operations Officer**

Scottish Natural Heritage | Fodderty Way | Dingwall Business Park | Dingwall | IV15 9XB | t: 01463 [REDACTED]  
Dualchas Nàdair na h-A ba | Slighe Fhodhratidh | Pàirc Gnothachais Inbhir Pheofharain | Inbhir Pheofharain | IV15 9XB  
[nature.scot](#) – Connecting People and Nature in Scotland - [@nature\\_scot](#)

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**From:** [MS.MarineLicensing@gov.scot](mailto:MS.MarineLicensing@gov.scot) [<mailto:MS.MarineLicensing@gov.scot>]

Sent: 03 October 2018 16:54

To: SOUTH\_HIGHLAND; [navigationsafety@mcga.gov.uk](mailto:navigationsafety@mcga.gov.uk); [navigation@nlb.org.uk](mailto:navigation@nlb.org.uk); [FO.Mallaig@gov.scot](mailto:FO.Mallaig@gov.scot); [scotland-marine@bidwells.co.uk](mailto:scotland-marine@bidwells.co.uk); [REDACTED]@ryascotland.org.uk; [REDACTED]@whales.org; [REDACTED]@whales.org; [REDACTED]@mod.gov.uk; [DIUSE-EPSESCDSL1@defence.gsi.gov.uk](mailto:DIUSE-EPSESCDSL1@defence.gsi.gov.uk); [REDACTED]@gmail.com

Subject: 05458V - Marine Harvest (Scotland) Limited - Variation to Existing Finfish Farm - Maclean's Nose, Loch Sunart - Consultation - Response Required by 01 November 2018

Dear Sir/Madam,

MARINE (SCOTLAND) ACT 2010, PART 4 MARINE LICENSING

05458V - Marine Harvest (Scotland) Limited - Variation to Existing Finfish Farm - Maclean's Nose, Loch Sunart

CO-ORDINATES

56° 41.197' N	006° 03.125' W
56° 41.381' N	006° 02.687' W
56° 40.952' N	006° 02.096' W
56° 40.773' N	006° 02.511' W

The Licensing Officer for this case is [REDACTED].

A marine licence has been requested under the above Act to undertake a variation to an existing finfish farm at a location below the level of Mean High Water Springs. For clarity, this is a request for an extension to an existing licensed finfish farm for an additional 4 cages and to remove and replace the feed barge. Licence application details and supplementary documents can be found at <http://marine.gov.scot/ml/05458-fish-farm-macleans-nose-loch-sunart>.

Should you have any comments on these proposals, I would be grateful if they could be forwarded to me in an electronic format ([MS.MarineLicensing@gov.scot](mailto:MS.MarineLicensing@gov.scot)) or as a hard copy within 28 days of the date of this email.

If you require an extension to the consultation period, please inform me in writing as soon as possible and within 28 days of this email. A maximum two week extension to the consultation period will only be granted where significant concerns are raised.

If an extension request or a written reply to this consultation is not received within 28 days, it will be assumed that you are content with the proposals.

Any licence that is subsequently issued for the proposed works will be made available on Marine Scotland Information at the address above.

Kind regards,

[REDACTED]

Marine Scotland - Marine Planning & Policy

Scottish Government | Marine Laboratory | 375 Victoria Road | Aberdeen | AB11 9DB

General Queries: +44 (0)300 244 5046

General Email: [MS.marinelicensing@gov.scot](mailto:MS.marinelicensing@gov.scot)

Website: <http://www.gov.scot/Topics/marine/Licensing/marine>



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Tha am post-d seo (agus faidhle neo ceanglan còmhla ris) dhan neach neo luchd-ainmichte a-mhàin. Chan eil e

ceadaichte a chleachdadh ann an dòigh sam bith, a' toirt a-steach còraichean, foillseachadh neo sgaoileadh, gun chead. Ma 's e is gun d'fhuair sibh seo gun fhiosd', bu choir cur às dhan phost-d agus lethbhreac sam bith air an t-siostam agaibh agus fios a leigeil chun neach a sgaoil am post-d gun dàil.

Dh'fhaodadh gum bi teachdaireachd sam bith bho Riaghaltas na h-Alba air a chlàradh neo air a sgrùdadh airson dearbhadh gu bheil an siostam ag obair gu h-èifeachdach neo airson adhbhar laghail eile. Dh'fhaodadh nach eil beachdan anns a' phost-d seo co-ionann ri beachdan Riaghaltas na h-Alba.

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Tha am post-dealain seo agus fiosrachadh sam bith na chois dìomhair agus airson an neach no buidheann ainmichte a-mhàin. Mas e gun d'fhuair sibh am post-dealain seo le mearachd, cuiribh fios dhan manaidsear-siostaim no neach-sgrìobhaidh.

Thoiribh an aire airson adhbharan gnothaich, 's dòcha gun tèid sùil a chumail air puist-dealain a' tighinn a-steach agus a' dol a-mach bho SNH.

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\*\*\*\*\*

From 1 May 2020, SNH will be rebranding and changing its name to NatureScot.



Scottish Natural Heritage  
Dualchas Nàdair na h-Alba  
**nature.scot**

By Email: [epc.planning@highland.gov.uk](mailto:epc.planning@highland.gov.uk)

FAO: [REDACTED]

Date: 31 May 2019

Your ref: 18/02922/FUL

Dear [REDACTED]

**Town & Country Planning (Scotland) Acts  
Expansion of existing marine fish farm – Maclean’s Nose, Loch Sunart**

Thank you for your consultation on the above proposal dated 2 July 2018

**1. Summary**

- **Ardnamurchan Burns Special Area of Conservation (SAC), Mingarry Burn SAC, Glen Beasdale SAC, River Moidart SAC**  
This proposal could be progressed with appropriate mitigation. However, because it could affect internationally important natural heritage interests, **we object to this proposal unless it is made subject to conditions so that the works are carried out in accordance with the mitigation summarised below and detailed in the Annexes.** If the planning authority intends to grant planning permission against this advice without the suggested mitigation, you must notify Scottish Ministers.
- **Inner Hebrides and the Minches candidate Special Area of Conservation (SAC):**  
There are natural heritage interests of international importance on the site, but in our view, these will not be adversely affected by the proposal. We recommend that you consider whether conditions are necessary.

**2. Background**

Maclean’s Nose is an existing fish farm which was consented in February 2015 and has been operational since summer 2015. We had concerns about possible impacts on some of the above SACs when it was first proposed. Those concerns were addressed by a condition requiring an Environmental Management Plan (EMP). The agreed EMP requires Aquaculture Stewardship Council (ASC) Standard for Salmon to be applied year round. The EMP also detailed reporting, monitoring and enforcement requirements including reducing the biomass until agreed lice thresholds could be demonstrated.

We advised on EIA scoping for the proposed expansion in November 2017 and that advice is reflected in the submitted EIA report. The current planning application, which proposes four additional cages and an increase in maximum biomass from 2500t to 3500t, was

Scottish Natural Heritage, Fodderty Way, Dingwall Business Park, Dingwall, IV15 9XB  
Tel: 01349 865333 [www.nature.scot](http://www.nature.scot)

Dualchas Nàdair na h-Alba, Slighe Fodhraitidh, Pàirc Gnìomhachas Inbhir Pheofharain,  
Inbhir Pheofharain IV15 9XB  
Fòn: 01349 865333 [www.nature.scot](http://www.nature.scot)

submitted in June 2018, but The Highland Council (THC) requested that we delayed our response to the Maclean's Nose consultation until a similar and related fish farm proposal at Muck (also a MOWI site) had been determined. THC acknowledged that the process applied for Muck would help inform the approach for Maclean's Nose. The Muck fish farm was consented in May 2019 and the permission included a planning condition requiring adherence to an EMP.

MOWI carried out sea lice dispersion modelling for both Muck and Maclean's Nose (in combination with their other two active fish farms in Loch Sunart) and we have taken this into account in formulating our advice to this current proposal.

We have also been in discussion with MOWI, the Lochaber District Salmon Fishery Board and Lochaber Fisheries Trust regarding the methodology for monitoring lice burdens on the coastal wild salmonids. That study is a requirement of both Muck fish farm expansion and the Maclean's Nose expansion.

### **3. Appraisal of the Impacts of the Proposal and Advice**

The proposal could affect Ardnamurchan Burns SAC, Mingarry Burn SAC, Glen Beasdale SAC and River Moidart SAC, all of which are designated for fresh water pearl mussel. It is also within Inner Hebrides and Minches SAC selected for harbour porpoise. It is adjacent to Sunart SAC designated for reefs, otters and a suite of terrestrial habitats.

These sites status' means that the requirements of the Conservation (Natural Habitats, &c.) Regulations 1994 as amended (the "Habitats Regulations") apply. Consequently, THC is required to consider the effect of the proposal on the SACs before it can be consented (commonly known as Habitats Regulations Appraisal). The SNH website has a summary of the legislative requirements (<https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/protected-species/legal-framework/habitats-directive-and-habitats-regulations>).

