

S&TCS Aquaculture Policy Statement

April 2017

The problem

Wild salmonids in the 'aquaculture zone' on the west coast of Scotland are in trouble.

Recent Scottish Government classifications of the country's salmonid rivers' fish populations, covering key rivers in the west Highlands and inner Hebrides, show wild salmon stocks are not reaching their conservation limits (a measure of the overall health of the population). Almost no rivers within salmon farming's heartland of the west Highlands and inner Hebrides has, in Scottish Government's estimation, a sufficiently healthy stock of wild salmon.

Fisheries scientists are clear that sea lice produced on fish-farms harm wild salmonids, both at an individual and at a population level. Scientists from Norway, Scotland and Ireland have reviewed over 300 scientific publications on the damaging effects of sea lice on sea trout stocks in salmon farming areas, and examined the effect of sea lice on salmon, concluding that sea lice have a potential significant and detrimental effect on marine survival of Atlantic salmon with potentially 12-29% fewer salmon spawning in salmon farming areas.

They also note that reduced growth and increased mortality will reduce the benefits of marine migration for sea trout, and may also result in selection against anadromy [migration of fish between freshwater and seawater] in areas with high lice levels. Sea trout may also suffer altered genetic composition and reduced diversity, leading to the complete loss of some sea trout populations.

The science is giving us a very loud warning, but this is not being translated into effective control of fish-farms, which is essential to protect wild fish.

Although analysis of the control of sea-lice on Scottish fish-farms is severely hampered by the lack of farm-specific sea lice data, S&TCS is constantly analysing data published by the Fish Health Inspectorate, the Scottish Environment Protection Agency and the Scottish Salmon Producers' Organisation and others. That analysis, regularly published by the S&TCS, provides strong evidence that sea lice numbers on fish farms continue to rise to unacceptable levels, particularly during the 2nd year of production, where they can remain for many months, threatening wild salmonids.

Average adult female sea lice numbers per farmed fish are linked to the biomass of farmed fish held on the farms - the greater the tonnage of farmed fish the more adult female sea lice and the greater the production of free-swimming juvenile lice into the surrounding sea lochs.

There is evidence of widespread failures of available chemical sea lice treatments to limit sea lice numbers on farmed fish, strongly suggesting that resistance and tolerance is now becoming widespread. The use of wrasse as cleaner fish is not the panacea it is often held up to be.

It is not just sea lice that are a problem for wild fish. As the Scottish Government acknowledges, escapes from fish farms are a major cause for concern for conservation of wild fish. Escaped fish

represent a disease hazard, occupy valuable habitat to the exclusion of wild fish and have the potential to interbreed with wild fish, leading to dilution of genetic integrity of wild stocks.

The solution

S&TCS fully supports NASCO's agreed international goals that there should be no increase in sea lice loads or lice-induced mortality of wild salmonids attributable to fish farms and 100% of farmed fish should be retained in all production facilities.

To achieve this in Scotland, S&TCS has made a number of recommendations:

- 1) **Access to information** - the major barrier to proper scrutiny of the fish farms - the lack of published farm-specific sea lice data - needs to be removed and further information concerning newer control methods for sea lice should be recorded and published to ensure that a complete picture is obtained of the sea lice control methods used at any particular farm.
- 2) **Reviewing the Code** - the fish farming industry requires tougher regulation. The time has come for a Government-led review leading to the current voluntary code being made a statutory code, as provided for in the Aquaculture and Fisheries (Scotland) Act 2007, with the express purpose of protecting wild salmonid (salmon and sea trout) populations from potential harm. As part of this, an 'upper-tier' sea lice threshold should be introduced, above which an immediate cull or harvest of farmed fish is mandated.
- 3) **Changing the law to protect wild fish** - the Scottish Government must accept that wild fish are not sufficiently protected in domestic law and should amend legislation with the express purpose of protecting wild fish from potential damage caused by fish-farms, with Scottish Ministers given a legal duty - and inspectors the requisite powers - to control fish farms to protect wild fish populations.
- 4) **Relocating poorly sited farms** - over the medium term, those farms consistently failing to control sea lice or causing other unacceptable environmental impact should be closed and / or relocated. The 2008 relocation programme was allowed to run into the sand. The Scottish Government must now return to that process, moving fish-farms away from salmonid rivers and migration routes.
- 5) **Ending the threat from escapes** - there should be a very early end to farmed smolt production in open cage farms in river systems that contain wild salmon. Consideration also needs to be given to requiring farming of triploid (sterile) salmon only to avoid genetic dilution if wild stocks.
- 6) **Moving to full closed containment** - finally, there must be a renewed focus on moving to full closed containment of farmed salmon production in Scotland, with complete 'biological separation' of wild and farmed fish. The rest of the world's salmon farming production is heading in that direction and Scotland must not be left behind.