

Environment, Climate Change and Land Reform Committee

Environmental impacts of salmon farming

Written submission from Jean Ainsley

I am a Chartered Accountant working in Oban, we have a general practice with many of our clients involved in the tourist industry which is the economic life blood of Argyll. I also assist my husband in his wildlife watching cruise business which takes people from all over the world to see our wonderful marine and land wildlife in the Firth of Lorne Special Area of Conservation. Earlier in my career I studied for a PhD on pollution and its effects on rivers.

I would like to make several points regarding the recent paper written by the Scottish Association of Marine Science on some problems surrounding the salmon farming industry.

The main issues which I am concerned about are;

- The use of ADDs and the unlawful disturbance of porpoise and other cetaceans.
- The shooting of seals which is currently not being done as “a last resort” as required by legislation.
- The effect on wildlife tourism because of disturbance to cetaceans and the shooting of seals.
- The continued light touch by the statutory regulators of the industry as it continues to fail to meet standards on cetacean disturbance, shooting of seals, pollution and sealice and the regulators failure to enforce these standards
- The drive to expand the industry without ensuring that what is already there is not polluting the environment or damaging wildlife.

Use of ADDs

Harbour porpoise are acoustic predators using echolocation clicks to locate and capture prey, they are warm-blooded marine mammals with a relatively high surface-to-volume ratio. Therefore, if they are disturbed and excluded from fishing areas their ability to feed efficiently will be compromised. Hearing damage will lead to further reduced ability to find food and probable reduction in life expectancy.

Acoustic Deterrent Devices (ADDs) are used underwater to deter porpoise and other cetaceans from construction sites such as offshore wind farms. Many studies have shown that porpoise are disturbed and excluded long distances from where an ADD is activated (95% of porpoise excluded at a distance of 7.5km, Brandt et al). In these circumstances the use of ADDs is to stop porpoise being injured by blast noise and are only used prior to blasting. However, fish farms are using ADDs constantly to attempt to scare seals away from the farm which is disturbing and potentially injuring porpoise around and at significant distances from the farm. Although the SAMS report quotes a lot of the science that clearly shows that ADDs disturb porpoise it does not reach the correct conclusion that any fish farm using

one or an array of ADDs is committing an offence. It is against the law to deliberately or recklessly disturb a cetacean: Conservation (Natural Habitats &c.) Amendment (Scotland) Regulations 2007 (the "Habitats Regulations"), Habitats Regulation 39 (2) and Council Directive 92/43/EEC (The "Habitats Directive"). Should a wildlife boat operator disturb a porpoise knowingly he would rightly be prosecuted.

Why is it then that fish farms are given planning permission to knowingly use these devices in arrays of up to four at a time?

By allowing farms to use these devices the statutory authorities are failing in their duty to protect wildlife under the appropriate laws. The efficacy of ADDs is doubted, sometimes acting more as a "dinner bell" than a deterrent to seals. Even if farms could prove they were absolutely necessary (which they are not due to viable alternatives to keep seals and salmon separate) because porpoise are a European Protected Species (EPS) they would have to apply for a licence to disturb an EPS. Given the conditions to achieve a licence there is no way that a farm would get one, in fact the application would fail each of the three requirements (all three are required in order for a licence to be given).

Recently the Inner Hebrides and Minches area became a candidate Special Area of Conservation (SAC) designated for porpoise. There are many fish farms within this SAC and I expect that most are using ADDs, all these farms are breaking the law and the authorities are allowing that to happen. Cormac Booth (2010) produced a sound map from field data showing the SE Sound of Mull to be completely ensounded by ADDs with levels above 105 dB re 1 μ Pa (RMS). . When the farm at Fuinary began using an ADD for the first time in 2008 porpoise were excluded from the width of the Sound (2.5 to 3.5 km) and the nearest porpoise detected was 4 kms from the new ADD. Some porpoise will still be present in the Sound of Mull, they need to feed and if necessary will do so despite the noise, however they will be at risk of permanent hearing damage. It seems crazy to designate an area for a particular species and then allow farms to deliberately disturb and injure that species within the area.

