

Environment, Climate Change and Land Reform Committee

Environmental impacts of salmon farming

Written submission from Marine Concern

Preamble: I would like to thank the ECCLR Committee and following that the REC Committee inquiry on aquaculture in Scotland for the opportunity to engage with Scottish government's inquiry into the environmental impacts of salmon farming. The SAMS review appears not to have been well publicised and the time given to respond inadequate. I obtained a Marine Science Degree at SAMS/UHI, so it is with regret that I can only respond in four pages to the 174 page document. A generalisation overview follows with concentration on the seals issue where I have in-depth knowledge on fish farm worker/seal interactions. I am sure that other groups will respond to their own areas of expertise.

This can be an emotive subject, especially when seals are needlessly shot, I have been involved with marine environmental issues and NGO's for some considerable time; to date, in general, anyone with an environmental slant has had restricted access or no access at all to important platforms at all levels; local and national, by restricting this to four pages, this review by default now falls into the same 'restricted access' category.

The 'Precautionary Principle': Even with today's technological advances we still do not know the full consequences of our actions within the marine environment this was addressed at the Rio (Earth) Summit 1992 and Agenda 21; of importance here is the introduction of the 'Precautionary Principle' and the often forgotten section of 'Strengthening the roles of various groups such as NGO's, indigenous peoples and their communities'.

For many years Scottish authorities have restricted, even blocked access of such individuals and groups to vitally important forums and meetings such as the Scottish Seals Forum and the Lismore Seal Management Group, allowing the industrial scale commercial industries to forge ahead mainly to their own agenda, their preferred method of operation. Marine Concern operates on the principle that man is part of the system, part of the ecosystem and needs to exist alongside the natural environment; that is alongside, not at the expense of.

In the marine scenario we need to see the Bigger Picture: The current system, across most sectors e.g. Planning, works on a terrestrial template, people with terrestrial qualifications; often applying the lay-man's analogy of farming into a marine equivalent: please note that there are very few, marine parallels. Fish farm treatments are capable of destroying entire crustacean communities with catastrophic effects for species, which rely upon them; the full effects are not known.

A General Detailed Overview as well as Experts in a Particular Field: These real and experienced events are further compounded when those in authority, even the advisors to government appear out of their depth in the marine scenario, some appear to have their views and comments suppressed at national levels. Two examples here are that one scientific report was unable to complete its study due to equipment failure, yet its findings are recorded in the review. A second point; one of license requirements within seal shooting; that of 'Last Resort'; this has been omitted entirely, a vital component. The fact is that in Scotland most seal licenses are issued as a matter of first or second level response. The term 'last resort' is used as somewhat of a joke by the industry.

Self-Regulation Does NOT Work

Combine the above with an appalling lack of checks, if any; self-regulation simply does not work; this is an industry with a known record of abusing the system. This system IS currently broken, abuse to the Scottish coastal environment occurs everyday. While the industry was small scale, nature was able to overcome most tribulations but now that the industry is at an industrial scale it cannot. This should be ringing alarm bells as the government and industry wants to double capacity.

Examples of Ruin Exist: The salmon farming industry in Chile and Peru collapsed in on itself, with the current lack of direction and legislation the Scottish salmon industry may soon follow the same fate. It should be noted that a 1% increase in the Chinese market would require a 50% increase in Scottish production; that in its current form is not sustainable. SEPA have just been forced to release information under FOI: 2.3million salmon dumped in nine months by one company, also reported in The Scottish Daily Mail (5 February 2018) this takes the yearly overall count to probably well over 10 million diseased and dead salmon being dumped in one year.

A Scottish Example: This is such an important matter that I feel it needs a recent Scottish example, that of the mussel farming in Loch Etive. The industry, thought to be benign, expanded, concerns were ignored. Mussels are highly efficient syphon feeders, filtering particulates, which include larval stages of marine life. The local ecosystem altered; local people witnessed the effects, as the barnacles all but disappeared, everything was overwhelmed with mussel spat. Sea (Fjordic) lochs have a restricted flow that limits nutrients, eventually the loch reached its carrying capacity and the native edible mussel had competition from a previously sparsely occurring native species, one that has no commercial attributes. The industry voluntarily shut production but at huge cost to small companies and local people. The Scottish salmon industry is far from benign and some locations are beyond the carrying capacity of the seas mitigating effects.

