Dear MSP / Member of the REC Committee

Lack of regulation and enforcement on salmon farms with serious consequences for adult wild salmon in west Lewis

I am the owner of Garynahine Estate on the Isle of Lewis. I am also the proprietor of a lodge and hotel on the island, providing sustainable employment for some 30 individuals.

I would like to draw your attention to a very serious episode that has occurred on the Blackwater River (part of Garynahine), which flows into Loch Roag on the west side of Lewis. In July we found many dead, dying or distressed adult wild salmon in the tidal section of the lower part of the river; because of the drought fish were unable to access any further upstream.

These wild salmon were smothered with many hundreds of sea lice. We have an abundance of graphic photographic (some of which is attached) and video evidence (see http://bit.ly/salmon-eaten-alive), showing the extent of the infestations and how the sea lice have eaten away the skin of the fish. There is no doubt that the cause of the mortalities has been sea lice; laboratory tests have not found any other possibility.

Our wild salmon, on their return journey from the Atlantic, must pass through Loch Roag where there are seven salmon farms, all operated by The Scottish Salmon Company (TSSC). There is indisputable evidence that TSSC completely lost control of sea lice on the farms this summer. Numerous special waste skips full of dead fish have been leaving from the Loch Roag farms over the last two months and tankers are now transporting fish carcasses to North Uist for disposal in a landfill site.

There is no doubt that the explosion in lice numbers on the farms (spreading out into the wider sea loch environment) has had deadly implications for our wild fish, as they were waiting to enter the river. We are convinced that a very substantial proportion of the Blackwater River salmon run this year has been killed as a consequence; this has severe implications for future salmon numbers.

It seems that there are no regulations of salmon farms for the purpose of protecting wild fish. Given our experience, this begs several questions:

- Why has the Fish Health Inspectorate failed so dismally to ensure that sea lice have been effectively controlled in Loch Roag this summer?

- Why is there no transparency in terms of publication of sea lice numbers on salmon farms (the most recent published figures for TSSC farms are for April)?

- Why is there no independent monitoring of salmon farm sea lice counts?

- Why is there no obligation for salmon farm operators to keep wild fish interests informed when they have serious issues (TSSC were completely silent)?

- Why do wild fish interests not have the right to visit farms for the express purpose of checking sea lice numbers?

- Why was TSSC permitted to move fish, that were already lice-infested, into Loch Roag at a critical time of the year (April) for the outgoing wild salmonid smolt runs?

- Why is an enterprise, such as a salmon farming company, permitted to destroy our wild salmon run and damage the financial interests of others with apparent impunity?

The current situation is untenable. Furthermore, it threatens the future viability of the businesses we run on Lewis (many of our guests visit in order to fish the Blackwater River) and potentially the number we employ.

Finally, we are party to the attached letter with accompanying report pursuant to Regulation 14 of the Environmental Liability (Scotland) Regulations 2009 that was recently sent to the Director of Marine Scotland and the CEO of Scottish Natural Heritage.

Yours sincerely

Dougie McGilvray

Proprietor – Garynahine Estate, Isle of Lewis

Graham Black
Director
Marine Scotland
1B South
Victoria Quay
Edinburgh EH6 6QQ
marinescotland@gov.scot; DirectorMarineScotland@gov.scot

Francesca Osowska
Chief Executive Officer
Scottish Natural Heritage
Great Glen House
Leachkin Road
Inverness IV3 8NW
enquiries@nature.scot; ceo@nature.scot

Dear Sirs

Request for action and review in relation to damage to Atlantic salmon, Blackwater River, Loch Roag, Isle of Lewis

This request is made pursuant to Regulation 14 of the Environmental Liability (Scotland) Regulations 2009 by Salmon and Trout Conservation Scotland and the Garynahine Estate. S&TCS is a non-governmental organisation promoting environmental protection.

The Garynahine Estate owns the fishings on the River Blackwater and is therefore affected or is likely to be affected by the damage and clearly has sufficient interest.

Damage is occurring to the River Blackwater population of a protected species, Atlantic salmon and there is an imminent threat of further damage. The Blackwater flows into Loch Roag on the Isle of Lewis. The damage is considered potentially to have significant adverse effects on the conservation status of Atlantic salmon, including upon its natural range and areas it covers within that range and its long-term maintenance.