#### **3.1 Ardnamurchan Burns Special Area of Conservation (SAC), Mingarry Burn SAC, Glen Beasdale SAC, River Moidart SAC**

In our view, this proposal is **likely to have a significant effect on the freshwater pearl mussel** interests of all four of the sites listed above. Consequently, The Highland Council, as competent authority, is required to carry out an appropriate assessment in view of the sites' conservation objectives for their qualifying interests. To help you do this, we advise that in our view on the basis of the information provided, **if the proposal is undertaken strictly in accordance with the following mitigation, then the proposal will not adversely affect the integrity of the sites.**

An Environmental Management Plan should be agreed by the planning authority in consultation with SNH and, where relevant, other statutory bodies. This should include:

1. Monitoring of the wild salmonids in the SAC rivers on an annual basis using methodologies compatible with Marine Scotland sampling protocols.
2. Monitoring of sea lice numbers on wild salmonids in coastal waters at suitable locations, ideally close to the SACs.
3. Monitoring of sea lice numbers and recording of any associated treatments on the fish farm.
4. Annual submission of results to the local authority and other relevant bodies as well as an end of production cycle review process.
5. Details of actions that will be taken should the planning authority, following advice from specialists, confirm that intervention is needed to prevent an adverse effect on the integrity of the SAC(s). This should include details of all sea lice reduction

methods which will be available for use at this farm as well as criteria for early harvesting or other means of reducing biomass.

Much of this information has already been provided as part of the planning process. We have extracted a summary of the relevant undertakings provided by the developer and our initial suggestions on amendments required, see Annex B. Other changes may be necessary and **we recommend that these amendments be finalised prior to you concluding your appropriate assessment and issuing any consent.**

A summary of the Habitats Regulations Appraisal we carried out is provided in Annex A.

### **3.2 Inner Hebrides and Minches SAC:**

The application seeks to increase the number of Acoustic Deterrent Devices (ADDs) available for use on this site. Therefore, in our view, this proposal **is likely to have a significant effect on harbour porpoise of the SAC.** Consequently, Highland Council, as competent authority, is required to carry out an appropriate assessment in view of the site's conservation objectives for its qualifying interest.

To help you do this we advise that, in our view, **based on the information provided, the proposal will not adversely affect the integrity of the site.** The appraisal we carried out considered the impact of the proposals on the following factors:

- The site currently has permission to use one Terecos ADD device, although the application states that it has never been used. This proposal seeks to increase the number of Terecos devices available to two.
- An ADD deployment plan has been provided which specifies the circumstances when ADDs will be used and details the review process to ensure they are switched off promptly once the predation risk has passed. This plan is appropriate for the device proposed.
- Terecos ADD devices have lower output levels than many of the other devices on the market and the area within which disturbance and displacement may occur is restricted to the immediate vicinity of the farm. Their use would not block passage to harbour porpoise through the Sound of Mull or add significantly to cumulative underwater noise levels.
- We would like to highlight that these are constrained waters and more powerful devices could have more pronounced effects. If the developer wishes to deploy alternative devices then prior approval from you should be sought. If higher power devices were proposed then new assessment of the individual and cumulative impacts would be necessary. We recommend that you consider whether it is necessary to impose a condition to that effect.

### **3.3 Sunart SAC**

The proposed expansion remains outwith Sunart SAC and the benthic deposition is not predicted to impact on any designated reef. Otters using the shoreline and shallow waters will be used to the existing fish farm and the proposed expansion is unlikely to increase disturbance.

In our view, these proposals are **unlikely to have a significant effect on any features of the SAC** and no further consideration is required.

### 3.3 Loch Sunart to the Sound of Jura Nature NC MPA

The proposal lies within Loch Sunart to the Sound of Jura Nature Conservation Marine Protected Area (NC MPA) selected for its common skate and glaciated channels and troughs.

The site's status means that the requirements of the Marine (Scotland) Act 2010 apply. Consequently, Highland Council is required to consider the effect of the proposal on the NC MPA before it can be consented.

In our view, the proposal is capable of affecting the common skate protected feature of Loch Sunart to the Sound of Jura MPA. The proposal could theoretically result in a reduced availability of prey species, particularly crustaceans, in a localised area around the proposed development. It could also affect egg-laying areas of the skate locally through deposition of materials onto suitable substrate. However, the area affected will be small and within the context of the MPA as a whole these effects are insignificant. Further assessment is therefore not required.

### 3.4 Priority Marine Features

The benthic surveys indicate that the seabed in this location is burrowed mud habitat, including the tall sea pen *Funiculina quadrangularis*. The fireworks anemone *Pachycerianthus multiplicatus* is also present but at low density. Both the habitat and these two species are Priority Marine Features.

Taking into account the widespread nature of the burrowed mud habitat, the typical quality of the habitat in this location, the relatively small area affected, and the low density of *Funiculina* and *Pachycerianthus* observed; our advice is that this proposal will have only local effects on these interests.

## 4. Conclusion

If you have any questions about this response, please contact [REDACTED] [REDACTED]  
[REDACTED] [nature.scot](https://www.nature.scot) or 01463 [REDACTED]

Yours sincerely

[REDACTED]  
**Operations Manager**

cc. [REDACTED] [REDACTED] Marine Harvest

**Annex A – Summary appraisal of the impacts of the proposal and advice:  
Ardnamurchan Burns Special Area of Conservation (SAC); Mingarry Burn SAC; Glen  
Beasdale SAC; River Moidart SAC**

- There are four SACs designated for freshwater pearl mussel (FWPM) which may be affected by these proposals. These are Ardnamurchan Burns SAC, Mingarry Burns SAC, River Moidart SAC and Glen Beasdale SAC. These sites lie 11-50km from the fish farm: Ardnamurchan Burns SAC, River Moidart SAC and Glen Beasdale SAC are on the opposite (North) side of the Ardnamurchan peninsula; Mingarry Burns SAC lies to the west, at the north end of Mull.
- Wild salmonids are a key part of the FWPM life cycle. For most of the first year of their life, the FWPM larvae (glochidia) live on the gills of a juvenile Atlantic salmon or brown trout. All salmon and a proportion of brown trout (which subsequently become sea trout) migrate to sea, returning to freshwater to spawn. The conservation objectives for the FWPM SACs include ensuring that the '*Distribution and viability of freshwater pearl mussel host species*' are maintained in the long term.
- Fish farms contain a large number of potential hosts for sea lice, creating reservoirs of infection for wild salmonids. There is now a significant volume of correlative and circumstantial evidence that large numbers of farm-origin sea lice have adverse effects on wild Atlantic salmon and sea trout. Marine Scotland has summarised the science which is available [here](#)<sup>1</sup>.
- Densities of sea lice are influenced by distance from fish farms, as well as prevailing ocean currents and wind. Both connectivity and sea lice density have been modelled by MOWI, using the same current and climate data as used in the Marine Scotland Scottish Shelf Model. This modelling predicts that sea lice from Maclean's Nose will be transported north around the Ardnamurchan peninsula to Ardnamurchan Burns SAC and beyond. It predicts that moderate to high lice densities will occur around Glen Beasdale where lice will be concentrated by coastal topography and prevailing wind.
- FWPM in Ardnamurchan Burns SAC and Glen Beasdale SAC are dependent on brown trout/sea trout as their host. It is not clear what proportion of trout from the SACs migrates to sea, or the exact area that they spend their time. In general sea trout remain near shore for their first two months at sea and then disperse more widely. There is little understanding of the scale of sea trout dispersal or whether it is uniform in direction relative to the home river (Middlemas *et al.* 2009<sup>2</sup>, [Malcolm et al. 2010](#)<sup>3</sup>). This is likely to bring them into contact with sea lice originating from Maclean's Nose (as well as lice from other fish farms to the south).
- The host fish for River Moidart SAC is salmon. Salmon smolts are thought to migrate directly to their oceanic feeding grounds in the North Atlantic. This will reduce their exposure to any lice originating from Maclean's Nose.

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<sup>1</sup> <https://www2.gov.scot/Topics/marine/Salmon-Trout-Coarse/Freshwater/Research/Aqint/troutandlice>

<sup>2</sup> <https://royalsocietypublishing.org/doi/full/10.1098/rsbl.2009.0872>

<sup>3</sup> Malcolm, I.A. Godfrey J. & Youngson, A.F. (2010). Review of migratory routes and behaviour of Atlantic salmon, sea trout and European eel in Scotland's coastal environment: implications for the development of marine renewables. Scottish Marine and Freshwater Science, Vol 1 No14.

- While there are clearly risks to the wild salmonids, some of which are difficult to quantify based on current scientific evidence, we consider that such risks can be mitigated to acceptable levels using an adaptive management approach. This relies on: 1) monitoring lice levels at the fish farm 2) monitoring lice numbers on wild salmonids living in coastal waters close to the mouths of the SAC rivers 3) monitoring populations of juvenile salmonids in the SAC rivers and 4) undertakings by the developer to use a range of biological, physical and chemical control measures to keep lice levels on the farms low enough to allow sufficient FWPM recruitment to occur in the SACs and, if that is not possible, to reduce biomass or harvest the farm early.
- The adaptive management approach relies on agreement on the methods for each element of the monitoring, assessment of the data by independent specialists to determine the likely source of sea lice if wild salmonid populations decline; a robust EMP which allows THC to enforce action on the farm if necessary.
- The past management history of the site suggests that it has been a significant source of sea lice with counts frequently exceeding 1.0 to 2.0 adult female lice per fish level in the farm's first production cycle. However, during the initial cycle the farm was stocked with well grown fish from another marine site which arrived with an existing lice burden. There were notable improvements in the farm's second production cycle (regularly 0.2 to 1.0 lice adult females per fish). Indications are that a wider suite of new treatment methods have continued these improvements. While the trend is in the right direction, lice levels could return to previous levels at some point in the future, so safeguards are required.
- It is essential that Highland Council retain control of enforcement of the EMP and any future changes at this site. The intention is that they will be advised by The National Technical Advisory Group (NTAG). This group, made up of statutory bodies including SNH and SEPA and led by MS, will assess fish farm lice data and SAC monitoring data to determine whether particular farms may be adversely affecting SACs.
- Following the Scottish Parliament enquiries into Aquaculture, new regulatory mechanisms are being developed to control sea lice produced by fish farms. The exact mechanisms and timescales for implementation are still unclear and in the meantime applications such as this still need to be controlled through Planning.