Closed-Containment - The Only Future That Mitigates Most Issues

The salmonid farming industry has long escaped real scrutiny at the cost of the Scottish environment but it is now at such a massive scale that Scottish seas are straining to deal with the abuse. The industry has made considerable strides in some directions to improve but they have become extremely stubborn to the one method of farming which will all but eliminate most environmental concerns; that of closed-containment. Closed-containment could support expansion; while minimising most of the natural concerns...Scotland could become a world leader in this technology, it is available and proven.

'Real or Perceived Depredation Risks, Salmon Farms Resort to Shooting Seals'

The Issue of Predators: Some of the salmon farming industries current issues with predators are self inflicted, the lack in effective spatial planning probably the biggest factor. Take seals for example, they are an inquisitive species, often investigating people in boats, on the shoreline, including farm structures. For this action around salmon farms they are shot. Placement of a salmon farm close to a protected haul-out is going to attract seals. The nearest farm structure in the Lismore Special Area of Conservation, designated for seals is just 20 metres from the 'protected' haul-out. By default, seals have to pass-by, they have no other route to go...unless they are ALL shot which was the case that initiated our first EC seal complaint.

Curiosity Kills the Seals: Floating debris, flotsam and indeed any floating structure such as a fish farm, stocked or fallow, attracts fish. Aggregations of fish are known to accumulate, so much so that it is used as a fishing method in some parts of the world. Aggregations of fish attract predators; seals are interested due to curiosity and attracted by wild fish; yet, under the current situation they are still shot!

Every Seal is 'Rogue'! Science has shown that a very small number of seals become, what has been termed, 'salmon specialists', necropsies have revealed a very small percentage of their stomach contents have been salmon, this has been confirmed by studying otoliths (ear bones) and by DNA testing. So seals are not the major predators that the industry would have you believe, much of the internal industry hype around seals is hearsay and hereditary, but extremely difficult to overcome. So much so that the term which was initiated during the old Conservation of Seals Act 1970, 'rogue' was to extend to any seal, whether it was near to a salmon farm or not. Seals are opportunistic feeders, altering to seasonal availability but their preferred diet is flounder and herring, squid, crustaceans and molluscs. Poor husbandry is known to lead to 'morts' (dead salmon) being taken from the 'Cod-End'; actively encouraging the seal 'salmon specialists' into close proximity of nets.

The Scottish Salmon Producers Organisation Representative, Professor Thomas during his presentation to the Scottish Parliament during the scrutiny of the Marine Bill, stated on Parliamentary video, that Common Seals are too slight to cause damage to salmon farm netting, yet they still get shot, WHY? Workers, that have caused damage to nets by boats and propellers etc. have been actively encouraged to protect their jobs and place the blame firmly on the seals. A scientific report in Norway has shown that most damage IS MANMADE, usually due to poor management of nets and tensioning.

"Last Resort": 'A Desperate Remedy'; Shooting Seals.

'Last Resort'; a term used in the industry and one of the conditions of the seal shooting license as issued by Marine Scotland. Incidentally, 'Last Resort' has been omitted from the SAMS review. I think it is worthwhile revisiting the dictionary as the industry, nor government clearly understand this term of 'Last Resort': *"Last Chance, Only Hope, Last-Ditch Effort, Fall-Back...A Desperate Remedy"*. Some would assume that all other avenues have been exhausted BEFORE shooting or BEFORE a license to shoot is granted: WRONG! In fact, the bullet remains the cheapest and most often the first and only resort.

The salmon industry's preferred conventional method of anti-predation is by using acoustic deterrents and until recently, this has generally been approved and accepted by SNH despite being used in known cetacean hot-spot regions. The SAMS review covers the use of harassment on cetaceans in some depth and whether, it is intentionally or recklessly it is illegal: so why are acoustic deterrents still being used?

"All cetacean in UK waters are listed and in need of "STRICT PROTECTION".

Inner Hebrides-Minches SAC for porpoise covers an extensive area throughout the Scottish west coast.

It is an Offence to Intentionally or Recklessly Disturb a Cetacean.

