

E-Planning Department
The Highland Council
Glenurquhart Road
Inverness
IV3 5NX

13th December 2018

Dear Sir/Madam,

Scoping Application 18/05832/SCOP Marine Fish Farm (Atlantic Salmon) Installation of Additional 4 Circle Cages to Existing 12 Cages and to increase biomass – Loch Hourn.

Thank you for requesting a response from the Wester Ross Area Salmon Fishery Board (WRASFB) with regard to this planning application.

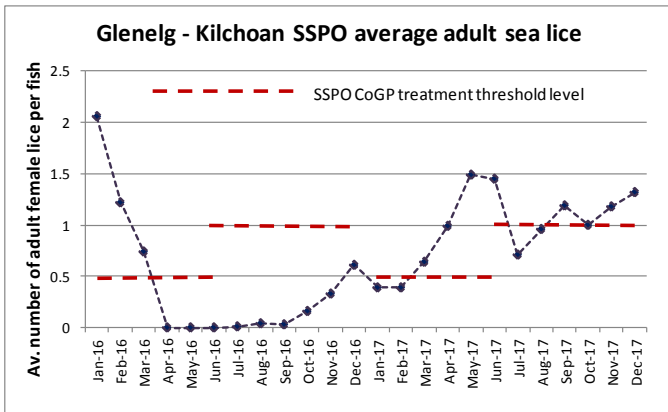
The WRASFB has statutory duties in terms of the protection of wild salmonids within its district. There is no District Salmon Fishery Board (DSFB) that includes Loch Hourn so these DSFB duties, for the protection and enhancement of wild salmonids, fall to Marine Scotland (on behalf of Scottish Ministers). We would therefore expect that in exercising these duties, the view of Marine Scotland will not differ greatly from that of the WRASFB

This proposal is for a further expansion of the Loch Hourn salmon farm from 12 to 16 pens and for an increase in biomass from the current 2,500 tonnes to an ‘aspirational’ biomass of 3,600 tonnes. This application follows the increase in biomass consented at this farm, from 1,500 tonnes to 2,500 tonnes, prior to the beginning of the 2016 – 2017 farm salmon production cycle.

Our concerns are for wild salmon and sea trout populations within and beyond this area, particularly in relation to emissions of larval sea lice.

Figure 1 (below) present average adult sea lice per fish data from SSPO fish health reports

<http://scottishsalmon.co.uk/publications/> for the area in which the Loch Hourn farm is located. Note that adult female lice numbers exceeded CoGP treatment threshold levels in 7 out of 12 months in 2017.



As the biomass increases within a production area, the overall louse population on farmed fish will increase in proportion (assuming the numbers of lice per fish remains the same as before). Figure 2 (below) provides an indication of 'sea lice index' [average no of adult female lice per fish multiplied by the consented biomass]. Until peak biomass is reached (and harvesting of fish commences) the graph may be closer to proportional to total larval louse emissions than Figure 1.

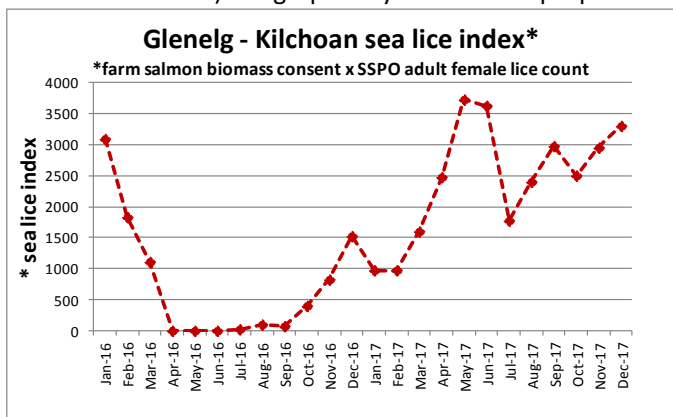


Figure 3 (below) shows that in the past two fish farm production cycles in the Glenelg to Kilchoan farm salmon production area, the average number of adult female sea lice per fish has exceeded CoGP levels in both cycles, particularly in the first six months of 2017 as described above. This graph and Figure 4 were constructed by using data provided by the SSPO and the Scottish Government.

