

## Letter of response to Nature Scotland Consultation

The following is a response to NatureScot's (NS) consultation on Loch Duart Ltd's (LDL) application for a licence to use Acoustic Startle Response (ASR) devices at their site in Clashnessie Bay/Oldany. Text copied from the document we received is in Blue and in italics, whilst our responses are in standard text.

### Licence to disturb EPS – standard questions

#### 1. Is the proposal capable of having an adverse impact on the favourable conservation

#### status of the European Protected Species Concerned?

*Based on the information and modelling supplied, we conclude this proposal is not capable of having an adverse impact on FCS for any EPS potentially present in the area.*

No response required.

#### 2. Have all the species capable of being disturbed by the activity have been correctly

#### identified by the applicant?

*The application focuses on harbour porpoise and minke whale. Most likely because these are the species with density estimates in the SCANS III information. However, based on <https://whaletrack.hwdt.org/sightings-map/> there are also sightings of short beaked common dolphin and killer whales in the area, plus sightings of unidentified dolphin species, which could be bottlenose dolphin or Risso's dolphin. The application predicts less than 3 HP and less than one minke whale using the methodology advised. Should the EPS licence be issued, we recommend that the all species noted here are included with 3 harbour porpoise, and one for all other species.*

In the current application, data from the newly released SCANS IV survey results has been used as the basis of the model (SCANS III survey results were used in the previous application). This is the best available rigorous data set for Cetacea presences and density in European Atlantic waters. Resources such as Hebridean Whale and Dolphin Trust Whale track (HWDTT) are not suited to this type of work due to the nature of how the data is collected and that there is no guidance as to how it should be interpreted.

For example, a quick investigation of HWDTT of the area around the Clashnessie site in question showed a total of 68 individual marine mammals sighted across 16 days total in the period between 17/09/2017 & 18/09/2023; a timespan of 2,192 days (Image 1 shows the area from which sightings

were counted to reach these numbers). To use this data in the modelling, it would be necessary to make assumptions about the number of individuals observed, the observation area, and the frequency of observations. Reading the data as presented suggests a very low density of individuals in the area which is consistent with the SCANS IV data.



Image 1: Area from which sightings on HWDTT were counted (Inside the yellow circle) on the left. On the right is the disturbance threshold radiance of an Ace Aquatech RT1 system based at the Loch Duart Clashnessie site operating at its highest possible power level.

NS stated *“The application predicts less than 3 HP and less than one minke whale using the methodology advised. Should the EPS licence be issued, we recommend that the all species noted here are included with 3 harbour porpoise, and one for all other species.”*

We are struggling to understand exactly what it is NS are trying to say here and we are curious as to how they have arrived at these numbers of three for Harbour Porpoise and one for all other species. We have carefully considered the key species that should be incorporated into the modelling and are confident that it is reflective of the real-life scenario.

*The number predicted is based on the disturbance radii calculated from the source level of the system, and is a snapshot representation of the predicted disturbed area, together with the SCANS III density estimate. Whilst this is common practice for EPS licence applications, we highlight this does method of prediction does not reflect the number of possible disturbed animals over the 22 month period.*

The prescribed calculation method provides an estimate of the number of animals disturbed when the acoustic devices are in use. It is unable to differentiate between a limited number of animals that can hear sounds frequently or a larger number of animals which are able to hear the sounds infrequently.

Finally, we would like to reiterate that while our response largely relates to SCANS III data, the current application now uses modelling based on SCANS IV data.