**Annex B – Specific wording in EMP document relevant to FWPM SAC mitigation and some suggested amendments (NB: other changes may also be required).**

<b>Requirement</b>	<b>EMP source</b>	<b>EMP text</b>	<b>Issues arising</b>	<b>Amendments</b>
Monitoring juvenile salmonid populations in SAC rivers	Annex 1 - Appendix 3 - VF1 (20/06/2018)	Juvenile salmonids will be sampled by electrofishing following SFCC protocols. Where possible, three-run, fully quantitative surveys will be carried out. This may not be possible on the main River Moidart due to its width, and in this case single-run surveys providing minimum density estimates would be used instead. All surveys will be carried out between August and October in periods of low to medium water flows. The GRTS (Generalised Random Tessellation Stratified) design and juvenile assessment model being developed by Marine Scotland Science could be used to determine survey sites on the River Moidart, but could not be applied to the other SACs as it is specific to salmon. Both approaches have their drawbacks since the ability of the GRTS approach to provide a good assessment of salmon population status has not been fully validated, and historic electrofishing data	Clarification required regarding the SFCC protocols whether they appropriate? Should River Moidart (and Mingary Burn?) be subject to GRTS? Clarification and agreement that 'Surveys should be repeated preferably every year and at least every second year over the course of three farm production cycles' are acceptable.	Proposals to be based on submitted document but final version to be agreed by THC in consultation with SNH and/or Marine Scotland Science

		<p>show such high levels of variability between years that trends might not easily be determined. Surveys should be repeated preferably every year and at least every second year over the course of three farm production cycles. Also Annex 1 states that <i>'the operator will obtain suitable rights of access to enable monitoring of the SACs and coastal waters; in the event that this is not possible it is the applicant's responsibility to ensure that a suitable alternative is agreed with the LPA'</i></p>		
Monitoring sea lice on wild salmonids in coastal areas close to SACs	Annex 1 - Appendix 4 contains APEM feasibility study. This has been superseded by "APEM (2019) Proposed method statement for salmonid capture and sea lice count study and monitoring for four Scottish Special Areas of Conservation, P00002962. Client: Mowi, 26 April 2019, v2.0 Final, 22 pp." which is not on e-	Proposals are to mainly use seine and fyke netting in close proximity to the tidal limit of each SAC. Post smolts will be targeted at the request of the Lochaber Fisheries Trust and LDSFB. Aim is to catch 75 fish in total. Lice will be counted using standard methods. A proof of concept survey is to be undertaken at Glen Beasdale SAC in May 2019. Document states that <i>'It is proposed that monitoring for up to five years following the increase in production at the</i>	Clarification and agreement about whether bi-annual survey and/or a time limit meets the Natura tests - see below. Concern that specific proposals may not be feasible or achieve the necessary sample size	Proposals to be based on submitted document but final version to be agreed by THC in consultation with SNH and/or Marine Scotland Science

	planning.	<i>fish farms' and 'Sea lice numbers generally increase in the second year of the production cycle within a fish farm, in which case a bi-annual sampling program may be adopted'.</i>		
Counting sea lice at fish farm & taking action to control lice numbers	EMP Annex 1 - Management and monitoring measures associated with SACs for the protection of freshwater pearl mussel	Section 5 states <i>'the operator reserves the right to conduct sea lice counts at its farms above the CoGP requirements....this is a voluntary decision and is reflected in the current Farm Management Statement (e.g. twenty fish per pen and from every pen'.</i>	Higher lice counts allow greater confidence in the data.	THC may wish to consider whether to condition the greater intensity of counts.
Annual reporting with review at end of production cycle	EMP Annex 1 - Management and monitoring measures associated with SACs for the protection of freshwater pearl mussel	<i>Section 1 states: 'At present the appropriate regulatory authority is THC supported by specialist guidance from SNH. In the future it is possible that other groups or organisations, such as National Technical Groups will provide input and in this scenario regulatory responsibilities relative to the EMP Annex 1 should be reviewed and agreed with THC'. Section 5 states: 'As a minimum monitoring as described will continue if there is a scientifically justified legal requirement to do so. Monitoring would only cease</i>	Wording in Annex 1 is different to within Appendices 3 & 4. Annual reporting is linked to provision of a report by a sub-contractor. End of cycle reporting focuses on lice levels in relation to CoGP and MS levels rather than straightforward count figures.	Recommend that wording should be as in section 5 of Annex 1. Recommend that a specific date be set for receipt of the annual monitoring report. Recommend that all lice reporting should be based on weekly lice count data rather than compliance with CoGP or MS thresholds.

		<p><i>following written agreement with the LPA'. Also 'The Wild Salmonid Monitoring Plans will be reviewed upon completion of each annual survey, and if required adapted'. Section 6 states: 'A copy of the annual monitoring survey results (freshwater and coastal), alongside sea lice data for same period, will be sent to the LPA within 1 month of receipt of the Wild Salmonid Report. The operator will provide an opportunity to discuss and action management intervention if deemed appropriate by the regulatory authorities'. Section 6 also details what the end of cycle report would include: At a suitable time following the end of each production cycle a report will be produced from the data gathered from the wild fish surveys, farm-derived information on lice counts and any information relating to fish health and escapes. A review will be completed and actions identified, if any, that should be taken for the following production cycle. These measures will be</i></p>		
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		<p><i>added to the Summary Report and a copy sent to the LPA prior to stocking the next cycle. For clarity, as a minimum the Summary Report would specifically demonstrate: -</i></p> <ul style="list-style-type: none"><li><i>• a summary of results derived from the Wild Fisheries Monitoring, conclusions, and if required suggested actions to be implemented to safeguard the relevant SACs,</i></li><li><i>• lice levels relative to compliance with Marine Scotland;</i></li><li><i>• data relating to compliance with CoGP lice levels;</i></li><li><i>• action taken to manage lice levels should intervention have been needed, and;</i></li><li><i>• a management plan for the following cycle.</i></li></ul> <p><i>A copy of the summary report would be sent directly to and discussed with other regulatory agencies or technical specialist, such as Scottish Natural Heritage and National Technical Groups in agreement with the LPA. In the unlikely event that further clarity or action is required, the report would be followed up with such meetings and discussions felt</i></p>		
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		<i>appropriate by the LPA.</i>		
Backstop action to reduce biomass/harvest early if lice numbers cannot be brought under control on reasonable timescales <u>and</u> there are high lice burdens on coastal salmonids <u>and</u> juvenile populations in rivers are low <u>and</u> connectivity with farm cannot be disproved.	EMP Annex 1 - Management and monitoring measures associated with SACs for the protection of freshwater pearl mussel	<i>Section 4 states: 'Following analysis of the annual monitoring information by the Local Authority, and conclusion that the increased operations at Maclean's Nose Salmon Farm is adversely affecting the integrity of the relevant SACs, appropriate management interventions, based on scientific justification, would be implemented including those instructed by the Local Planning Authority'</i>	Wording may not meet the conservation objectives for the sites.	Recommend that wording be amended to: <i>...and conclusion that the developer has not demonstrated beyond reasonable scientific doubt that the operations at Maclean's Nose Salmon Farm are not adversely affecting the integrity of the relevant SACs, appropriate management interventions would be implemented including those instructed by the Local Planning Authority'.</i>

Marine Scotland – Licensing Operations Team  
Scottish Government  
Marine Laboratory  
375 Victoria Road  
Aberdeen  
AB11 9DB

FAO: [REDACTED] [REDACTED]

Date: 17 January 2020

Your Ref: 05458V

Dear Sir/Madam,

**Marine (Scotland) Act 2010, Part 4 Marine Licensing  
05458V - Marine Harvest (Scotland) Limited - Variation to Existing Finfish Farm -  
Maclean's Nose, Loch Sunart**

Thank you for your recent consultation.

In so far as our remit is concerned the issues raised by this proposal are fully addressed through the planning process. We therefore do not intend to offer further detailed comment on this specific application. We attach a copy of advice to Highland Council.

In most cases planning permission will be granted prior to Marine License applications being submitted. In some cases the associated planning permission may have conditions attached to it which are relevant to the Marine Licence.

MS-LOT is required to consider the potential for proposals to impact upon the protected features of protected areas (Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) (Annex 1) and Nature Conservation Marine Protected Areas (NC MPAs) (Annex 2)). You can use our [interactive mapping tool](#) to find out where these are and what they have been designated to protect. The legislative requirements of these sites can also be found on our [website](#).

In most instances the planning authority will have already undertaken the relevant assessments. Should you agree with the conclusions, you may wish to adopt any existing designated site assessments before determining the application.

We recommend that you consult with the planning authority in order to:

- 1) ensure that the information supplied by the applicant is accurate and conforms to the most up-to-date planning permission
- 2) confirm that you are content with planning authority's assessment of any effects on SACs and SPAs, where this is relevant
- 3) confirm that you are content with planning authority's assessment of any effects on NC MPAs, where this is relevant.

Yours sincerely,

[REDACTED] | **Operations Officer, Skye and Lochalsh**

Scottish Natural Heritage | King's House | The Green | Portree | Isle of Skye | IV51 9BS | t: 01463  
[REDACTED] Dualchas Nàdair na h-Alba | Taigh an Rìgh | An Grianan | Port Rìgh | An t-Eilean Sgitheanach  
| IV51 9BS

## **Annex 1. Special Areas of Conservation (SACs) and Special Protection Areas (SPAs)**

Within SACs and SPAs the requirements of the Conservation (Natural Habitats, &c.) Regulations 1994 as amended (the “Habitats Regulations”) apply. Consequently, Marine Scotland is required to consider the effect of the proposal on the site before it can be consented (commonly known as Habitats Regulations Appraisal). Our website has a summary of the legislative requirements (<http://www.snh.gov.uk/docs/A423286.pdf>).