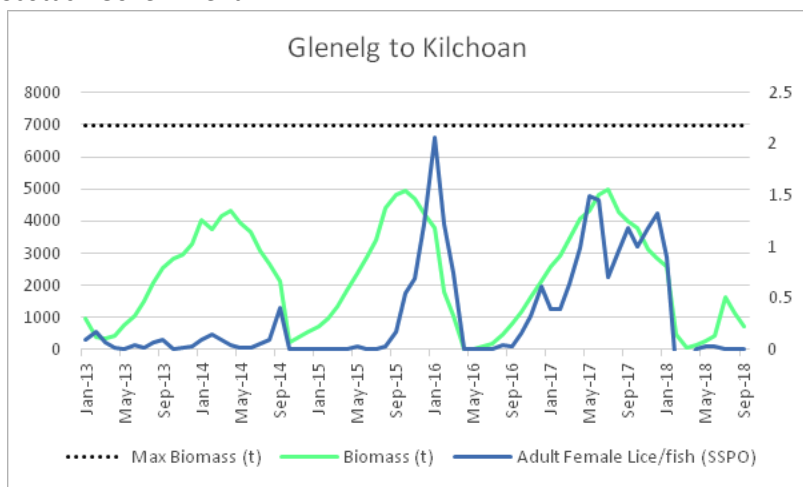


Figure 4 (below) presents estimates of the total sea louse populations on wild fish and on farmed fish in the Glenelg to Kilchoan area. Note how many times higher the estimated farm derived louse population in the area was than the estimated wild fish derived sea louse population, and again how lice levels were high in the 2016-2017 production cycle.

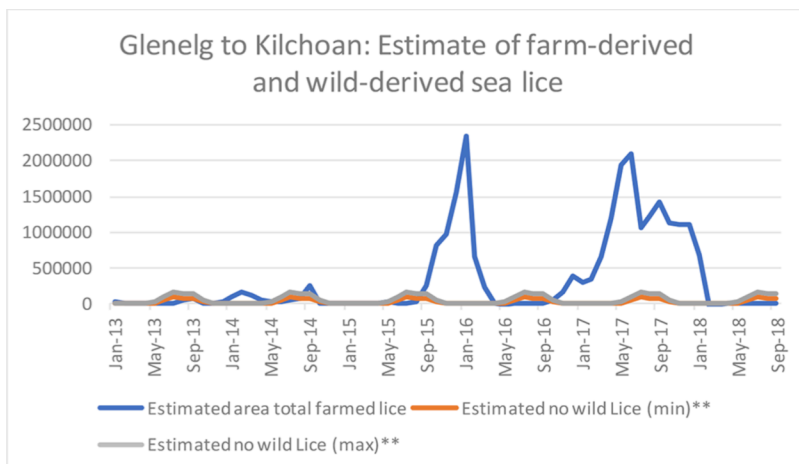


Figure 5 (below) is a graph of rod catches of wild salmon for the Arnisdale district up to 2017. This graph demonstrates that rod catches of salmon were falling even prior to the previous increase in production of farmed salmon in this area. Note however, that the 2018 rod catches are required to assess how lice emissions from nearby salmon farms in 2017 may have affected salmon catches as the 2018 grilse would have passed through waters surrounding the Loch Hourn farm as smolts in 2017.