Farms are breaking the law by using these devices, why are they not banned or the farms prosecuted? SNH do not seem to recognise that disturbing any porpoise is breaking the law and are not advising the planning authorities that this is the case. SNH are also giving a very biased view of the science surrounding the effect of ADDs on porpoise. Recently SNH advised Argyll & Bute planners that an array of 4 ADDS would not block Shuna Sound which is only 500mtrs wide despite a scientific study having shown 85% of porpoise to be excluded from nearly 1000 square kilometres by a single ADD. SNH also took no account of recent studies (including one commissioned by SNH themselves) which shows that disturbance and hearing damage occur at much lower outputs than even the the quietest ADDs. The SNH website however is clear that in Scottish Waters it is an offence to intentionally or recklessly; kill, injure, capture, disturb or harass a cetacean and they produced the excellent Scottish Marine Wildlife Watching Code which provides similar guidance. It is unfortunate that with regard to fish farms SNH seem to be working to a different set of rules.

Seal shooting

The reason farms use ADDs is to attempt to scare seals away from farms to prevent predation on the fish by these mammals. Even fish farmers doubt that they are effective. Farms also shoot seals. To do this they need a licence from Scottish Government, however the regime is self reporting and there is really no means of checking that the numbers shot are correctly reported if at all. Under the licensing conditions farms are only supposed to shoot seals as “a last resort”, however any farm in Scotland that shoots seals has not done it as a last resort.

This is because there are means of separating seals from salmon which are being used effectively around the world, but not apart from a very few cases, in Scotland. These means are a) close containment b) Strong properly tensioned nets (e.g Eco nets as used in Shetland) or c) double nets. It is only a cost issue which is stopping the industry introducing these means and cost cannot be used as an excuse where a European Protected Species is concerned (if farms had double nets they would not have to use ADDs, thus not disturbing porpoise, an EPS).

There used to be a haul out area for seals at the north end of Shuna, there are no seals there now, this has happened while all the farms around Shuna have expanded. The industry should not be issued licences to shoot seals and must be made to introduce existing technology to make shooting unnecessary. The industry seem to have convinced the regulators that using double nets would be bad for wildlife by perhaps trapping animals the nets, there is no scientific evidence that anti predator nets, properly tensioned with suitable mesh size and type, pose more risk of entanglement than with single nets currently in use.

Any reduction in water flow is an economic issue and, as already mentioned cost is not a consideration in compliance with the legislation protecting an EPS. Double nets are used around the world, they should be insisted upon here. Another benefit of double nets would be the prevention of escapes, according to a recent ICES report, sealice and escapes from farmed salmon are the two most important causes of the decline in wild salmonids.

The Aquaculture Stewardship Council awards certification to farms which comply with responsible farming, these certified farms cannot use ADDs or shoot seals. There are 115 salmon farms certified in Norway but only one marine farm in Scotland. Why does the government allow a much lower standard of farming here than in Norway? Given that most Scottish Fish Farms have Norwegian parent companies it is appalling that these companies are allowed to work to far lower standards in Scottish waters than they could in their own country.

Industry Expansion and effects on tourism and the environment

When we first moved to the area salmon farming was in its infancy. There were small farms dotted around the coast with a biomass of around 200 tonnes. There were few farms and they were not close to each other. The allowable zone of effect was originally 25mtrs from the cage edge (AZE). As farms grew bigger the area allowed to be polluted grew bigger as well. Why was more pollution permitted rather than making the industry control the pollution before expansion was

allowed? It is a very bad example of there being an acceptance of pollution to the environment to allow expansion of an industry.

However, the industry was given even further leeway by regulators, even when it was proved that the farms could not keep their pollution within the AZE there were no prosecutions and the farms continued with impunity. I doubt if this would have been allowed on land, industry would have been called to account because the public would have been able to see the pollution and would have called for action. The seabed is, for the vast majority of the public out of sight and out of mind. Divers, however have filmed the seabed around fish farms finding dead and highly polluted areas stretching a long way from the farm. My husband has filmed around fish farms in the Sound of Shuna, Loch Melfort, in the Sound of Luing and In Loch Huan, on each farm he filmed bebbiata mat well beyond the AZE; to comply with standards this should not be found even under the cages.