It is considered that the sea lice loading seen on the salmon in the accompanying information is highly likely to be have been caused, in full or in part, by the release of juvenile sea lice from one or all of the salmon farms operated by The Scottish Salmon Company in Loch Roag, in a manner that fails to protect wild salmonids from damage and is contrary to the North Atlantic Salmon Conservation Organisation (NASCO) 'Guidance on Best Management Practices to Address Impacts of Sea Lice and Escaped Farmed Salmon on Wild Salmon Stocks' goal that "*100% of farms to have effective sea lice management such that there is no increase in sea lice loads or lice-induced mortality of wild salmonids attributable to the farms"*

S&TCS and the Garynahine Estate jointly make this request for action and review to Scottish Ministers, who are the competent authority, as the damage is occurring to protected species in coastal waters, per Regulation 7(1)(a).

Due to the migratory nature of the species concerned, where damage is also occurring to the population of a protected species in freshwater, the request for action and review is also made to Scottish Natural Heritage, per Regulation 7(1)(b). SNH should note that the

Grimersta river, part of the Langavat SAC, specifically designated for the protection of Atlantic salmon, also flows into Loch Roag.

This request is accompanied by relevant information and supporting observations made in relation to the environmental damage or imminent threat of such damage being referred to you as the competent authority. The accompanying information demonstrates in a plausible manner that the environmental damage or an imminent threat of such damage exists.

The damage

Please see Annex A - Observations on the Movements and Condition of Migratory Fish, River Blackwater and Estuary, June to August 2018.

Sea lice counts (all stages) undertaken on five sampled wild fish taken by the Outer Hebrides Fisheries Trust were 686, 663, 760, 297 and 434.

Video footage is also attached.

Mechanism of damage

Sea lice larvae produced in huge numbers by fish farms are known and well understood to have the potential to damage wild salmonids. This is a position accepted by Marine Scotland Science.

"Salmon aquaculture can result in elevated numbers of sea lice in open water and hence is likely to increase the infestation potential on wild salmonids. This in turn could have an adverse effect on populations of wild salmonids in some circumstances. The magnitude of any such impact in relation to overall mortality levels is not known for Scotland. However, concerns that there may be a significant impact of aquaculture have been raised due to declines in catches of both salmon and sea trout on the Scottish west coast"[1]*.*

A 2018 review, commissioned by S&TCS from the Norwegian Institute for Nature Research (NINA)[2], examined all available research on the impact of sea lice, and concluded that "*the combined knowledge from scientific studies provides evidence of a general and pervasive negative effect of salmon lice on salmonid populations in intensively farmed areas of Ireland, Norway and Scotland. … Levels of additional mortality by salmon lice as indicated in several scientific studies may result in salmon stocks not achieving river specific conservation limits and, if sustained over time, could result in significant cumulative reductions in adult salmon recruitment.*"

The SAMS Report for the ECCLR Committee, also published this year, has concluded that *"the main treatment methods used in Scotland are experiencing reduced efficacy in dealing with sea lice on farms. New techniques are being applied, although the long-term success of these is uncertain. The legislative and voluntary frameworks that underpin the management of lice levels on farms are not transparent. They appear neither to be succeeding in controlling sea lice, nor capable of addressing the environmental effects of the lice.*"[3]

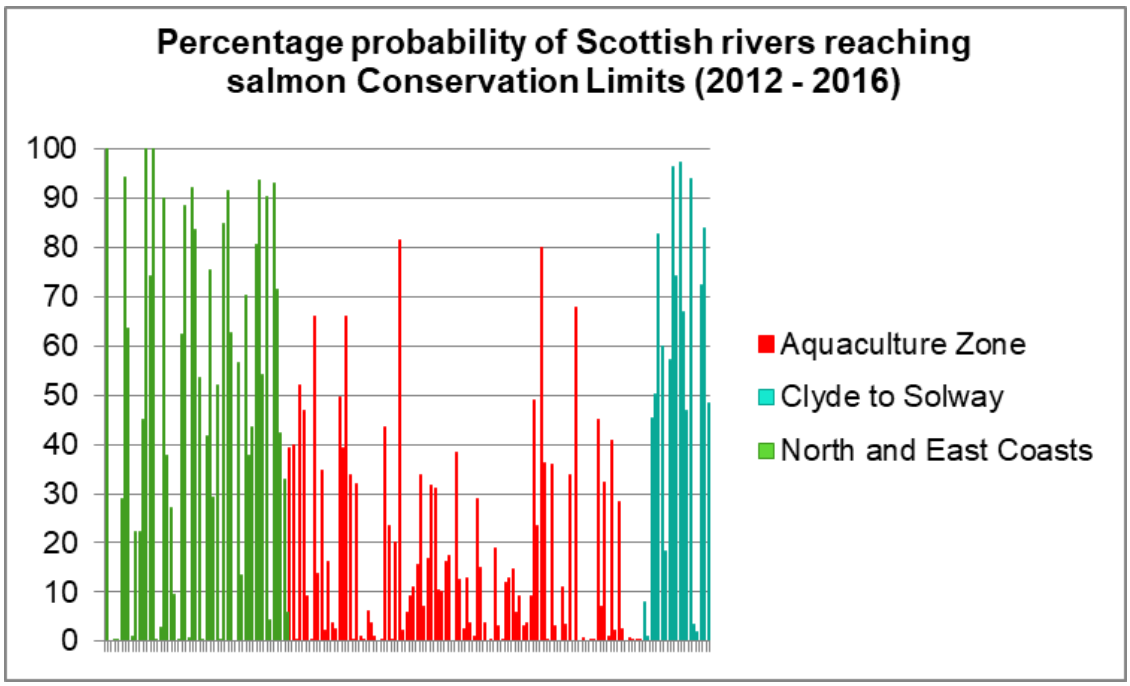
Data shows that, for wild salmon in the 'aquaculture zone' of the Scottish west coast, the percentage probability of Scottish rivers reaching salmon Conservation Limits (five-year