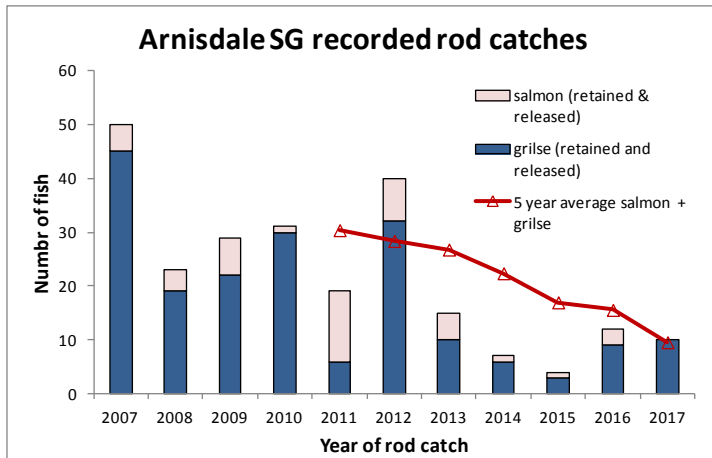
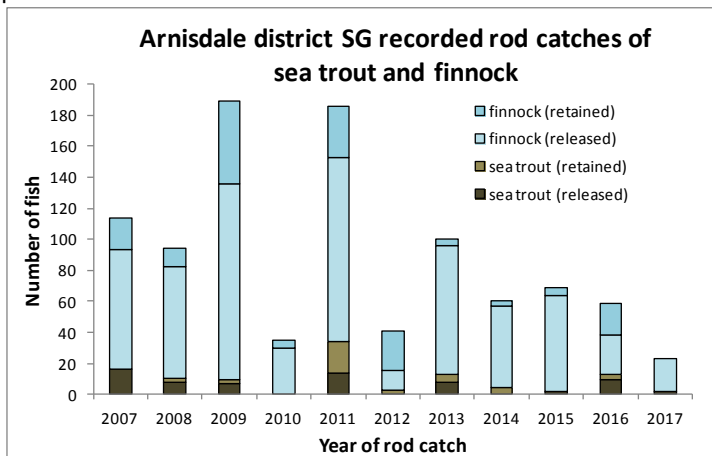


Figure 6 (below) is a graph of sea trout rod catches in the Arnisdale district for the years 2007 to 2017. Note that the combined rod catch of sea trout and finnock in 2017 for the Arnisdale fisheries district was the lowest in the 11 years presented.



Lice levels may have been too high in 2017 to safeguard sea trout in nearby waters; the sea trout and finnock caught in 2017 would have been exposed to lice emanating from nearby farms in 2017.

A brief check of the Kilchoan rod catch figures also suggests one of the lowest recent sea trout catches in 2017, consistent with higher mortality of sea trout and finnock associated with sea lice emissions. Wild salmon and sea trout fisheries were near historic low levels in 2017. The low catches of wild fish are consistent with an interpretation that a major part of the explanation for low catches of sea trout and salmon was due to mortality associated with sea lice infestations from nearby salmon farms.

Prospects of achieving control of sea lice on an even larger open cage salmon farm.

Every salmon farm application presents a statement explaining how measures will be taken to ensure that wild fish are not harmed. The screening and scoping template for this application is no different, and includes the following assurances:

'stringent measures will be adopted to mitigate against impacts on salmonids year round . . . '

' . . . significant investment in innovative technologies and biological control systems have been implemented in a dedicated improvement plan across selected farms since 2015.

'It is therefore in MHS's interests to prevent and resolve any lice issues at its sites and the company strives to improve mitigation methods currently in use.' Was Loch Hourn one of the selected sites?

Having seen similar statements to these in planning applications over the past 15+ years during which time there has been no long-term improvement in control of sea lice, our conclusion is that such statements are not a reliable indication of how things will turn out.

Marine Scotland in past consultations have suggested for existing fish farms, it is possible to assess an application of this sort for wild fish populations from information gained conducting a review of past performance of the fish farm(s) in question and, from consideration of the status of wild fish populations in nearby rivers.

4.2 Sea Lice challenge, para 2 states that `sea lice levels have not been a cause for concern at the Loch Hourn site and **no** treatments have been required for the last two production cycles. Marine Harvest have undertaken the Hourn expansion on the basis that the sea lice challenge will not be increased by the expansion process.

This statement is clearly incorrect. The Scotlands Aquaculture website records that:
2016, September, October and November, all had treatments of Emamectin Benzoate.
2017, January, February, May, June and July, all had treatments of Azamethiphos.
2018, May, June and September, all had treatments of Emamectin Benzoate, Azamethiphos, or both.