This is the direct effect on the seabed around the farm, in addition huge amounts of chemicals and farm pollution will be carried away from farms, this will not be accounted for by NewDepomod, as it is outside the range of the model. However, it will all deposit somewhere; in the case of the original Ardmaddy site heavy deposition occurred outside the AZE to the NW of the site. Despite 800 objections and evidence that the predictions of the modelling carried out for the Appropriate Assessment were not scientifically robust a doubling of biomass was consented for that farm in a new position very close to the old site which had consistently failed to meet pollution standards.

We are lucky to have the Firth of Lorne Special Area of Conservation to operate our wildlife tourism business in, 10 years ago after a complaint to Europe scallop dredging was banned and we have been fortunate to see the recovery of the SAC since then. There is only one small fish farm within the SAC at Lunga. It was put in place without following the correct procedures. We carried out an underwater pre-impact video survey around the farm and identified a colony of a rare species (The seafan anemone, a UK Biodiversity Action Species growing on the Northern Seafan), this was one of the few known colonies of this species in Scotland. No Appropriate Assessment was carried out until more than a year after the farm was operational and by the time SEPA & SNH surveyed the site this rare species had been obliterated by pollution from the farm. We had carried out monthly surveys and though the farm never exceeded 600 tonnes we recorded a dramatic decline in biodiversity.

Huge farms (now up to 3500 tonnes, despite the maximum allowable currently being 2500 tonnes) are being given planning permission in close proximity to other large farms. Within the Loch Melfort, Sound of Shuna area (within a MPA) there are 5 farms with planning permission for a combined biomass in excess of 10,000 tonnes. There are a further 4 farms in the near vicinity. A 2500 tonne farm holds a biomass equivalent to 33,000 human adults (Oban population is around 10,000). The amount of pollution coming from this combined biomass must be having a devastating effect on the marine environment.

There are clear and undisputed problems with sea lice affecting not just the

farmed salmon but also wild salmon. I assume that you will be aware of the information on European sea lice legislation produced by Salmon and Trout Conservation Scotland which compares the actions to be taken on sea lice in different countries (Norway, Scotland, Faroes and Ireland). It is clear that Scotland has the most lax standards and a total lack of sanctions being applied when there are failures of even those standards.

It seems that the industry cannot get the lice problem under control and is using more and more chemicals to try to deal with it without success. These chemicals are entering the water and causing damage to other species.

At present the fish farming industry is out of control on pollution, use of chemicals and damaging wildlife particularly seals and porpoise. It has been allowed to grow without really having legislation and relevant laws enforced upon it despite these laws being in place. It has always had government backing and been seen as one of the darlings of Scottish exports. This has bred contempt within the industry and complicity and complacency by the regulators who seem to be willing to put aside their duties in order to help the industry expand at whatever cost. However, although the fish farming industry is important it cannot be allowed to destroy much of Scotland's greatest assets; its marine environment and its wildlife, nor can it be at the expense of other industries such as tourism. Wildlife tourism is hugely important but without the wildlife it is nothing, it is wrong for one industry to impact on another as fish farming is currently doing. Everyone has a right to enjoy the seas, it does not belong to one particular group or industry. It is clear from history that the salmon farming industry will not clean up its operations voluntarily and I call upon Scottish Ministers to uphold the laws and force them to do so with prosecutions if necessary. There is a lot of money in this industry much of it going abroad, it can afford to reform and should be made to do so, the laws are there they just need to be enforced.

The US dept of Commerce's National Oceanic and Atmospheric Administration has issued guidance to the EU stating that it will stop imports (by 1.1.20) from aquaculture if the industry is allowed to intentionally kill or seriously injure marine mammals. There is an opportunity now ahead of this for Scottish ministers to uphold their duties under domestic and European law by stopping the use of ADDs and making fish farms introduce means by which the killing of seals is avoided i.e close containment or anti-predator nets.