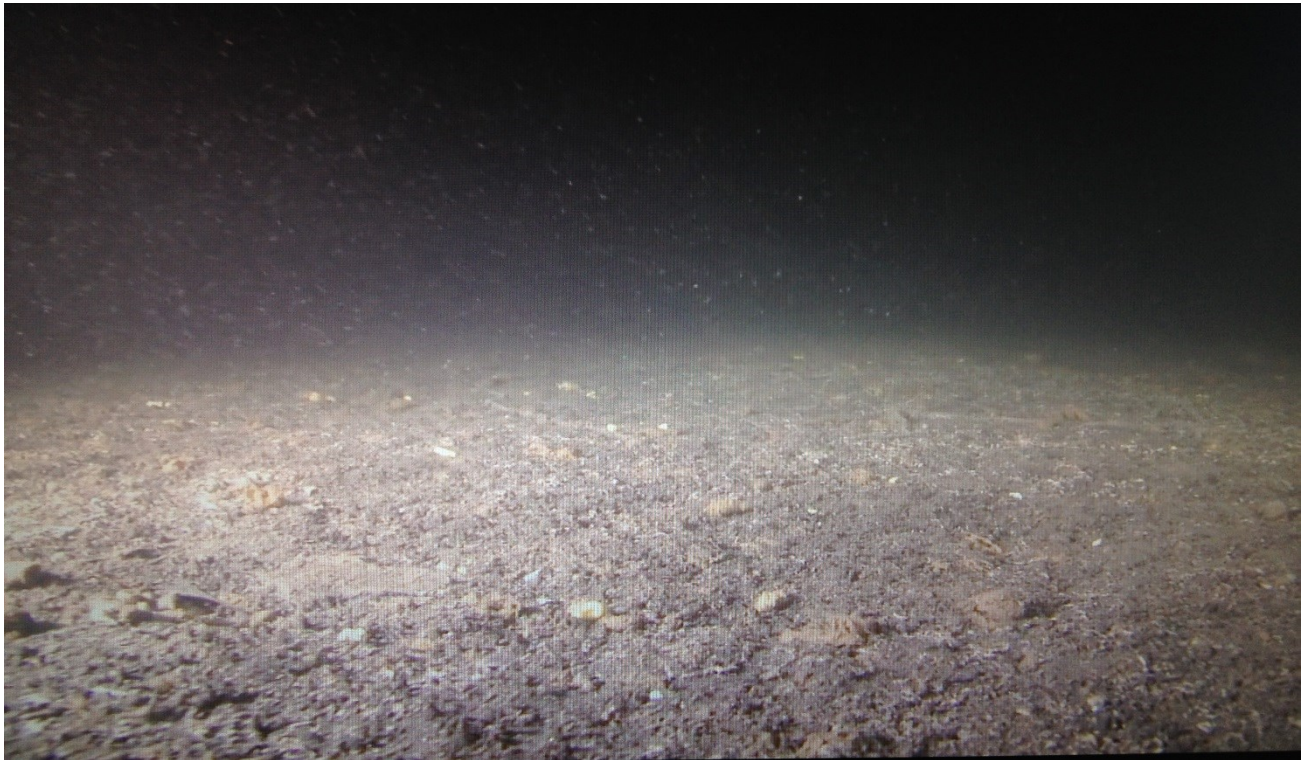


**Environment, Climate Change and Land Reform Committee**

**Environmental impacts of salmon farming**

**Written submission from Friends of Jura**

**Image 1 – a seabed underneath a fish farm**



A video frame of the dead seabed in the Allowable Zone of Effect below an Argyll salmon farm. See <https://vimeo.com/198482651>