Summary

- (1) wild fish (salmon and sea trout) populations in the rivers of the area are at historic low levels.
- (2) the former increase in biomass from 1500 tonnes to 2500 tonnes at the beginning of the 2016 -2017 production cycle led to higher sea lice populations on farm salmon rising to many times the wild-derived louse population.
- (3) the higher farm salmon biomass and high estimated sea louse population at the Loch Hourn farm in 2017 correlates with a further decline in rod catches of sea trout and finnock in nearby rivers in 2017.
- (4) the applicant is uncertain about how they will ensure sea lice are effectively managed to the very low levels required to safeguard wild fish; they can only offer to do their best. Experience in 2016-2017 strongly suggests that 'their best' is not adequate to safeguard wild fish in nearby waters.
- (5) based on new SEPA regulation, the applicant will no longer be able to utilise *Emamectin Benzoate* formerly one of the most important in-feed treatments for control of sea lice on farmed fish.

We therefore request that the applicant is able to demonstrate, contrary to the information presented above, that the previous increase in on-farm biomass in 2016 was not associated with further declines in wild fish stocks in the area, and that, contrary to the information presented above, that the high sea lice figures reported in SSPO fish health reports for 2016 and 2017 were not associated with high emissions of larval lice into surrounding waters.

Our concern for wild fish extends beyond adjacent sea areas. It is well known that infective larval sea lice can move by 50km or more according to tidal currents and wind forcing. This is illustrated in the following website which presents real time output for a sea lice infection pressure model for around the salmon farming area of Norway.

<http://www.imr.no/lakseluskart/html/lakseluskart.html>

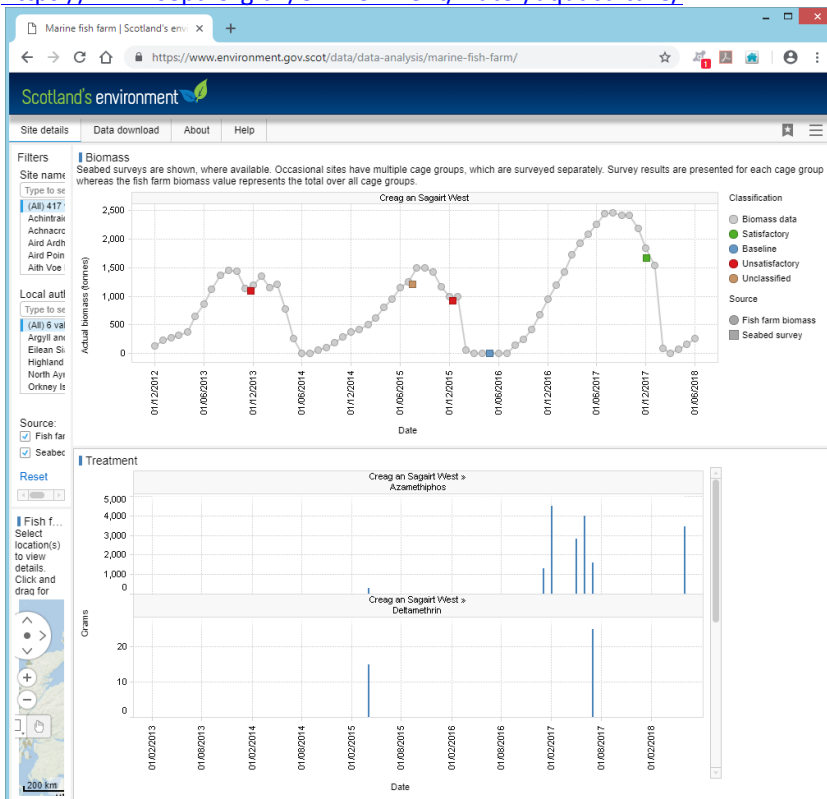
So we are concerned that sea lice emissions from the Loch Hourn farm will add to the already too high sea louse infection pressures in the Loch Alsh – Loch Duich area (also possibly part of a migration route for wild salmon post-smolts migrating up the west coast of Scotland); with knock-on increases to sea louse infection pressures for more distant waters as far north as Torridon or the west of the Isle of Skye.