[1] MSS (2016) Summary of information relating to impacts of salmon lice from fish farms on wild Scottish sea trout and salmon. June 2016

[2] Thorstad, E.B. & Finstad, B. 2018. Impacts of salmon lice emanating from salmon farms on wild Atlantic salmon and sea trout. NINA Report 1449: 1-22. Trondheim, Norway, January 2018 at https://brage.bibsys.no/xmlui/handle/11250/2475746

[3] Para 2.1.4 at page 15

average 2012-2016), shown using Marine Scotland Science data from the conservation assessments for 2018 by river and assessment group[4], indicates a clear impact on the conservation of wild Atlantic salmon, with Atlantic salmon populations in rivers in the aquaculture zone far less likely to be reaching Conservation Limits.



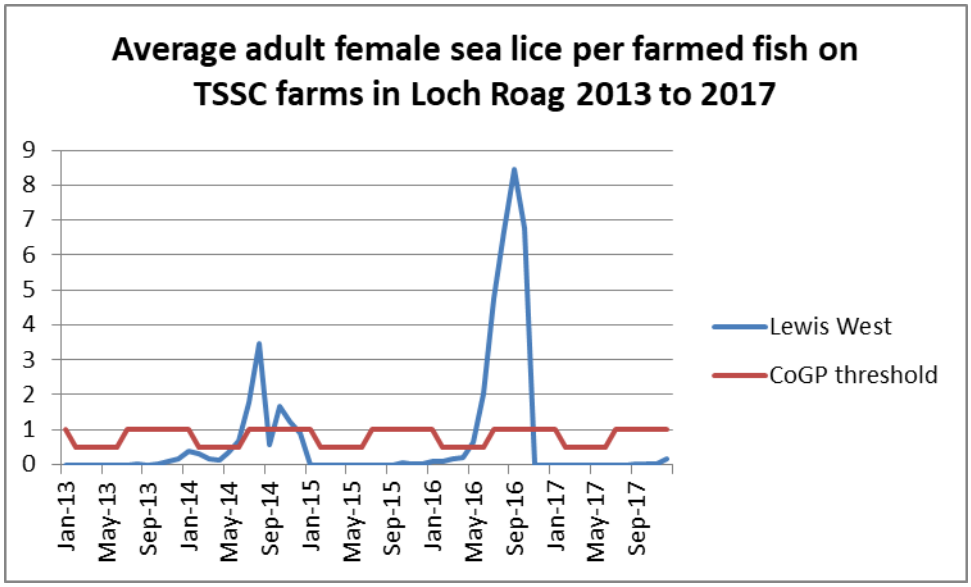
Location specific information – TSSC fish farms on Loch Roag

It is entirely plausible, indeed highly likely, that the level of sea lice infestation seen in Blackwater salmon has been caused by the release of the number of sea lice larvae from TSSC sites on Loch Roag, leading those salmon entering Loch Roag, and being held in sea water due to low river flows, to experience extreme infestations with sea lice, which would not, without the presence of the fish farms, have occurred.

TSSC farms on Loch Roag operate in, and are the only fish farms in the Lewis West region, for which aggregated sea lice data was reported by the SSPO in three-monthly Fish Health Management Reports over the period of 2013 - 2017.