*3. Is the activity likely to have a significant effect on the qualifying interests of any European site or is capable of affecting, other than insignificantly, the protected features of any MPA.*

*The closest European site is the Inner Hebrides and the Minches SAC, with harbour porpoise as the protected feature. The application site is approximately 9km from the SAC boundary and therefore there is no pressure overlap, and therefore we conclude no likely significant effect. Other MPA sites in the Minch considered are at considerable distances from this application site and therefore our view is that there is no impact pathway from this activity that might affect the conservation objectives of any MPA in the region (Box 1). We advise that this activity is not capable of affecting, other than insignificantly, the protected features of any MPA.*

*Box 1*

<i>North East Lewis</i>	<i>35 km</i>	<i>(Risso's dolphin/sandeels)</i>
<i>Shiant East Bank</i>	<i>48 km</i>	<i>(benthic features)</i>
<i>Wester Ross</i>	<i>28 km</i>	<i>(benthic features)</i>
<i>Sea of Hebrides</i>	<i>130 km</i>	<i>(minke whale/basking shark)</i>
<i>Loch Laxford</i>	<i>21 km</i>	<i>(reef/ shallow inlet, bay)</i>

No response required.

**Licence to disturb EPS – additional questions**

*4. Do they follow the guidance provided to applicants?  
faq adds and eps including annex 1 and annex 2 - version 5 -october 2021 - final.pdf  
(marine.gov.scot)*

*Yes, they have predominantly followed the Marine Scotland guidance. Details of the ADD systems are suitably disclosed. The noise modelling methodology follows the guidance using the spreadsheet approach developed by J Lines, and our understanding is that this spreadsheet has been checked and approved by Marine Scotland Science. The disturbance zones and PTS ranges appear to be consistent based on the sound levels, frequency content disclosed.*

*However, we note that the two types of ADD system (US3 and RT1) have been assessed independently, and it is not clear if both systems (8 US3s and all 6 RT1s) will be activated concurrently. There is no discussion of this scenario, nor assessment of the whole. We assume as the number of devices are included in the spreadsheet, the calculation incorporates the array. We highlight that the maximum duty cycle of 5% is used in the assessment, but because the transducers are not synchronised, the soundings could be one after the other with the result that the system duty cycle is greater than 5%. We recommend that this is checked (with the applicant and MSS) to ensure the modelling is predicting on a realistic worst case scenario.*

The modelling provided for the current reapplication has been done to show the effect of a site wide ASR system comprising of six RT1 devices. No US3 devices will be deployed at this site. All ASR emitter devices on site at Clashnessie Bay will be controlled by a Site Wide Unified Ramp-down (SURD) system. This central system will queue requests from emitters to produce sound, only allowing one emitter in the system to fire at a time as well as managing the duty cycle. Additionally, the SURD system logs records of all sound events generated by the system to allow for monitoring and investigation.

*As noted above, the applicant has only referred to the SCANS III information and does not appear to have looked for other more local sources (e.g., Hebridean Whale and Dolphin Trust sightings website).*

A response to this point has already been made as part of our response to: [2. Have all the species capable of being disturbed by the activity have been correctly identified by the applicant?](#)

Again it should be noted that this current application uses newly available SCANS IV data.

[5. If not, is the applicant using an appropriate method for assessment?](#)

*(See response above)*

See reply to response above.

[6. Has the applicant provided sufficient information to allow an understanding of the impact of the devices? If not, what further information is required?](#)

*No. The applicant has provided all the key information used in the assessment, however an appropriate level of independent supporting evidence is missing. This is not a short term noise input into the marine environment (22 months). The applicant has states that the mode of operation will be continuously active, whilst the farm is stocked, albeit at different sounding rates (Box 2). The information supplied enables the conclusion that this operation is unlikely to result in a detrimental impact on FCS due to the scale of the predicted noise output, but appropriate supporting evidence is required to provide confidence in this conclusion.*

## Box 2

*Phase 1 : 3 days at 144 soundings per hour*

*Phase 2 : 14 days at 72 sounding events per hour*

*Phase 3 : 28 days at 12 soundings per hour after which the device is muted*

*There is no independent verification of the sound levels and operational patterns of sound emission. This falls short of the evidence required in the guidance.*

With regards to independent supporting evidence of ASR devices and their impact, Ace Aquatec acknowledges the need for the transparency and validity of third-party verification. To this end we have been supporting St Andrews university with a study into their efficacy and effect on the environment in Orkney. Phase II of this study is about to begin. Results from Phase I of the study demonstrated that the ASR devices has no detrimental impact on a variety of marine mammals, and we expect similar results from the Phase II study.