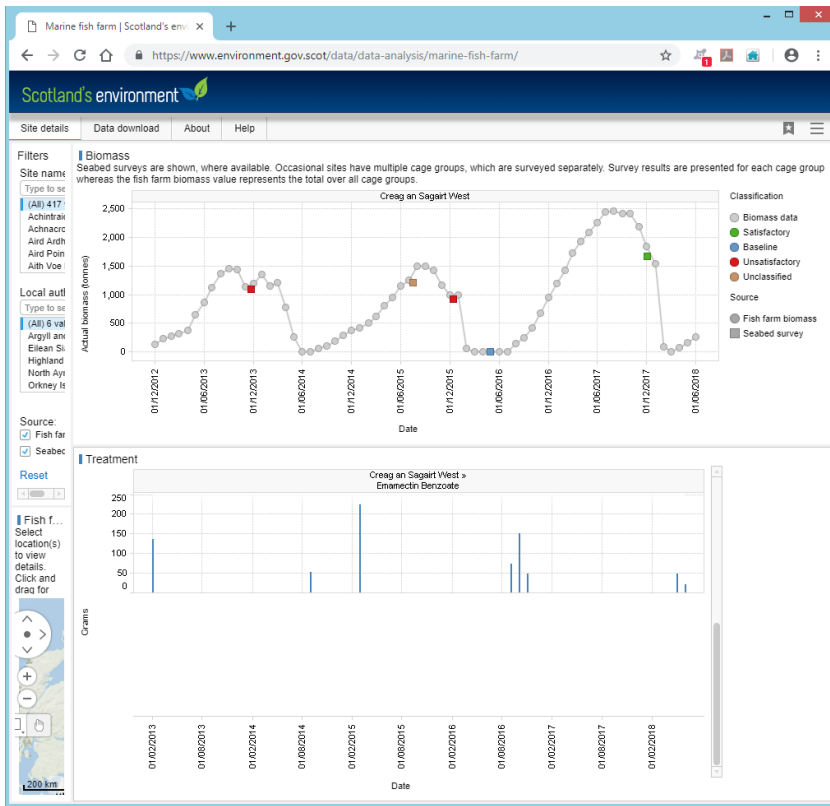
Summary of further advice:

- The applicant should demonstrate that the reported declines in catches of wild sea trout and salmon in the area from 2016 to 2017 was not associated with sea lice infestation associated with the Loch Hourn salmon farm.
- The applicant should explain the outcome of the previous increase in on-farm biomass from 1500 tonnes to 2500 tonnes in terms of sea lice management and control, in comparison to assurances made with planning applications in support of the previous increase in biomass.

- The applicant should demonstrate that it will be possible to control sea lice to levels where wild fish will not be adversely affected by the farm, by presenting evidence from other farms of similar size and type where sea lice have been controlled to very low levels (less than 0.1 adult female louse per fish may be required at higher biomass to prevent concentrations of larval lice in surrounding waters from reaching harmful levels).
- SEPA have indicated that the amounts of pesticide *Emamectin benzoate* that can be used on salmon farms as in feed 'medicine' to control sea lice is to be greatly reduced. As EmBz has been used in each of the 3 previous production cycles it has evidently been a major tool for sea lice control. The applicant should demonstrate how it can provide assurance that sea lice can be managed on a larger farm more effectively, than on the existing farm, to safeguard wild fish without use of EmBz.
- Experience elsewhere indicates that the effectiveness of many other sea louse management techniques can be compromised by gill disease. The applicant should indicate how gill disease or other health conditions may affect its lice control ability.

Appendix 1: Plots of estimated on-farm biomass and sea lice treatments used in previous three production cycles at the Loch Hourn farm. From SEPA aquaculture website <https://www.sepa.org.uk/environment/water/aquaculture/>





Should you have any queries or require more information, please do not hesitate to contact me.

Yours faithfully,

Peter Jarosz

Clerk to the Board