## **Annex 2. Marine Protected Areas (MPAs)**

Where proposals lie within Nature Conservation Marine Protected Area (NC MPA) the requirements of the Marine (Scotland) Act 2010 apply. Consequently, Marine Scotland is required to consider the effect of the proposal on the NC MPA before it can be consented.

**From:** [REDACTED]  
**To:** [REDACTED] [highland.gov.uk](mailto:highland.gov.uk); [REDACTED]  
**Cc:** [REDACTED]; [REDACTED] [otag.com](mailto:otag.com)  
**Subject:** Sconser Quarry ADD Deployment Guidance - Discharge of Condition 3 of Planning  
**Date:** 24 July 2019 09:20:28  
**Attachments:** [image002.jpg](#)  
[ADD Deployment Guidance\\_v5.docx](#)

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Good Morning,

Please see attached ADD deployment plan for Sconser Quarry. This has been produced to discharge planning condition 3 of the planning appeal notice.

This plan has been developed through consultation with SNH and OTAG and follows best practice based upon assessment of the Otag SealFence operation.

We are aware there have been separate discussions regarding research on the SealFence, taking which into consideration we feel the ADD Plan attached in now in a suitable final draft stage to present to the Highland Council and SNH for comment, review and approval.

We would appreciate any feedback on the attached plan, once approved we then propose to voluntarily provide a cumulative assessment and plan for the existing sites within the area that have no ADD conditions, with the aim of moving them on to the same guidance.

If there are any issue or if you wish to discuss anything in the attached document, please do not hesitate to get in touch.

Thank you,

Best regards

[REDACTED]  
**Senior Environmental Analyst**

Mowi Scotland Limited

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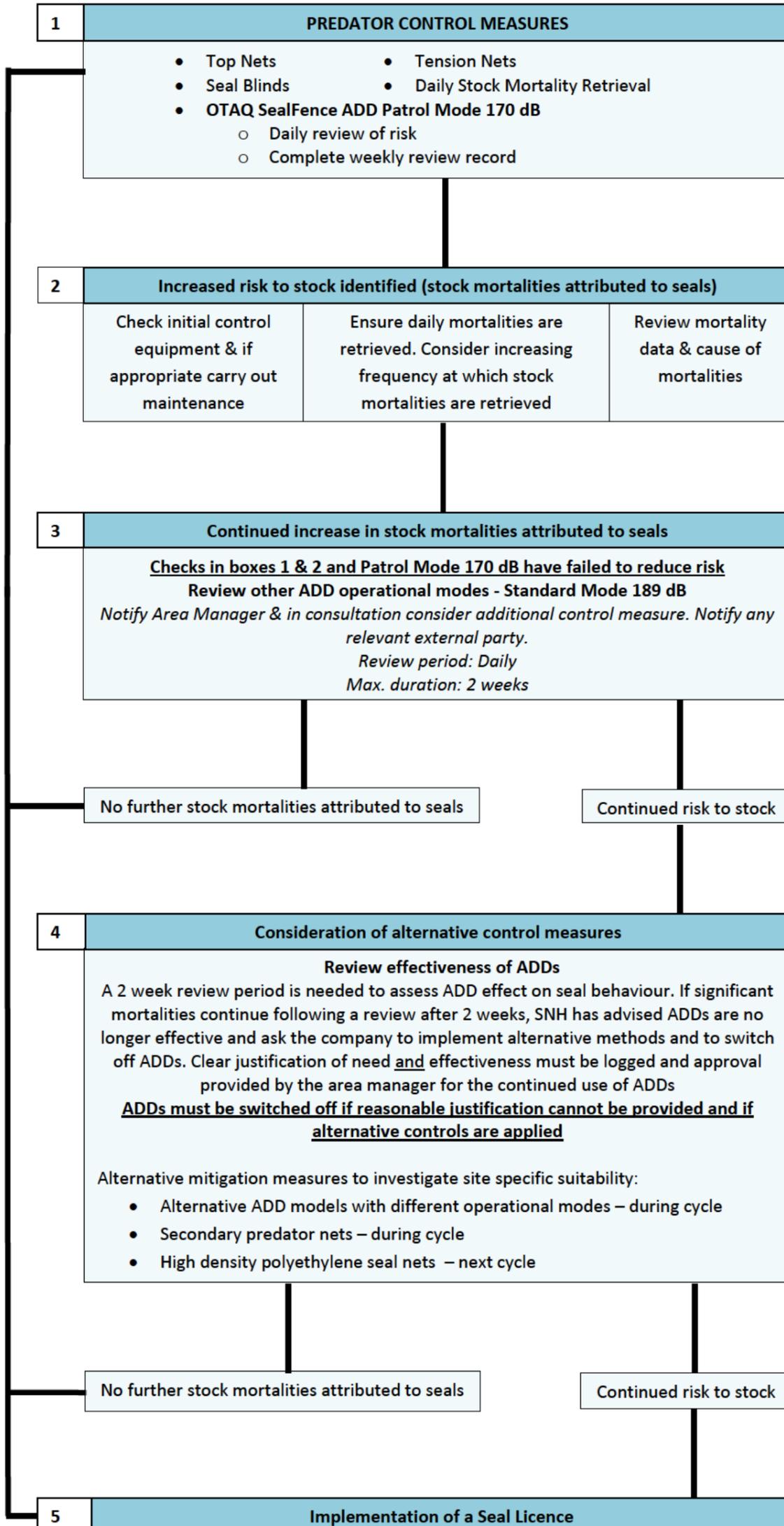
This e-mail sent from the company specified above and any attachment are confidential and may be privileged or otherwise protected from disclosure. It is solely intended for the person(s) named above. If you are not the intended recipient, any reading, use, disclosure, copying or distribution of all or parts of this e-mail or associated attachments is strictly prohibited. If you are not an intended recipient, please notify the sender immediately by replying to this message or by telephone and delete this e-mail and any attachments permanently from your system. It is not guaranteed that emails or attachments are secure or error or virus free.

# SCONSER QUARRY SALMON FARM

## ACOUSTIC DETERRENT DEVICE DEPLOYMENT GUIDANCE

Under the Regulation 39(2) of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), it is an offence to deliberately or recklessly disturb any dolphin, porpoise or whale (cetacean). Furthermore, the farm is located within the Inner Hebrides and Minches Special Area of Conservation (SAC) for the protection of harbour porpoise. Scottish Natural Heritage advise that the use of ADDs has the potential to lead to disturbance/habitat exclusion of harbour porpoise. The following deployment plan has been developed as a requirement of Scottish Natural Heritage to guide the efficient use of ADDs with due regard to the responsible management of fish welfare and protection given to seal species.

### DECISION MAKING FLOW DIAGRAM



### ROLES & CONSIDERATIONS

Mowi Scotland Ltd and its site managers have a responsibility to maintain the welfare of its stock. The RSPCA welfare standard is based on 5 core freedoms covering the freedom from pain, injury, fear and distress. Sites are independently assessed by Freedom Foods and RSPA Officers prior certification to this standard

#### Key considerations:

Is there a licence condition or other mechanism which prevent the use of ADDs?

Are any external notifications required before or after use?

If yes, notification sent to, or permission sought from, relevant external party. If in doubt, please consult the Mowi Scotland Ltd Environmental Team

The Site Manager is responsible for:-

- maintaining a record of the deployment date, make & model of device, dates of use, settings used, the position of the transducers
- a daily review as to whether an increased risk is still present and whether the ADDs can be switched back to Patrol Mode 170 dB or if additional measures are required. Any changes to ADD use should be recorded, and
- a fortnightly review in conjunction with Area Manager as to whether the risk is still present and whether additional measures are required; actions and justification to be recorded in a log by the Site Manager.
- Site and Area Manager to review ADD use at the end of each cycle.

Marine (Scotland) Act - From the 31st January 2011, any fish farm in Scotland that requires to manage seals, at any time of year, will need an annual Seal Management Licence. Predator control at the salmon farm should be managed in a manner which is compliant with the conditions of its licence.

Prior to taking further steps, the Site Manager must ensure that the following documents have been completed and approval formally issued by the Seawater Production Manager:-

Authorisation to dispatch seal  
 Contractor's guidelines – seal dispatch

Please refer to the Seal Protocol for further details or seek guidance from your Area Manager.

# CARRADALE SALMON FARM

## ACOUSTIC DETERRENT DEVICE DEPLOYMENT GUIDANCE

Under the Regulation 39(2) of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), it is an offence to deliberately or recklessly disturb any dolphin, porpoise or whale (cetacean). Furthermore, the farm is located within the Inner Hebrides and Minches Special Area of Conservation (SAC) for the protection of harbour porpoise. Scottish Natural Heritage advise that the use of ADDs has the potential to lead to disturbance/habitat exclusion of harbour porpoise. The following deployment plan has been developed as a requirement of Scottish Natural Heritage to guide the efficient use of ADDs with due regard to the responsible management of fish welfare and protection given to seal species.