The data on aggregated sea lice number of fish farms shows that there has been a failure to control adult female sea lice numbers on the farms in this region, in the last year of each of the last two production cycles.

[4] An explanation of Conservation Limits, and the probability of rivers meeting them, is available here: http://www.gov.scot/Topics/marine/Salmon-Trout-Coarse/fishreform/licence/status



This failure to control adult female sea lice on fish farms leads to the production of vast numbers of sea lice larvae and their release into the wider sea loch, at levels way above any natural or background level.

Note also that Marine Scotland Science has repeatedly stated "*that adherence to the suggested criteria for treatment of sea lice stipulated in the industry CoGP may not necessarily prevent release of substantial numbers of lice from aquaculture installations".*

More recent publicly available data from SEPA, the FHI and the SSPO, which covers the period to the end of March 2018 only – no more recent data has yet been published – suggests that four of the TSSC farms on Loch Roag hold farmed fish at the end of the second year of production about now, which is generally accepted as the period within which adult female sea lice numbers on fish-farms hit their peak.

West Roag:
Gousam – long term fallow
Kyles of Vuia – stocked Jan 17, so in second year, peak biomass so far was in March 2018 at 1329 tonnes, treated with deltamethrin in February 2018
Vuia Mor - stocked Jan 17, so in second year, peak biomass so far was in March 2018 at 1370 tonnes, no treatments in Jan to March 2018
Vuia Beag - stocked Feb 17, so in second year, peak biomass so far was in March 2018 at 1253 tonnes, treated with azamethiphos in March 2018

East Roag:
Eughlam – long term fallow to March 2018, when re-stocked
Taranaish - stocked March 17, so in second year, peak biomass so far was in March 2018 at 1568 tonnes, no treatments in Jan to March 2018
Vacasay - stocked November 17, peak biomass so far was in March 2018, already at 1094 tonnes, so perhaps not stocked with smolts in November 2017, treated with deltamethrin in February 2018

Published on-farm sea lice figures show an upward trend at all stocked Loch Roag sites from January to March 2018. The only slight dip is at Kyles Vuia between February and March, where TSCC treated for sea lice with deltamethrin in February.

	Jan	Feb	Mar
Eughlam	F	F	F
Gousam	F	F	F
Taranaish	0.03	0.12	0.11
Vacasay	0.19	0.29	0.35
Vuia (Kyles)	0.05	0.68	0.47
Vuia Beag	0.19	0.25	0.63
Vuia Mor	0.34	0.29	0.48

It is not known what sea lice levels have been on TSSC farms from April to July 2018 as the industry has not yet fulfilled its commitment made to the ECCLR Committee this year to publish, by the end of April 2018, as close to real-time sea lice data as possible.

Amoebic Gill Disease (AGD) and complex gill issues at two TSSC sites on Loch Roag were reported to FHI in late 2017. It is understood that the presence of gill diseases can make treating for sea lice infestation in farmed fish difficult to achieve without significant mortalities, leaving untreated farmed fish that would otherwise be treated for lice. Total on-farm mortalities across Loch Roag have been rising towards March 2018, suggesting that disease issues may be occurring on some of the TSSC farms. It is not known what mortalities have occurred since March 2018.

Mortalities (tonnes):

	Jan	Feb	Mar
Eughlam	F	F	F
Gousam	F	F	F
Taranaish	23.6	32.2	53.7
Vacasay	3.7	3.7	5.6
Vuia (Kyles)	27.1	10.4	13.9
Vuia Beag	18.3	17.3	14.7
Vuia Mor	7.5	20.6	17.2
Total	80.2	84.2	105.1

Request for action and review

Pursuant to Regulation 14(4), you are requested to determine whether or not you are satisfied that there is an imminent threat of damage or of actual damage in this case and, if so satisfied, you are requested to advise TSSC of the same and seek representations from TSCC.

Given that the threat of damage remains, you are asked to give this matter your urgent attention.

I look forward to hearing from you as soon as possible.

Yours sincerely

Guy Linley-Adams

Annex A

Observations on the Movements and Condition of Migratory Fish, River Blackwater and Estuary, June to August 2018.

The Blackwater river is situated in East Loch Roag on the west coast of Lewis. The Scottish Salmon Company operates several fish farming sites in east and west Loch Roag, the closest of these being approximately 4 km from the estuary of the Blackwater river. (biomass etc to be added)

11 June
Sea trout and finnock were seen going in and out of sea pool with the tides that week. Underwater footage shows dorsal fins eaten away by sea lice. (video evidence).

