

LETTER OF OBJECTION FROM SENIOR FISHERIES BIOLOGISTS

Mrs C Leary
Comhairle nan Eilean Siar
Department for Sustainable Communities
Sandwick Road
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24th March 2010

Dear Mrs Leary

Application Ref: 10/00105 – Toa Tolsta Fish Farm, Broad Bay Isle of Lewis

We are a group of fisheries biologists with expertise and interest in the interactions between aquaculture and wild salmonid fisheries. We are writing to object to the application to site a fish farm at Toa Tolsta in Broad Bay.

We understand that Lighthouse Caledonia have recently submitted an application for a fish farm in Broad Bay. In and around Broad Bay, an area currently unaffected by aquaculture there are several healthy wild fisheries with an annual catch of some 400 salmon and 850 sea trout. These catches have recently been increasing. There is considerable concern by locals who fish these rivers that the fish farm may adversely affect these fisheries. That is a concern that we share.

In previous planning applications by fish farmers, the question of the nature of the interaction between farmed fish and wild salmonids has been one of the most contentious issues for consideration and resolution by the planning officers. In particular, local wild fishery owners and fishers have suggested that sea lice emanating from salmon farms have been a major causal agent in the decline of wild populations of salmon and sea trout and consequently fish farms should not be located in close proximity to the few remaining healthy wild fish populations in the west highlands.

Some of those planning officers have commented, when processing such applications, that there has been insufficient scientific information available to help them assess the risks and come to a balanced conclusion based upon the evidence. It is our intention to provide expert advice regarding the possible damaging effects of aquaculture, which will hopefully equip the planning officer with a better understanding of the risks posed to wild fish populations by a proximate aquaculture production unit. (In this instance we would define proximate as a unit within 20km by sea of a river mouth).

No scientist is able to provide 'absolute proof' regarding cause and effect however what we can offer is the best current hypothesis based upon observation and study of the phenomenon in question. It is not the job of science to 'prove' that sea lice from fish farms cause declines in wild fish but rather to test the hypothesis against the available data. Part of this process involves an assessment as to whether alternative hypotheses fit better with the existing knowledge systems. The strength of the hypothesis will be assessed by the principles of simplicity, predictive power, robustness against falsification and conservatism.

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In this case the potential predictive power of the hypothesis is very important as it may allow us to predict that placing a fish farm in a certain location proximate to a river mouth presents a significant risk to the future sustainability of the local wild salmonid populations. It may well be that the local wild fishery is of greater economic and social importance to the locality than the additional farmed fish production or it may be that the fish farm can be moved to a less risky location.

The general case or hypothesis that lice generated by fish farms can damage wild salmonid populations relies on a number of causal links:

1) Farmed salmon initially become infected by wild salmonids in shared waters

This is widely accepted by scientists.

2) Farmed salmon then become part of a dynamic host-parasite system involving farmed and wild salmonids

This is widely accepted by scientists.

3) As a result of the large numbers of farmed hosts, infection pressure on wild salmonids is increased over background levels

This is widely accepted by scientists.

4) The increase in infection levels on wild fish increases mortality levels

There is ample evidence from laboratory studies and from fish farms that lice have the potential to cause disease and mortality in their hosts. Given the high lice burdens on wild fish proximate to fish farms the balance of evidence is that high levels of lice infection will cause disease and increased levels of mortality of wild sea trout and salmon.

5) The level of louse induced mortality is sufficient to explain a high proportion of observed regional declines in numbers of wild salmonids

Since this is the most controversial element of the general hypothesis let us examine whether it meets the tests of simplicity, predictive power, robustness against falsification and conservatism:

Simplicity

The hypothesis is simply understood. It relies on three straightforward concepts:

- A reservoir of farmed hosts amplifying infective pressure on wild fish.
- Transport of infective larvae to areas where wild fish become infected.
- Some heavily infected fish dying.

Predictive power

Simple predictions such as lice infections will be worse in areas with fish farms and declines in wild stocks will be more apparent in these areas are largely borne out. Given the complexity and range of factors that act on fish populations, the power of the louse hypothesis in explaining observed patterns of decline is surprisingly good.

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Robustness against falsification

Robustness against falsification might be regarded as the greatest strength of the sea louse hypothesis. Despite at least 15 years of fierce industry opposition and numerous scientific studies and surveys, the hypothesis has not been falsified; indeed it appears to have become more generally accepted. While 15 years ago the salmon farming industry totally rejected the suggestion that fish farms would impact on wild stocks as did some scientists the debate is now largely focussed on the level of that impact not on its reality.

Conservative

The hypothesis is conservative and no great leaps of understanding or novel new biological principles are required to underpin it.

The Aquaculture Code of Good Practice

We have not encountered any evidence to suggest that adherence to the Aquaculture Code of Good Practice by a fish farmer will neutralise the effects outlined above and thus significantly reduce to the threat posed to wild fish by fish farms.

Conclusion

The siting of a fish farm in close proximity to an important and healthy wild salmonid population constitutes a significant threat to the long-term viability of that population. Thus we must advise that if the Comhairle grant planning permission to Lighthouse Caledonia for the fish farm in Broad Bay there is a substantial risk that the local fisheries including the rivers Gress, Laxdale and Creed will be adversely affected. This is so even if the fish farmer abides by the aquaculture Code of Good Practice.

Given the relative rarity of water systems containing healthy and increasing populations of salmon and sea trout on the west coast of Scotland, we believe that there should be a presumption against locating new fish farms proximate to such areas. This is an approach that is consonant with the NASCO precautionary approach to which the UK is a signatory.

Yours sincerely,

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