*It is stated that the noise emitted results in a 'startle' response, however, there is no information supplied that supports this effect.*

The Startle effect is a documented biological response to sudden noises. The tailoring of sounds to elicit this response means that Acoustic Startle Response devices ensonify the ocean less and have a better lasting efficacy than traditional ADDs. Ace Aquatec has been working on ASR technology since the 1990s. A brief explanation of ASR can be found in the document Attachment 6 Acoustic Startle Response A Brief Description.

*If MS LOT is minded to allow an EPS licence and thus enable the use of the AA ADD systems we would advise that there is operational noise monitoring and reporting as part of the licence conditions. Ideally for the full 22 month deployment period, with an interim report after the first cycle of the phases (Box 2). To be submitted within a specified time following the completion of phase 3. Monitoring for the full 22 months, would enable assessment of the entire system noise output, and the degree that the system is muted.*

All system activity is monitored and logged as a standard function of the system and is stored and accessible remotely from the individual devices. The information recorded includes the output of any sound emission events.

*We are not sighted on the full details provided to MS by AceAquatec. We assume this relates to the acoustic characteristics of the system. Our understanding is that this was provided by Ace Aquatec*

*themselves and not from an independent assessment. Therefore, we are not in a position to comment. We have only been provided with AceAquatec produced specification sheets.*

*The application cites K Whyte MSc Thesis when detailing efficacy. The full reference is not included, and a search through the St Andrews thesis repository does not find the thesis. It may not be publically available, we therefore cannot review the claim that the use of AA systems reduces predation by ~ 70%. We also cannot assess if the system reviewed in 2015 is the same as the systems proposed here and therefore if the efficacy is transferrable.*

As part of the re-application, we have included the text of Whyte's thesis (see Attachment 5).

*7. The application only covers one site, but the applicant is also in possession of a licence from NS to deploy and test a TAST device at other sites they operate. They have given reasons for not undertaking a cumulative assessment. Is this justified and if not, what is required?*

*The reason given is that the predicted impact ranges do not overlap, from this activity, and from the other sites researching the TAST device. They conclude no likely interaction between the farms, and therefore there is no cumulative impact. In our view, it is not sufficient to simply consider if there is any overlap, but a CIA should also consider the accumulated impact for the cluster of fish farms (i.e. Clasmessie Bay, plus Loch a Chairn Bhain, Calbha, Badcall Bay & Laxford) in that region should multiple systems be used at the same time. A CIA should be presented that considers the total area where cetaceans are at risk of disturbance.*

LDL is the operator of the nearest adjacent marine farms to Clashnessie Bay which are located within Eddrachillis Bay, Loch a Chairn Bhain and Loch Laxford. The nearest active farm, Calbha, is 7.9km to the north-east (direct-line distance, not considering intervening landform). An EPS licence issued by NatureScot is in place for deployment and testing of TAST underwater sound-producing units at Calbha, Badcall, Reintraid and Laxford farm sites (License Number 210989). However, this licence expires in July 2024. Given the timescales for anticipated consenting of the EPS application at Clashnessie Bay, the forementioned testing of devices under License Number 210989 is not anticipated to be active when ADD devices at Clashnessie Bay will be operational. Should LDL seek to reapply for a commercial or research EPS licence for ADD use at the farms within Eddrachillis Bay, Loch a Chairn Bhain and Loch Laxford, a cumulative impact assessment will be conducted at that time.