15 June
First salmon and grilse arrived in sea pool. Heavy sea lice burdens but no counts done and not sufficient numbers of lice to cause concern. Low water at this time and fish stayed in the pool.

From 15 June through to 19 July
Numbers of fish in the sea pool increased but there was no freshwater to allow fish to run upriver. Approx half of the tides during this period would enter the sea pool and the water was saline the entire time.

By 18-19 July
The fish were showing signs of stress – constantly flashing on their sides underwater, cruising very slowly and remaining static near the surface with tails and fins showing, generally very lethargic. Fishing was suspended on 19 July and a few dead fish were found on the banks having beached themselves.

Week commencing 23 July
A number of fish were seen to have damage on the head, the gill covers and the dorsal fins. Each day I walked the banks of the sea pool and attempted to return to the water fish which were trying to beach themselves on the sloping banks of the pool. During this week I picked up the following numbers of dead salmon/grilse from the banks of the pool. In addition to what I physically collected, there were numerous other carcases visible on the bottom of the pool and very probably others on the bottom in deeper water which I was unable to see.
Mon 23 – 3
Tues 24 – 6
Wed 25 – 8
Thurs 26 – 12
Fri 27 – 16
Sat 28 – 21
Sun 29 – 8

On Friday 27 July, I witnessed several fish leaving the sea pool and going back to the estuary. Over the following 4 days carcases were seen on the shoreline of the estuary.(witnessed by OHFT and photographic evidence) Numbers are difficult to give accurately as some carcases were taken away by the tides and many more were taken by scavengers. (Black backed gulls, ravens and crows mainly). I would estimate the total number of dead fish at 150-200.

On Sunday 29 July, Paul Hopper (biologist with the Outer Hebrides Fisheries Trust) visited the sea pool and we took a dead fish from the pool for him to obtain samples. An inspection

at the time showed nothing obvious wrong with the internal organs of the fish but Paul did comment on the high burden of sea lice and the dermal abrasions on the fish. Water temperatures were taken in both the sea pool and freshwater above the pool and readings gave no cause for concern. A salinity reading showed the sea pool to be too saline to kill the sea lice. Paul suggested that we try sweep netting the pool with a view to transporting fish to a deep freshwater pool up the river.

On Monday 30 July, OHFT employees Donnie Maciver and Paul Hopper got the relevant permissions to net the pool and, with help from a team of volunteers, we moved 61 fish from the sea pool to the long pool. Six dead fish were removed from the sea pool at this time and several more were seen in deeper water. A dead fish was chosen at random for a lice count and the number of lice was 686.

On Tuesday 31 July we netted the pool again and transported a further 19 salmon to the long pool. Sea lice counts were done on 3 live fish – a small coloured fish had 296 lice and two fresh grilse had 653 and 757 lice attached. Paul had notified Marine Scotland Fish Health Inspectorate of the "fish kill" and their Emergency On-Call officer attended on Thursday 2 August. River levels had risen (starting on the evening of Tuesday 31 July) and almost all the fish had either died, gone upstream or gone back to sea. We netted one badly damaged fish from the pool and FHI took samples and inspected the fish. Lice numbers were low but by then the water was almost entirely fresh. An inspection of 2 carcases (recovered from the sea pool on Saturday 28 July) from the freezer at Garynahine lodge was also carried out and the FHI inspector commented on a much higher number of lice.

There is plenty photographic evidence of the damaged and dead fish, and the unusually high sea lice burdens can be clearly seen.

The Scottish Salmon Company (SSC) are harvesting fish and there appears to be significant numbers of dead fish being landed at Breasclete pier. I saw 5 x 1 ton tubs full of dead fish on 2 August and also saw a fish farm boat unloading a further 4 x1 ton tubs of dead fish on 5 August. Three "special project" skips have been situated at the fish farm base at Breasclete for the last week but the extent of the contents is unknown to me.

The fish for harvesting are adults, typically 3 -4kg in weight, and will carry many more lice than the smaller fish from the year before. Sea lice counts should have been done on the penned fish but information on numbers is notoriously difficult to obtain – at best 3 to 4 months after the counts take place. It is unknown if/when any sea lice treatments took place in Loch Roag.

Thus far nobody has been able to offer any explanation for the high numbers of sea lice on the Garynahine fish other than the release of lice from the SSC farms in Loch Roag.

FHI has provided results from the first part of their testing of the dead fish which was sampled and the histology was negative. We are still waiting for virology results. It is extremely likely that the fish deaths at Garynahine were caused by excessive numbers of sea lice and this is supported by the dermal abrasions on the fish carcases.