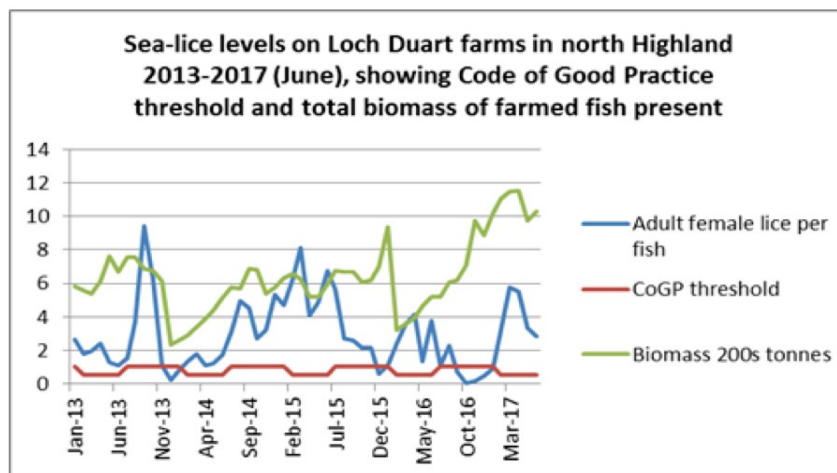
This is what the seabed looks like underneath a fish farm.

The largest farms are permitted to discharge 1000 tonnes of fish faeces a year, and many doses of toxic chemicals used to treat parasites.

One of these chemicals, emamectin benzoate, may still be active in the seabed more than four years later.

There are about 250 marine cage fish farms in Scotland.