INITIAL PREDATOR CONTROL MEASURES	
<ul style="list-style-type: none"> <li>• Top Nets</li> <li>• Seal Blinds</li> </ul>	<ul style="list-style-type: none"> <li>• Tension Nets</li> <li>• Daily Stock Mortality Retrieval</li> </ul>

Increased risk to stock identified (stock mortalities attributed to seals)		
Check initial control equipment & if appropriate carry out maintenance	Ensure daily mortalities are retrieved. Consider increasing frequency at which stock mortalities are retrieved	Review mortality data & cause of mortalities

Continued increase in stock mortalities attributed to seals
<p><b><u>Checks in boxes 1 &amp; 2 have failed to reduce risk</u></b>  <b>ADD's switched on – Patrol Mode 170 dB</b>  <i>Notify Area Manager &amp; in consultation consider additional control measure. Notify any relevant external party.</i>  <i>Review period: Daily</i>  <i>Max. duration: 2 weeks</i></p>

No further stock mortalities attributed to seals	Continued risk to stock
--	-------------------------

Continued increase in stock mortalities attributed to seals
<p><b><u>Patrol Mode 170 dB (box 3) has failed to reduce risk</u></b>  <b>Review other ADD operational modes - Standard Mode 189 dB</b>  <i>Notify Area Manager &amp; in consultation consider additional control measure. Notify any relevant external party.</i>  <i>Review period: Daily</i>  <i>Max. duration: 2 weeks</i></p>

No further stock mortalities attributed to seals	Continued risk to stock
--	-------------------------

Consideration of alternative control measures
<p><b>Review effectiveness of ADDs</b></p> <p>A 2 week review period is needed to assess ADD effect on seal behaviour. If significant mortalities continue following a review after 2 weeks, SNH has advised ADDs are no longer effective and ask the company to implement alternative methods and to switch off ADDs. Clear justification of need <u>and</u> effectiveness must be logged and approval provided by the area manager for the continued use of ADDs</p> <p><b><u>ADDs must be switched off if reasonable justification cannot be provided and if alternative controls are applied</u></b></p> <p>Alternative mitigation measures to investigate site specific suitability:</p> <ul style="list-style-type: none"> <li>• Alternative ADD models with different operational modes – during cycle</li> <li>• Secondary predator nets – during cycle</li> <li>• High density polyethylene seal nets – next cycle</li> </ul>

No further stock mortalities attributed to seals	Continued risk to stock
--	-------------------------

Mowi Scotland Ltd and its site managers have a responsibility to maintain the welfare of its stock. The RSPCA welfare standard is based on 5 core freedoms covering the freedom from pain, injury, fear and distress. Sites are independently assessed by Freedom Foods and RSPA Officers prior certification to this standard

**Key considerations:**

Is there a licence condition or other mechanism which prevent the use of ADDs?

Are any external notifications required before or after use?

If yes, notification sent to, or permission sought from, relevant external party. If in doubt, please consult the Mowi Scotland Ltd Environmental Team

The **Site Manager** is responsible for:-

- maintaining a record of the deployment date, make & model of device, dates of use, settings used, the position of the transducers
- a daily review as to whether an increased risk is still present and whether the ADDs can be switched back to Patrol Mode 170 dB or if additional measures are required. Any changes to ADD use should be recorded, and
- a fortnightly review in conjunction with **Area Manager** as to whether the risk is still present and whether additional measures are required; actions and justification to be recorded in a log by the **Site Manager**.
- **Site and Area Manager** to review ADD use at the end of each cycle.

Marine (Scotland) Act - From the 31st January 2011, any fish farm in Scotland that requires to manage seals, at any time of year, will need an annual Seal Management Licence. Predator control at the salmon farm should be managed in a manner which is compliant with the conditions of its licence.

Prior to taking further steps, the Site Manager must ensure that the following documents have been completed and approval formally issued by the Seawater Production Manager:-

Authorisation to dispatch seal  
 Contractor's guidelines – seal dispatch

Please refer to the Seal Protocol for further details or seek guidance from your Area Manager.

**From:** [REDACTED]  
**To:** [REDACTED] [highland.gov.uk](mailto:[REDACTED]@highland.gov.uk)  
**Cc:** [REDACTED] [scottishsalmon.com](mailto:[REDACTED]@scottishsalmon.com); [REDACTED]; [REDACTED]  
**Bcc:** [REDACTED]  
**Subject:** Portree fish farm - 16/03352/FUL - Update following meeting of 7 June 2019 and OSC underwater noise monitoring - 30 August 2019  
**Date:** 30 August 2019 16:10:00

---

Dear [REDACTED]

At our meeting of 7 June with yourself, SSC, OTAQ & OSC we agreed that there could be a further temporary (3 month) extension relating to the discharge of condition 1 for Portree fish farms. As agreed, my colleague [REDACTED] [REDACTED] subsequently met with OSC to discuss the underwater noise monitoring that they had carried out on the OTAQ SealFence device in situ at Portree fish farm.

The OSC study provided a useful snap-shot of the output of the OTAQ transducer in situ, suggesting a lower output than previous lab-based analysis. While we are disappointed that OTAQ are not prepared to publish the report, our initial view is that it is likely to be sufficient for us to update our HRA advice to you for this site.

As this is a sensitive location, and the ADD system has been operating for this trial period, we request sight of the information that SSC and OTAQ collect under section 3.3 of the ADD plan. Much will rest on the annual review meetings and we are keen to see the information that has been collected since the system was first deployed in March.

Thanks

[REDACTED]

[REDACTED] | **Operations Officer, Skye and Lochalsh**

Scottish Natural Heritage | King's House | The Green | Portree | Isle of Skye | IV51 9BS | t: 01463

[REDACTED] Dualchas Nàdair na h-Alba | Taigh an Rìgh | An Grianan | Port Rìgh | An t-Eilean

Sgìtheanach | IV51 9BS

[nature.scot](http://nature.scot) – *Connecting People and Nature in Scotland* – [@nature\\_scot](https://twitter.com/nature_scot)

Please note - my telephone number has recently changed to 01463 [REDACTED] and my e-mail address has changed to [REDACTED] [nature.scot](mailto:[REDACTED]@nature.scot)

---

**From:** [REDACTED] [mailto:[REDACTED]@nature.scot]

**Sent:** 07 [REDACTED] 2019 20:39

**To:** [REDACTED] highland.gov.uk' <[REDACTED]@highland.gov.uk>

**Cc:** [REDACTED] <[REDACTED]@nature.scot>; [REDACTED] <[REDACTED]@nature.scot>;

[REDACTED] <[REDACTED]@scottishsalmon.com>

**Subject:** SNH advice to THC - Version A7 (4 March) of SSC ADD Deployment Plan for Portree fish farms can be used to discharge condition 1 of permission 16/03352/FUL on a time-limited basis - 7 March 2019

Dear [REDACTED] (cc. [REDACTED] [REDACTED])

As you know, Scottish Salmon Company (SSC) have been discussing their ADD deployment plan for Portree Outer fish farm with us. We support their objective to carry out a scientific assessment of sound characteristics of the ADDs *in situ* and their likely effect on cetaceans. This

research will be of benefit for assessing this proposal and is also likely to have wider applicability.

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To help you do this we advise that, **in our view, based on the information provided, the proposed use of ADDs at this site will not adversely affect the integrity of the site.** The appraisal we carried out considered the impact of the proposals on the following factors:

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- Scientific advice provided by Ocean Science Consulting Ltd (OSC) states that there would be no auditory injury to harbour porpoise. This means that conservation objective 2a will be met (Harbour porpoise are not at significant risk from injury or killing).
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proposed are found to be ineffective in deterring seals. We would not expect this to be overly prescriptive but it could outline the constraints of the various options.

Regards

█

█ | **Operations Officer, Skye and Lochalsh**

Scottish Natural Heritage | King's House | The Green | Portree | Isle of Skye | IV51 9BS | t: 01463

█ Dualchas Nàdair na h-Alba | Taigh an Rìgh | An Grianan | Port Rìgh | An t-Eilean

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Please note - my telephone number has recently changed to 01463 █ and my e-mail address has changed to █ [nature.scot](mailto:█@nature.scot)

---

**From:** █ [mailto:█@scottishsalmon.com]

**Sent:** 04 █ 2019 17:27

**To:** █

**Cc:** █ highland.gov.uk'

**Subject:** RE: SNH comments on 19 February version SSC ADD Deployment Plan for Portree fish farms

Hi █

Thanks for the feedback, attached are the following documents:

1. 190304 Portree Outer ADD plan\_A7\_TC1 **MB Note:** Some tracked changes to confirm what we have accepted
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We hope this version of the ADD plan can be approved and therefore be implemented as necessary for the next 2 months in which time we will collect and analyse the empirical data, followed by the reporting and agreed meeting to discuss the outputs.

I look forward to hearing back from you at the earliest opportunity.

Best

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**From:** █ [mailto:█@nature.scot]

**Sent:** 01 █ 2019 13:06

**To:** █ <█@scottishsalmon.com>

**Cc:** █ <█@nature.scot>; █ <█@nature.scot>;

██████████ highland.gov.uk' <██████████@highland.gov.uk>

**Subject:** SNH comments on 19 February version SSC ADD Deployment Plan for Portree fish farms

Dear ██████ (cc. ██████ ██████)

Thank you for arranging the teleconference meeting on 12 February. We welcome SSC's science-led approach to ADD deployment across both your Portree fish farm sites. In particular we note your undertakings to:

- 1) Reduce the output of the ADD devices (source level of 170 db re 1mPa.m RMS);
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- 3) Scientific advice provided by Ocean Science Consulting Ltd that there would be no auditory injury to harbour porpoise;
- 4) Empirical testing of the system on site at Portree will be carried out by independent scientists (OSC) and reported on a defined timescale.