ACOUSTIC DETERRENTS DISTURB CETACEANS

"Despite their widespread use in Scotland, the ability of ADDs to actually deter seals from

fish farms has not yet been convincingly demonstrated" (Except high up in river systems, one report indicated 50% success)

Very few fish farms adhere to the strict terms of the Marine Scotland License to shoot seals: Yet seal shooting continues with Marine Scotland complimenting itself on a reduction of the numbers of seals being shot. When in reality without independent checks, the true number of seals being shot is unknown.

The Facts? Seal Shooting Numbers: The lowest current number of seals shot recorded on the Marine Scotland website is 125 (2014) or 218 (2011), made up of both Common Seals and Grey Seals. Additional information needs to be considered. The Canadian seal hunts have good records on what they call; "Struck and Loss" figures and these exceed 50%. That means that more than 50% of seals shot or clubbed escape; many of these die a long painful death. 'Struck and Lost' is covered in the SAMS review.

"Despite being a license condition, most shot seals are not presently made available for necropsy"

The terms of Marine Scotland license are to recover and return dead seals to the Scottish Agricultural College (SAC) for necropsy. A representative from the SAC suggested concern over a lack of anything other than 'clean-kill' carcasses received. A review of shooting a small target from a moving vessel or platform at sea, with waves etc. there are going to be a higher proportion of near misses or non-lethal shots taken, these are not shown in the data.

Seals Shot; 'Out of Sight, Out of Mind! Of those shot seals returned for necropsy more than 30% have been found to be either pregnant or lactating; A massive welfare issue and a case of '**One Shot, Two Lives**'. Witness reports suggest that many seals are still being shot but not recorded. A conservative calculation of under reporting would be around 25% of the actual figures shot. With this in mind and my extensive experience with the seal/fish farm workers interactions combined with a reasonable knowledge of firearms/shooting (Royal Marines, Police & Agricultural) and no independent review of **ANY** Marine Scotland process with regard to shooting, I would suggest that the best accurate reviewed numbers of seals being shot are in the region of 420 to 730 per year; this could be higher.

Around 600 Seals are Shot Under Licence in Scottish Waters Every Year; Maybe More!

"A review of the new licensing scheme was published by Marine Scotland. The review reported a significant reduction in reported shootings of seals at fish farms and coastal fisheries"

"The data.... are based upon self-reporting by license holders, and are not presently verified independently, potentially risking under-reporting or shooting of seals without license".

WHO KNOWS: THERE ARE NO INDEPENDENT CHECKS; - NO SCRUTINY!

"As Salmon Production Increases without changes in Current Methods More Animals WILL be Shot"

The SAMS review also goes on to state that as salmon production increases without changes in current methods towards anti-predation more maritime animals WILL BE SHOT! The greater the adverse effects on the marine environment will occur. **Closed-containment will eliminate most of these issues.**

Worthy of Note: Changes about to come in to effect within the US Marine Mammal Protection Act Require any exporting Country to Abide by US Regulations i.e. NO SHOOTING

Problems: While this industry fails to be open and honest little will change, the environment and employment suffering. The Scottish tourist industry is left exposed. People's wellbeing should not be overlooked; it is already widely accepted that as an island nation will seek refuge and peace from being by the sea, take away our iconic species, interrupt scenic vistas and that could well adversely affect our already struggling NHS service. The 'planning service' is land-based and yet these land based officials see fit to legislate on marine issues where they still do not fully understand all of the marine interactions.

Closed Containment - Positive Action: If we ignore the overfishing of food sourcing problems for salmon feed then closed containment could afford relief to most if not all of the environmental issues surrounding salmon farming. As the method becomes cheaper to produce, install and maintain plus selling the product at higher rates due to their eco-credentials, we may be able to sustain this industry into the future.

A second option would be to use double skinned anti-predator nets, of the same mesh size, so as not to entrap additional wildlife. Currently, just one or two salmon farms utilise fully enclosed double anti-predator nets. None use secondary nets of the same mesh size so as to minimise various species by-catch. There are many excuses, made by the industry, all can be overcome but the industry does not want the extra expense and effort; the bullet is by far the cheapest method of keeping control of any perceived seal issue.

The industry will say that both are too expensive, the later would not work in current locations due to water flow, but in reply, reduce stocking density, situate in sensible/suitable locations and by not locating in almost every river mouth/sea loch entrance then some of those issues would not apply.

The time for change is now; for the industry, for our future and for that of our future generations:

Please Advocate Closed Containment.... This is YOUR WATCH!

Mark Carter