Image 2 – Sea lice levels

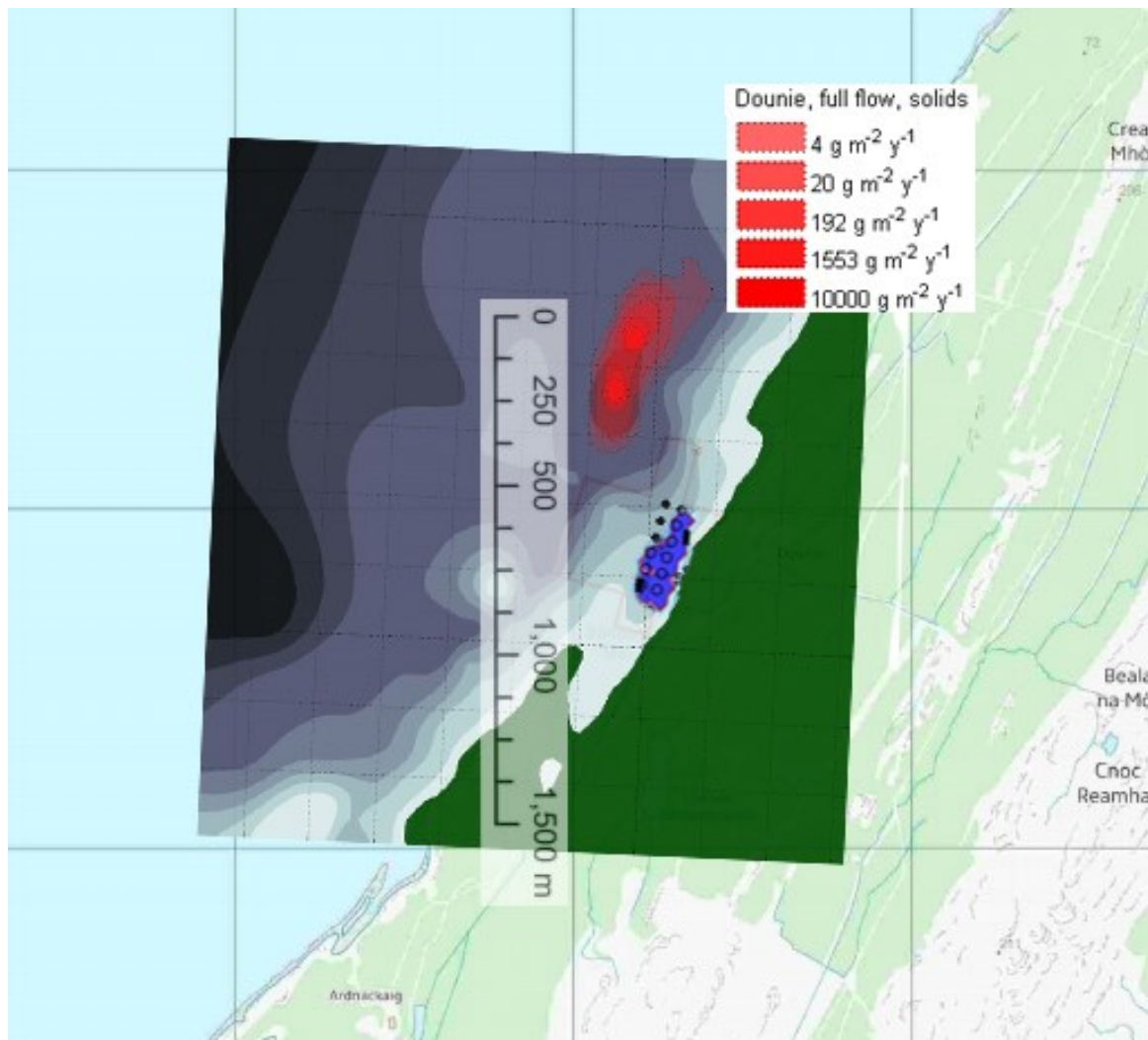


Source: Aggregated regional sea lice data as provided by SSOO three-monthly Fish Health Management Reports

Parasitic sea lice harm salmon and sea trout. When their numbers rise on farmed fish, more of them can transfer to their wild relatives, sometimes killing them, especially when the fish are young.

The aggregated sea lice data for this region of Sutherland show that adult female sea lice numbers rise and fall with the biomass of farmed salmon and that between Jan 2013 and June 2017, they rarely complied with the levels set by the salmon farming industry's Code of Good Practice.

**Image 3 – Computer model for predicted fish farm waste**



Before issuing a proposed new fish farm with a CAR licence (for releasing pollution), SEPA use a computer model to predict where its waste and the associated pesticide emamectin will go.

The present model, 'AutoDepomod', would be used to determine the CAR licence for the proposed farm at Dounie, on the Sound of Jura. Its prediction was that 99% of the waste would be swept out of the model's 'grid' while the rest (in purple) would fall under the cages AutoDepomod always assumes the seabed is flat.

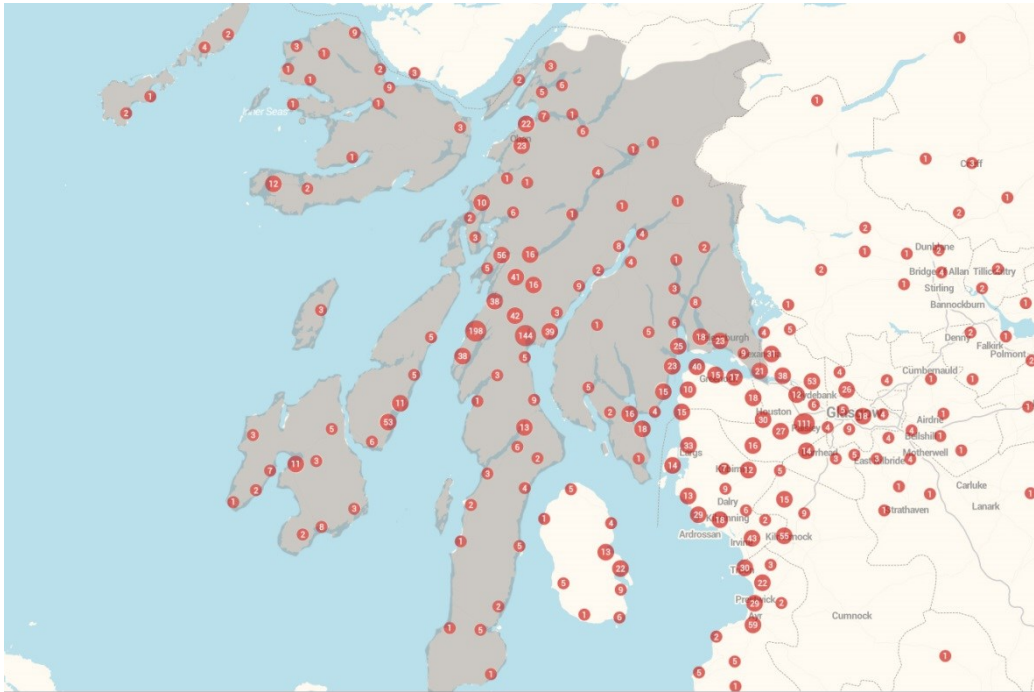
In fact the seabed slopes steeply, as revealed by its replacement, 'NewDepomod', which plots show the solid material (red) would flow downslope, under gravity.