We have discussed the issues raised with ██████ ██████ at THC. ██████ advised that because of the way the ADD planning condition is worded **all undertakings, including the time-limited nature of the ADD deployment, must be contained within the ADD deployment plan itself**. He also requested that we try to address as many of the issues as possible this stage, rather than deferring them until after the research is completed.

In order to expedite the process, we have included recommended amendments as tracked changes on your latest draft ADD deployment plan (attached). Please can you review our tracked changes and comments and send us your revised plan. Our hope is that, at that stage, we can write to THC to inform them that we support the plan and that there would be no adverse effect on the integrity of Inner Hebrides and the Minches cSAC. That would help THC to discharge the planning condition timeously.

On a related matter, we recommend that you ask OSC to consider a range of scenarios in their noise modelling, including increased ADD source levels and/or changes to the operation mode. We want to be prepared for a potential scenario where the proposed ADD system does not prove as effective as hoped at the prescribed source level of 170 dB re 1μPa (rms). That would feed into the '*consideration of alternatives*' box towards the bottom of your flow chart.

Let me know if you want any clarification.

Regards

██████████

██████████ ██████████ | **Operations Officer, Skye and Lochalsh**

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**From:** [REDACTED] [mailto:[REDACTED]@scottishsalmon.com]  
**Sent:** 14 February 2019 15:20  
**To:** [REDACTED]  
**Cc:** Ian Todd; [REDACTED]@osc.co.uk; [REDACTED]  
**Subject:** SSC - SNH Portree ADD Updated Plan  
**Importance:** High

Hi [REDACTED] and [REDACTED]

Dear [REDACTED] and [REDACTED]

Many thanks for your time on the call on

The updated ADD plan attached will be operated on Patrol Mode across both sites. As discussed on Tuesday, Portree Outer does not have ADDs deployed, as we have been in the process of finalising the ADD plan for approval;

2. We anticipate that the revised desk-based underwater-noise modelling (which is in final stages of completion) will determine that it is unlikely that the Patrol Mode will affect non-target marine mammals, e.g. the harbour porpoise, (HP);
3. However, we plan to carry out empirical testing of the system on site at Portree to verify the modelling, and we expect all calculated ranges to be reduced;
4. The noise-modelling report includes Sound Exposure Level (SEL), which is a cumulative metric (calculated as if the system was running for 24-hours continuously); however, this figure is conservative, because in Patrol Mode, the system operates for 1.5 seconds with 10-second intervals (about an eighth of a 24-hour period), and furthermore, the system will only be operated when a seal is considered to be a threat, which means cumulative impacts will be reduced;
5. To reiterate we will operate the system in Patrol Mode, both on Portree Outer and existing Portree site, therefore reducing overall potential impact of the system on HP;
6. OSC's modelling has already shown that, when using Southall (2007) criteria, there would be no auditory injury to HP (unless directly adjacent to the source (0m) and a behavioural effect on HP 30 m away from the source;
7. NOAA (2016 & 2018) criteria demonstrate that there may be an effect greater than the width of the channel, but we expect this range to be reduced with the latest modelling, and even more so, after empirical measurements of the system; and,
8. We propose that the system only be used for part of the year, and only as and when required.

Due to extenuating circumstances, and the delay in finalising the ADD plan, we now seek to interim approval for the use of the ADDs at Portree outer to ensure the health and welfare of our stock, which is our priority.

If you could please review the ADD plan and provide advice so that we may proceed with the ADD plan, at least for an interim time period in order that we maintain the integrity of our containment and maintain our high standards of welfare.

We look forward to a response at the earliest opportunity.

Best regards

██████████ ██████████  
Head of Site Development

8 Melville Crescent, Edinburgh  
Scotland EH3 7JA  
Tel: +44 (0)131 718 8500  
DD: 0131 ██████████  
Mob: ██████████  
[www.scottishsalmon.com](http://www.scottishsalmon.com)

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Thoiribh an aire airson adhbharan gnothaich, 's dòcha gun tèid sùil a chumail air puist-dealain a' tighinn a-steach agus a' dol a-mach bho SNH.

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buntainneach, agus chan eil am post-d seo na phàirt de chunradh sam bith mura h-eil sin air innse.

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Èisteachd \* Fosgailte \* Luach \* Leasachadh \* Taic \* Com-pàirteachas \*  
Libhrigeadh

**From:** [REDACTED]  
**To:** [REDACTED]  
**Subject:** RE: SNH advice to THC - Version A7 (4 [REDACTED] of SSC ADD Deployment Plan for Portree fish farms can be used to discharge condition 1 of permission 16/03352/FUL on a time-limited basis - 7 March 2019  
**Date:** 30 August 2019 14:24:00

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All: just to say I called [REDACTED] a short while ago, in connection with his email to me, mentioned by [REDACTED] below. In practice, all he was wanting was an update on our advice provision to HC; I was able to say that you guys had been discussing the case yesterday, and were drafting a response, therefore I expected it to go out soon. Hope that's ok.

[REDACTED]

[REDACTED] [REDACTED] | **Policy and Advice Manager | Marine Energy and Development**

Scottish Natural Heritage | Battleby | Redgorton | Perth | PH1 3EW | t: 01738 [REDACTED] | m: [REDACTED]

[REDACTED]

Dualchas Nàdair na h-Alba | Battleby | Ràth a' Ghoirtein | Peairt | PH1 3EW

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**From:** [REDACTED]  
**Sent:** 30 August 2019 12:32  
**To:** [REDACTED]  
**Subject:** FW: SNH advice to THC - Version A7 (4 March) of SSC ADD Deployment Plan for Portree fish farms can be used to discharge condition 1 of permission 16/03352/FUL on a time-limited basis - 7 March 2019

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**From:** [REDACTED]  
**Sent:** 30 August 2019 11:42  
**To:** [REDACTED]  
**Subject:** RE: SNH advice to THC - Version A7 (4 March) of SSC ADD Deployment Plan for Portree fish farms can be used to discharge condition 1 of permission 16/03352/FUL on a time-limited basis - 7 March 2019

I'm happy with the draft response inc [REDACTED] suggestion. When we update our HRA advice, for the avoidance of doubt we will need to refer to and append the agreed final ADD deployment plan which we are basing our assessment on. Also need to make sure [REDACTED] H is happy that the existing condition gives HC sufficient control to enforce changes to the plan should they be deemed necessary in the future.

Happy to discuss.

[REDACTED]

---

**From:** [REDACTED]  
**Sent:** 30 August 2019 10:12  
**To:** [REDACTED]  
**Subject:** RE: SNH advice to THC - Version A7 (4 March) of SSC ADD Deployment Plan for Portree fish farms can be used to discharge condition 1 of permission 16/03352/FUL on a time-limited basis - 7 March 2019

[REDACTED]

I've suggested a slight change, so our advice is not conditional on the data. I think the ADD plan does only talk about the patrol mode, but I have a feeling that may be a mistake on their part, I don't believe that they do not intend to use standard mode as well.

As an aside we have OTAQ requesting a call either today or Monday. [REDACTED] [REDACTED] has contacted [REDACTED] I'll speak to [REDACTED] about this, this morning.

[REDACTED]

---

**From:** [REDACTED] [REDACTED]  
**Sent:** 29 August 2019 18:36  
**To:** [REDACTED] [REDACTED] [REDACTED] [REDACTED]  
**Subject:** FW: SNH advice to THC - Version A7 (4 March) of SSC ADD Deployment Plan for Portree fish farms can be used to discharge condition 1 of permission 16/03352/FUL on a time-limited basis - 7 March 2019

[REDACTED] and [REDACTED]

Really useful discussion earlier – many thanks.

I initially tried writing this e-mail to discharge the condition permanently but the request for data made it sound a bit odd – why were we saying it was all OK but requesting their data early? Does this work? I would copy it to [REDACTED] [REDACTED] too. The alternative would be to update the HRA and request a date for the review meeting at end of May 2020?

Dear [REDACTED]

*At our meeting of 27 May with yourself, SSC, OTAQ & OSC we agreed that there would be a further temporary (3 month) extension relating to the discharge of condition 1 for Portree fish farms. As agreed, my colleague [REDACTED] [REDACTED] subsequently met with OSC to discuss the underwater noise monitoring that they had carried out on the OTAQ seal fence device in situ at Portree fish farm.*

*The OSC study provided a useful snap-shot of the output of the OTAQ transducer in situ, suggesting a lower output than previous lab-based analysis. While we are disappointed that OTAQ are not prepared to publish the report, our initial view is that it is likely to be sufficient for us to update our HRA advice to you for this site.*

*As this is a sensitive site, and the ADD system has been operating for this trial period, we request sight of ~~Before we finalise that advice we would like to see~~ the information that SSC and OTAQ ~~are collecting~~ collect under section 3.3 of the ADD plan. Much will rest on the annual review meetings and we are keen to see the sort of information that has been collected over the first 3 months of deployment.*

Thanks

[REDACTED]

[REDACTED] [REDACTED] | **Operations Officer, Skye and Lochalsh**

Scottish Natural Heritage | King's House | The Green | Portree | Isle of Skye | IV51 9BS | t: 01463

[REDACTED] Dualchas Nàdair na h-Alba | Taigh an Rìgh | An Grianan | Port Rìgh | An t-Eilean

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**From:** [REDACTED] [REDACTED] [[mailto:\[REDACTED\]@nature.scot](mailto:[REDACTED]@nature.scot)]

Sent: 07 [REDACTED] 2019 20:39

To: [REDACTED] highland.gov.uk' <[REDACTED]@highland.gov.uk>

Cc: [REDACTED] <[REDACTED]@nature.scot>; [REDACTED] <[REDACTED]@nature.scot>;  
[REDACTED] <[REDACTED]@scottishsalmon.com>

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**Sent:** 01 [redacted] 2019 13:06  
**To:** [redacted] <[redacted]@scottishsalmon.com>  
**Cc:** [redacted] <[redacted]@nature.scot>; [redacted] <[redacted]@nature.scot>; [redacted]@highland.gov.uk' <[redacted]@highland.gov.uk>  
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required.