Marine Directorate Licensing Operations Team marine licence database indicates that, at the present time, no other commercial marine licences have been granted for the use of ADDs on fish farms in the SCANS block CS-H (Minch) and that LDL are the only fish farming company currently pursuing a commercial EPS licence for ADD use. Furthermore, it is LDL's understanding that information regarding

current (active) EPS licenses' granted for ADD use for research purposes is not publicly available. Hence even if there are other fish farm sites within the SCANS CS-H block that are using ADDs under a licence granted for research purposes, LDL are not privy to that information or the associated data predicting the number of individual cetaceans predicted to be disturbed and / or injured by those specific devices. As such, we conclude that it is not possible to undertake a cumulative impact assessment as per Marine Scotland Science's and NatureScots response to the original application. However, going forward, cumulative effects of the use of ADDs would be considered in any subsequent EPS licence applications in the CS-H (Minch) area, should they arise, and these would include the devices at Clashnessie Bay if the EPS for their use is granted.

Additionally, it should be stated that the modelling on disturbance and injury done by Dr Lines assumes the worst-case scenario; that the marine mammals are being exposed to the noise that would be generated at the Clashnessie Bay site all day, every day.

*8. Does NatureScot have any relevant views or information in regard to the evidence provided to address test one – licensable purpose? The applicant has applied for a licence to prevent serious damage to property.*

*We note that the purpose is “for preventing serious damage to livestock, foodstuffs for livestock, crops, vegetables, fruit, growing timber to any other form of property, or to fisheries”, and so we think this application fits within this purpose.*

No response required.

*9. Does NatureScot have any relevant views or information in regard to the evidence provided to address test two – no satisfactory alternative?*

*The information provided is similar to that we have seen before. In that the information provided details the suite of mitigation the company undertakes, but that none of these methods are in itself 100% effective, and in their view there is no alternative to an acoustic deterrent to keep seals away from the cages.*

*There is no discussion regarding the use of a semi-enclosed containment system. Semi-enclosed containment pens have no need for ADD systems. We are aware of one such system currently undergoing the consenting process for installation in Loch Linnhe. This is clearly a potential alternative and we would recommend this should be considered as an option, going forward. For this application, the option of semi-closed containment is not discussed as a potential satisfactory alternative.*



As part of the resubmission, LDL have provided an extensive description of all the alternatives that have been considered and/or tested on site (see in particular: Attachment 7 Predator (seal) risk assessment, Attachment 8 EPS RA RT1, and the application cover letter). Semi enclosed pen technology is at present nascent and unproven. Suitability of the Clashnessie Bay site for semi enclosed pen equipment is also questionable due to its depth, the cost of this would also be significant due to the structural changes needed to pens to deploy this equipment.

It is to be noted however that LDL highlight the use of re-enforced netting on its pens which would work in tandem with the acoustic startle devices. Salmon in the pen can still become stressed by the presence of seals, and since they will still see the seals circling the pens, the addition of the ASRs will prevent that stress response. As an additional point, it should also be noted that in Marine Scotland Science's consultation, they acknowledged that the efficacy of many other methods to deter seals from predation was even less well understood than that of ADD/ASR technology.

*10. Does NatureScot have any additional views or information that would assist us? If you consider that the applicant has provided insufficient information in relation to this, do you have a view on what information it would be reasonable to expect the applicant to provide?*

*The provision of supporting evidence relating to the noise characteristics from the system, which should include:*

*Received levels along a transect away from a fish farm.*

*Long-time average spectrogram, to show the frequency content and pattern.*

*Evidence of the startle response claim, including evidence to show that even though short the signal emitted is not impulsive (to ensure that the correct impact thresholds have been used).*

*Supporting evidence for efficacy.*

*Satisfactory alternative discussion to include semi-enclosed contained system consideration.*

In response to the, "received levels along a transect away from a fish farm", modelling the change in sound level with distance has been undertaken according to the recommendations by Marine Scotland. Any deviation from this would be farm-specific and would need to be measured after installation.

The remaining issues have been raised previously in the NS consultation document and our answer to them can be found throughout this response document and corresponding evidence in the appendix of this re-application.



As a final comment, it must be restated that the current application uses modelling based on newly released SCANS IV data rather than the SCANS III data used in the application NatureScot consulted on.