

Evidence-based and industry-driven ecosystem management approach of a dynamic scallop fishing ground

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Scallop dredging is one of the largest causes of physical disturbance to the seabed in mixed sediments. In Cardigan Bay (UK), scallop dredging has been banned from a large part of the Special Area of Conservation (SAC) since 2009. The SAC was designated for seabed features of conservation interest and to protect a resident population of bottlenose dolphins. Little evidence was provided to the industry as to their impact in this particular area which happened to be the most productive scallop ground in Wales and which they believed could sustain some level of activity due to a relatively high natural disturbance. In 2012, Bangor University obtained an EFF grant to design a large scale experiment which aimed at quantifying the impact of the scallop fishery on the seabed of the SAC. The work was conducted in collaboration with the Welsh Government, the scallop industry and Natural Resources Wales. It involved several months of discussions and legal work, repeated surveys of the seabed and a month-long fishing by stakeholders in April 2014. Overall, natural and temporal variation in the benthic ecosystem seemed to overwhelm most effects of scallop dredging. The results implied that the SAC could sustain some controlled level of scallop dredging in terms of biological habitat damage and recovery potential to its current status. Here we present the challenges and lessons learned along the way, the results of the experiment, their implications for management and some difficulties around implementing a change in management strategy in a protected area.

Keywords: BACI experiment, fishing impact, marine protected areas, natural disturbance, scallop dredging, seabed recovery, stakeholder engagement

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