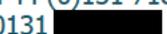
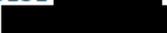
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Best regards

  
Head of Site Development

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Scotland EH3 7JA  
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DD: 0131   
Mob:   
[www.scottishsalmon.com](http://www.scottishsalmon.com)

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Thoiribh an aire airson adhbharan gnothaich, 's dòcha gun tèid sùil a chumail air puist-dealain a' tighinn a-steach agus a' dol a-mach bho SNH.

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Èisteachd \* Fosgailte \* Luach \* Leasachadh \* Taic \* Com-pàirteachas \*  
Libhrigeadh

**From:** [REDACTED]  
**To:** [REDACTED] [highland.gov.uk](mailto:[REDACTED]@highland.gov.uk)  
**Subject:** RE: ADDs - Scalpay, Sconser Quarry, Portree  
**Date:** 30 August 2019 09:44:00

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[REDACTED]

Hope your travels were uneventful.

I met with [REDACTED] and [REDACTED]. This is for info only – we will write formally for each case separately.

We discussed Portree. We think OSC research is fine as far as it goes but was limited duration and lack of publication will limit wider applicability. Let us know if you want a copy of [REDACTED] notes from her 'viewing' of the report. Use of Patrol Mode as proposed is acceptable in long term and we will write to you to update our earlier advice. It would be helpful to see the ADD usage data they've collected thus far and will include that request in our response too since the annual/production cycle review meetings will be critical to the process in the long term.

For Sconser Quarry we will go back to MOWI to say that the current proposals (constant use of Patrol mode and possibly extensive use of Standard mode) are not acceptable especially in terms of cumulative impacts. It looks as if they have been misadvised by OTAQ.

I also checked our Maclean's Nose response. I have provided advice on basis of 1 additional (they have 1 already) Terecos device as they proposed in application. We state 'If higher power devices were proposed then new assessment of the individual and cumulative impacts would be necessary. We recommend that you consider whether it is necessary to impose a condition to that effect.'

[REDACTED]

[REDACTED] | **Operations Officer, Skye and Lochalsh**

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[REDACTED] Dualchas Nàdair na h-Alba | Taigh an Rìgh | An Grianan | Port Rìgh | An t-Eilean

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**From:** [REDACTED]  
**Sent:** 27 August 2019 16:11  
**To:** [REDACTED] [highland.gov.uk](mailto:[REDACTED]@highland.gov.uk)  
**Subject:** ADDs - Scalpay, Sconser Quarry, Portree

[REDACTED]

There will need to be at least another round of dialogue with MOWI re. their proposals for Sconser Quarry and Scalpay. They are proposing continuous use of patrol mode for all of the sites. That would deviate from our guidance and we would only be prepared to revisit our guidance if the Portree study was published (and possibly more data). As discussed, I think we're also be looking for more certainty with the alternatives at the

end of the flow chart. We still need to go back to MOWI.

I looked at Portree too. Looks like noise levels in situ were much lower than predicted in lab (~90dB for patrol and 142dB for standard modes). There were a number of action points from our meeting on 27 May. One was for you to agree a 3 month extension to the temp. approval – so it's about to expire again! Another was for SNH to update HRA advice.

I'm going to have a meeting with [REDACTED] and [REDACTED] later this week to agree where we've got to and what else we need to do.

[REDACTED]

[REDACTED] [REDACTED] | **Operations Officer, Skye and Lochalsh**

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**From:** [redacted]  
**To:** [redacted] <[\[redacted\]@mowi.com](mailto:[redacted]@mowi.com)>  
**Cc:** [redacted] <[\[redacted\]@highland.gov.uk](mailto:[redacted]@highland.gov.uk)>; [redacted] <[\[redacted\]@mowi.com](mailto:[redacted]@mowi.com)>; [redacted] <[\[redacted\]@mowi.com](mailto:[redacted]@mowi.com)>  
**Bcc:** [redacted]  
**Subject:** RE: Sconser Quarry ADD Deployment Guidance - Discharge of Condition 3 of Planning - SNH comments - 2 September 2019  
**Date:** 02 September 2019 12:23:00  
**Attachments:** [image001.jpg](#)

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Dear [redacted]

Thanks for your revised ADD deployment plan for Sconser Quarry. Sorry for the delay in getting back to you. We have considered your proposals for that site but also the wider issues regarding implementation of a similar approach across all your Sound of Raasay farms.

Your current proposals appear to involve continuous activation of the OTAQ SealFence ADD in Patrol mode. That is contrary to our guidance that ADDs should not be used continuously. The ADD research that you refer to is encouraging but was of limited duration and is not in the public domain. That, combined with the sensitivity of these constrained SAC waters, means that we do not consider it to be appropriate to depart from our published guidance.

We recommend that your flow chart should be updated to avoid continuous activation of ADDs. Patrol mode could be activated in response to initial predation and remain active for xx days (e.g. in box 3). OTAQ appear confident about the success of Patrol mode in deterring seals, so that may be sufficient. If not, and predation continues, then use of Standard mode could be included as a later option (e.g. in box 4). However Standard mode is likely to be audible by cetaceans at greater distances and we would be more concerned about cumulative impacts for that mode. If you were able to make commitments that Standard mode would only be activated at one farm at any given time that would help address concerns relating to possible cumulative impacts. We are also keen for you to demonstrate how you would envisage total ADD use across all of your Sound of Raasay fish farms to decline over time (for example the removal of ADD use at the Sconser site may be something you could commit to in the medium term?).

Happy to discuss,

Regards

[redacted]

[redacted] | **Operations Officer, Skye and Lochalsh**

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**From:** [redacted] <[\[redacted\]@mowi.com](mailto:[redacted]@mowi.com)>

**Sent:** 24 July 2019 09:06

**To:** [redacted] <[\[redacted\]@highland.gov.uk](mailto:[redacted]@highland.gov.uk)>; [redacted]

**Cc:** [redacted] <[\[redacted\]@otaq.com](mailto:[redacted]@otaq.com)>; [redacted]

**Subject:** Sconser Quarry ADD Deployment Guidance - Discharge of Condition 3 of Planning

Good Morning,

Please see attached ADD deployment plan for Sconser Quarry. This has been produced to discharge planning condition 3 of the planning appeal notice.

This plan has been developed through consultation with SNH and OTAQ and follows best practice based upon assessment of the OTAQ SealFence operation.

We are aware there have been separate discussions regarding research on the SealFence, taking which into consideration we feel the ADD Plan attached in now in a suitable final draft stage to present to the Highland Council and SNH for comment, review and approval.

We would appreciate any feedback on the attached plan, once approved we then propose to voluntarily provide a cumulative assessment and plan for the existing sites within the area that have no ADD conditions, with the aim of moving them on to the same guidance.

If there are any issue or if you wish to discuss anything in the attached document, please do not hesitate to get in touch.

Thank you,

Best regards

■■■■■■■■■■

**Senior Environmental Analyst**

Mowi Scotland Limited

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**From:** [REDACTED]  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** RE: Portree fish farm - 16/03352/FUL - Update following meeting of 7 June 2019 and OSC underwater noise monitoring - 30 August 2019  
**Date:** 07 February 2020 13:11:42

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[REDACTED]

Just had a quick chat to [REDACTED] re. ADD conditions. We concluded that Portree Outer and Sconser Quarry FF had undischarged planning conditions re. ADD deployment plans. Therefore neither farm will currently be using ADDs, though both are installed/in production. He's going to contact [REDACTED] and [REDACTED] but we're going to have a catch up on these cases before he does so. I think it's fairly straightforward – we asked to see Portree Outers ADD data but they haven't supplied it and we asked for a revised MOWI Sound of Raasay combined ADD plan but haven't seen that either. Let me know if there are any wider issues/updates that we need to discuss.

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**From:** [REDACTED]  
**Sent:** 30 August 2019 16:11  
**To:** [REDACTED]@highland.gov.uk'  
**Cc:** [REDACTED]@scottishsalmon.com; [REDACTED]  
**Subject:** Portree fish farm - 16/03352/FUL - Update following meeting of 7 June 2019 and OSC underwater noise monitoring - 30 August 2019

Dear [REDACTED]

At our meeting of 7 June with yourself, SSC, OTAQ & OSC we agreed that there could be a further temporary (3 month) extension relating to the discharge of condition 1 for Portree fish farms. As agreed, my colleague [REDACTED] subsequently met with OSC to discuss the underwater noise monitoring that they had carried out on the OTAQ SealFence device in situ at Portree fish farm.

The OSC study provided a useful snap-shot of the output of the OTAQ transducer in situ, suggesting a lower output than previous lab-based analysis. While we are disappointed that OTAQ are not prepared to publish the report, our initial view is that it is likely to be sufficient for us to update our HRA advice to you for this site.

As this is a sensitive location, and the ADD system has been operating for this trial period, we request sight of the information that SSC and OTAQ collect under section 3.3 of the ADD plan. Much will rest on the annual review meetings and we are keen to see the information that has been collected since the system was first deployed in March.