In the core red areas, 500m away, NewDepomod predicts levels far beyond SEPA's acceptable limit, even though more than 80% of waste would be swept out of its larger grid and its fate ignored.

Both these predictions were made with only 15 days of tidal data. NewDepomod does need at least 90 days, so the quantities predicted here are an illustration. The distribution is a safe bet.

Wherever the seabed is complex, all CAR licences previously approved using AutoDepomod should be re-examined.

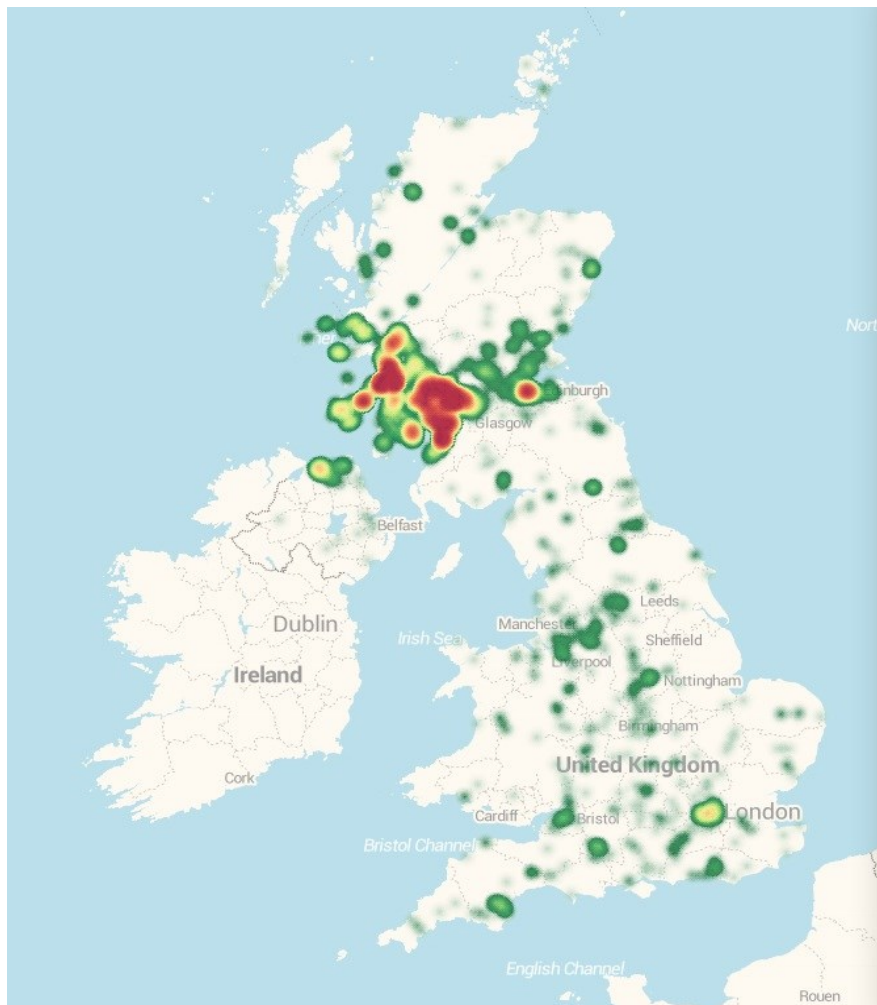
#### Image 4 – location of petition signatories



Dounie petition signers, with Argyll and Bute constituency shaded. This map shows the clusters of postcodes of some of the people who signed the petitions in Argyll and Bute.

These communities know their area and at least 1300 people wanted it to stay the way it is, supporting many long-term sustainable jobs that depend on the sea.

**Image 5 – location of petition signatories**



In 2017 a 2500 tonne open-cage fish farm was proposed at Dounie in the Sound of Jura. Inside an MPA, close to an important sea trout and salmon river and on their migration route.

This map shows the distribution of postcodes of approximately 4000 people who signed one of the two petitions opposing this inappropriate development. Most of them live in the west of Scotland. They are neither NIMBYs nor people from so far away that they might never have visited the area.

It shows that Scottish people really care about the health of their sea.

John Aitchison  
Friends of Jura