

# RURAL ECONOMY AND CONNECTIVITY COMMITTEE

## SALMON FARMING IN SCOTLAND

### SUBMISSION FROM UNIVERSITY OF PLYMOUTH MARINE INSTITUTE

#### 1. The Marine Institute

The University of Plymouth's Marine Institute provides access to one of the broadest pools of marine and maritime expertise in Europe. This breadth is underpinned by our core strength in coastal science, for which we are ranked top in the UK.

#### 2. Salmon Farming Impacts on Protected Maerl Habitats

2.1 Maerl is an extremely slow growing form of calcareous algae that creates complex structures on the seabed, supporting highly biodiverse animal communities. Maerl beds are widespread along the west coast of Scotland, the Hebrides and the Northern Isles, which represent about 30% of all maerl habitat in north-west Europe<sup>1</sup>.

2.2 Maerl species are a UKBAP Priority Species, and species of principal importance for the purpose of conservation of biodiversity under the Natural Environment and Rural Communities Act 2006 and are listed in Annex I of the Habitats Directive<sup>2</sup>.

2.3 Prof Jason Hall-Spencer and colleagues published the first study of salmon farm impacts on maerl beds in 2006<sup>3</sup>, at a time when increasing numbers of farms were being relocated to sites with strong tidal flows to combat problems with organic waste build up underneath cages.

2.4 Prior to these studies, strong tidal flows on maerl beds were assumed to flush away organic waste. Surveys around salmon farms located above maerl beds found significant reductions in live maerl cover and faunal biodiversity<sup>3,4</sup>. These negative impacts are the result of organic enrichment<sup>3</sup> and toxic chemicals in fish feed used to combat sea lice<sup>4</sup>.

#### 3. Recommendations

3.1 Locating fish farms above maerl habitats is not consistent with UK conservation targets and alternative sites should be sought when licensing new farms.

3.2 Where farms are already situated above maerl beds, cage positions should be fixed (not rotated) as coralline algae are highly susceptible to fish farm impacts and take 1000s of years to form maerl bed habitats.

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<sup>1</sup> Marine Scotland: Maerl Beds

<sup>2</sup> Joint Nature Conservation Committee

<sup>3</sup> Hall-Spencer *et al.* (2006) Impact of fish farms on maerl beds in strongly tidal areas. *Marine Ecology Progress Series*, 326:1-9.

<sup>4</sup> Hall-Spencer and Bamber (2007) Effects of salmon farming on benthic Crustacea. *Ciencias Marinas*, 33:353–366.

University of Plymouth Marine Institute  
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