Thanks

[REDACTED] | Operations Officer, Skye and Lochalsh

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**From:** [REDACTED] [[mailto:\[REDACTED\]@nature.scot](mailto:[REDACTED]@nature.scot)]  
**Sent:** 07 [REDACTED] 2019 20:39  
**To:** [REDACTED]@highland.gov.uk' <[\[REDACTED\]@highland.gov.uk](mailto:[REDACTED]@highland.gov.uk)>  
**Cc:** [REDACTED] <[\[REDACTED\]@nature.scot](mailto:[REDACTED]@nature.scot)>; [REDACTED] <[\[REDACTED\]@nature.scot](mailto:[REDACTED]@nature.scot)>; [REDACTED] <[\[REDACTED\]@scottishsalmon.com](mailto:[REDACTED]@scottishsalmon.com)>

**Subject:** SNH advice to THC - Version A7 (4 March) of SSC ADD Deployment Plan for Portree fish farms can be used to discharge condition 1 of permission 16/03352/FUL on a time-limited basis - 7 March 2019

Dear [REDACTED] (cc. [REDACTED] [REDACTED])

As you know, Scottish Salmon Company (SSC) have been discussing their ADD deployment plan for Portree Outer fish farm with us. We support their objective to carry out a scientific assessment of sound characteristics of the ADDs *in situ* and their likely effect on cetaceans. This research will be of benefit for assessing this proposal and is also likely to have wider applicability. The latest version of the ADD deployment plan (A7, dated 4 March 2019 – copy attached) appears to cover the requirements of the planning condition.

Regulation 48 of the Habitats Regulations allows that conditions can be considered in coming to the final conclusion of whether adverse effects can be avoided. However, in this case there are a variety of ways the condition could be discharged and therefore it makes sense to consider whether implementation of proposed plan will achieve the conservation objectives, especially since guidance has evolved in the intervening period.

To help you do this we advise that, **in our view, based on the information provided, the proposed use of ADDs at this site will not adversely affect the integrity of the site.** The appraisal we carried out considered the impact of the proposals on the following factors:

- The OTAQ ADD devices proposed are within the hearing range of harbour porpoise.
- Scientific advice provided by Ocean Science Consulting Ltd (OSC) states that there would be no auditory injury to harbour porpoise. This means that conservation objective 2a will be met (Harbour porpoise are not at significant risk from injury or killing).
- Conservation objective 2b makes it a requirement to avoid significant disturbance. Significant disturbance is interpreted to mean '*changes to the distribution of harbour porpoise on a continuing or sustained basis*'.
- The reduced output of the ADD devices (source level of 170 db re 1mPa.m RMS) mean that the area within which harbour porpoise modify their behaviour is likely to be reduced but currently we do not yet have modelling or empirical data to demonstrate this.
- Use of 'patrol' mode to ensure that no more than one ADD device sounds at any time across both Portree fish farm sites should also reduce the risk of additive cumulative impact possible with multiple ADDs but, again, we do not yet have modelling or empirical data to demonstrate this.
- Cumulative impacts are reduced by integrating Portree fish farm into the same system.
- Empirical testing of the system on site at Portree will be carried out by independent scientists (OSC) to determine the zone of impact, and reported to us by 30 April 2019. The ADD deployment plan (and therefore the permission to use ADDs) will expire automatically on that date or when a revised plan is agreed with THC, whichever is sooner. Significant disturbance would therefore not be continuing or sustained. On that basis it can be considered to meet the conservation objective.

In preparation for the post-research version of the ADD deployment plan, we have recommended that OSC consider a range of scenarios in their noise modelling, including increased ADD source levels and/or changes to the operation mode. It would be helpful if the next version of the plan considered what alternatives could be used if ADDs as currently proposed are found to be ineffective in deterring seals. We would not expect this to be overly prescriptive but it could outline the constraints of the various options.

Regards

[REDACTED] | Operations Officer, Skye and Lochalsh

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**From:** [REDACTED] [mailto:[REDACTED]@scottishsalmon.com]

**Sent:** 04 March 2019 17:27

**To:** [REDACTED]

**Cc:** [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]@highland.gov.uk'

**Subject:** RE: SNH comments on 19 February version SSC ADD Deployment Plan for Portree fish farms

Hi [REDACTED]

Thanks for the feedback, attached are the following documents:

1. 190304 Portree Outer ADD plan\_A7\_TC1 **MB Note:** Some tracked changes to confirm what we have accepted
2. 190304 Portree Outer ADD plan\_A7\_Clean **MB Note:** A clean version to ensure it is clear for operational use.

We have accepted the time limited nature of the ADD plan, however to ensure flexibility we have proposed to the end of April to ensure we have the necessary weather windows (seeing as the next few weeks are looking unfavourable). We have also accepted the majority of the tracked changes. Your other points have been sent on to OSC.

We hope this version of the ADD plan can be approved and therefore be implemented as necessary for the next 2 months in which time we will collect and analyse the empirical data, followed by the reporting and agreed meeting to discuss the outputs.

I look forward to hearing back from you at the earliest opportunity.

Best

---

**From:** [REDACTED] [mailto:[REDACTED]@nature.scot]

**Sent:** 01 March 2019 13:06

**To:** [REDACTED] <[REDACTED]@scottishsalmon.com>

**Cc:** [REDACTED] <[REDACTED]@nature.scot>; [REDACTED] <[REDACTED]@nature.scot>; [REDACTED]@highland.gov.uk' <[REDACTED]@highland.gov.uk>

**Subject:** SNH comments on 19 February version SSC ADD Deployment Plan for Portree fish farms

Dear [REDACTED] (cc. [REDACTED])

Thank you for arranging the teleconference meeting on 12 February. We welcome SSC's science-led approach to ADD deployment across both your Portree fish farm sites. In particular we note your undertakings to:

- 1) Reduce the output of the ADD devices (source level of 170 db re 1mPa.m RMS);
- 2) Use of 'patrol' mode to ensure that no more than one ADD device sounds at any time across both Portree fish farm sites;
- 3) Scientific advice provided by Ocean Science Consulting Ltd that there would be no auditory injury to harbour porpoise;
- 4) Empirical testing of the system on site at Portree will be carried out by independent scientists (OSC) and reported on a defined timescale.

We have discussed the issues raised with [REDACTED] [REDACTED] at THC. [REDACTED] advised that because of the way the ADD planning condition is worded **all undertakings, including the time-limited nature of the ADD deployment, must be contained within the ADD deployment plan itself.** He also requested that we try to address as many of the issues as possible this stage, rather than deferring them until after the research is completed.

In order to expedite the process, we have included recommended amendments as tracked changes on your latest draft ADD deployment plan (attached). Please can you review our tracked

changes and comments and send us your revised plan. Our hope is that, at that stage, we can write to THC to inform them that we support the plan and that there would be no adverse effect on the integrity of Inner Hebrides and the Minches cSAC. That would help THC to discharge the planning condition timeously.

On a related matter, we recommend that you ask OSC to consider a range of scenarios in their noise modelling, including increased ADD source levels and/or changes to the operation mode. We want to be prepared for a potential scenario where the proposed ADD system does not prove as effective as hoped at the prescribed source level of 170 dB re 1µPa (rms). That would feed into the 'consideration of alternatives' box towards the bottom of your flow chart.

Let me know if you want any clarification.

Regards

██████████ | Operations Officer, Skye and Lochalsh

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**From:** ██████████ [mailto:██████████@scottishsalmon.com]

**Sent:** 14 February 2019 15:20

**To:** ██████████ ██████████ ██████████ ██████████ ██████████

**Cc:** ██████████; ██████████ ██████████ @osc.co.uk; ██████████ ██████████

**Subject:** SSC - SNH Portree ADD Updated Plan

**Importance:** High

Hi ██████████ ██████████ and ██████████

Dear ██████████ ██████████ and ██████████

Many thanks for your time on the call on

The updated ADD plan attached will be operated on Patrol Mode across both sites. As discussed on Tuesday, Portree Outer does not have ADDs deployed, as we have been in the process of finalising the ADD plan for approval;

2. We anticipate that the revised desk-based underwater-noise modelling (which is in final stages of completion) will determine that it is unlikely that the Patrol Mode will affect non-target marine mammals, e.g. the harbour porpoise, (HP);
3. However, we plan to carry out empirical testing of the system on site at Portree to verify the modelling, and we expect all calculated ranges to be reduced;
4. The noise-modelling report includes Sound Exposure Level (SEL), which is a cumulative metric (calculated as if the system was running for 24-hours continuously); however, this figure is conservative, because in Patrol Mode, the system operates for 1.5 seconds with 10-second intervals (about an eighth of a 24-hour period), and furthermore, the system will only be operated when a seal is considered to be a threat, which means cumulative impacts will be reduced;
5. To reiterate we will operate the system in Patrol Mode, both on Portree Outer and existing Portree site, therefore reducing overall potential impact of the system on HP;
6. OSC's modelling has already shown that, when using Southall (2007) criteria, there would be no auditory injury to HP (unless directly adjacent to the source (0m) and a behavioural effect on HP 30 m away from the source;
7. NOAA (2016 & 2018) criteria demonstrate that there may be an effect greater than the width of the channel, but we expect this range to be reduced with the latest modelling, and even more so, after empirical measurements of the system; and,

8. We propose that the system only be used for part of the year, and only as and when required.

Due to extenuating circumstances, and the delay in finalising the ADD plan, we now seek to interim approval for the use of the ADDs at Portree outer to ensure the health and welfare of our stock, which is our priority.

If you could please review the ADD plan and provide advice so that we may proceed with the ADD plan, at least for an interim time period in order that we maintain the integrity of our containment and maintain our high standards of welfare.

We look forward to a response at the earliest opportunity.

Best regards

██████████ ██████████

Head of Site Development

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