Subject: Re: Salmon farm Genuswave application
Date: Friday, 15 May 2020 at 16:40:13 British Summer Time
From: Sealife Adventures
To: marine.planning@shetland.gov.uk, juan.brown@nature.scot
CC: Cathy Tilbrook, David Donnan, Liam Wright
BCC: John Aitchison, Tom Appleby, Jo Coumbe, Kerri Whiteside, Guy Linley-Adams

Dear Juan and Iain,

I sent the email below to Cathy Tilbrook who understandably is unable to deal with it before 12th June because of Covid-19 work. I am concerned that a consent might be granted which would not meet the requirements of Habitats Regulation 39(2).

It is important that the advice SNH gives to planners is correct and in this case the advice is based on incomplete science. There are peer reviewed papers as explained which give rise to reasonable scientific doubt that the Genuswave ADD will not disturb cetaceans, therefore if consent was given the planners would be acting ultra vires and consenting to an illegal activity. The correct course of action would be for SNH to advise the operators and the planners that an EPS license would be required to operate these devices.

Under these unusual circumstances, will you agree to delay any grant of planning permission until it has been established beyond reasonable scientific doubt that the ADDs applied for cannot disturb any porpoise, dolphin or whale?

David Ainsley,

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From: Sealife Adventures <info@sealife-adventures.com>
Sent: 14 May 2020 15:18
To: Cathy Tilbrook <Cathy.Tilbrook@nature.scot>
Cc: David Donnan <David.Donnan@nature.scot>
Subject: Salmon farm Genuswave application

Dear Cathy,

Application to vary a condition at a farm in Shetland, stipulating that ADDs may not be used.

I hope that you are well.

The law in Scotland, Habitats Regulation 39(2), states it is an offence to deliberately or recklessly disturb any porpoise, dolphin or whale, however the SNH response to this Planning Application does not mention this. The science on which the application has been based is incomplete and does not include studies which strongly suggest that TAST ADDs could disturb cetaceans.

The farm proposes to use 12 TAST ADDs, each outputting 180 to 183 dB. This is louder than currently used Terecos ADDs. The duty cycle is reported at up to 2% and although this is lower than commercial ADDs, the duty cycle is also stated to be adjustable. The farm proposes to use 12 of these devices with obvious cumulative impacts.

It is stated that the devices will only be used in response to seal attack, however there is no monitoring of their use. Hydrophones surveys showed that BDNC farm near Shuna, where the ADDs are also supposed to be used only in response to seal attack apparently used them continuously

The TAST ADD is new technology and is purported to be different to other ADDs in that the startle reflex combined with low frequency output can selectively disturb seals but not porpoises. The two studies on this device have been carried out by the developers based on their own observations rather than C-POD data.

There is a commercial company partly funded by St. Andrews University and one of the developers is a director of this company.

There is a clear need for independent scientific study to ascertain whether the findings of the developers are replicated long-term on a range of sites and if this technology will fulfill the requirement of Habitats Regulation 39(2). A study by Gotz (one of the developers) found that a bottlenose dolphin did exhibit a startle reflex at received sound pressure level below that of the output of the Genuswave, indicating that Genuswave is likely to disturb cetaceans.

The Genuswave is a low frequency ADD, claimed to exploit differences in species hearing to disturb seals but not cetaceans. In theory this might be expected to work on porpoises but not lower frequency cetaceans such as dolphins. One independent piece of work, the SARF 112 study by researchers at SAMS found that porpoises are disturbed by both high and low frequency ADDs, indicating the need for further work independent of commercial interests to prove that no cetaceans can be disturbed by multiple arrays of TAST ADDs in a range of situations.

The first draft of the SARF 112 paper obtained under FOI from SNH included in its recommendations that:

> *"Recommendation # 1 (TOP PRIORITY): The effectiveness of alternative non-acoustic mitigation methods (e.g. appropriate fish husbandry, good net maintenance, improved net tensioning, and stronger net materials) should be investigated. These methods potentially harbour unrealised opportunities for successful mitigation of seal depredation but have not benefited from equivalent attention compared to ADDs. Preferably, and assuming that these methods are at least equally successful in mitigating depredation by seals, the use of one or more of these methods should be promoted over the use of ADDs."*

This is a clear and logical recommendation from the findings of the study that low and high frequency ADDs disturb cetaceans, it is concerning that it was watered down but still retained its meaning in the published version.

Trites and Spitz 2016 deconstruct and criticize the research used by the developers of the Genuswave and state that :

“Unfortunately, all technologically based deterrence methods are likely to fail in the long term as animals adapt to prolonged stimulus and find the rewards they receive to be greater than the price they pay to obtain them (Schakner & Blumstein, **2013**). New technologies often also equate to new problems and conflicts, it is just that no one knows yet what they are until the technology has been fully implemented. Thus, simple (but perhaps initially expensive) options that prevent predators from seeing or accessing the fish intended for human consumption are likely to be the most successful, while the technologically based solutions are likely to be most successful when used sparingly.”

This planning application is not for a scientific study into TAST ADDs, but for commercial use of 12 devices. It is based on the incorrect assumption that it has been scientifically proven that they cannot disturb or injure cetaceans. **We ask that SNH amend their advice to planners that these devices cannot be used in areas where there are cetaceans without an EPS license until the science is demonstrably robust to prove that they cannot disturb cetaceans**. If SNH is not minded to change their advice to planners, please explain with full scientific references why you believe it has been proven beyond scientific doubt that these TAST ADDs cannot disturb cetaceans.

For an EPS license to be issued the 3 EPS licensing conditions would have to be met, one of which is that there must be no satisfactory alternatives. Farms in Shetland are currently fitted with double nets which as suggested by both the SARF 112 paper and Trites and Spitz 2016 are a satisfactory solution which does not disturb cetaceans and does prevent the need to shoot seals. It would be a negative move for farms to move away from double netting and allow unnecessary noise pollution in the seas.

Best wishes,

David Ainsley,

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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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