Scottish Environment LINK

Response to the proposal to designate a deep-sea marine reserve in Scottish waters

by the Scottish Environment LINK Marine Group

December 2019

Introduction

Scottish Environment LINK is the forum for Scotland's voluntary environment community, with over 35 member bodies representing a broad spectrum of environmental interests with the common goal of contributing to a more environmentally sustainable society.

Its member bodies represent a wide community of environmental interest, sharing the common goal of contributing to a more sustainable society. LINK provides a forum for these organizations, enabling informed debate, assisting co-operation within the voluntary sector, and acting as a strong voice for the environment.

Acting at local, national and international levels, LINK aims to ensure that the environmental community participates in the development of policy and legislation affecting Scotland.

LINK works mainly through groups of members working together on topics of mutual interest, exploring the issues and developing advocacy to promote sustainable development, respecting environmental limits.

The LINK Marine Group vision is of healthy, well-managed seas, where wildlife and coastal communities flourish and ecosystems are protected, connected and thriving.

LINK members welcome the opportunity to comment on this consultation.

Proposal to designate a deep-sea marine reserve: consultation

Scottish Environment LINK response

Do you support the designation of the West of Scotland Deep Sea Marine Reserve?

Yes

Do you agree that the scientific evidence presented justifies the case for designation?

Yes, the scientific information provided by JNCC supports designation of the proposed West of Scotland deep sea marine reserve (DSMR) for burrowed mud (including sea pens), coral gardens, cold-water coral reefs (including Lophelia pertusa reefs), deep sea sponge aggregations, offshore deep sea muds, offshore subtidal sands and gravels, seamount communities, seamounts, blue ling (Molva dypterygia), leafscale gulper shark (Centrophorus squamosus), gulper shark (Centrophorus granulosus), orange roughy (Hoplostethus atlanticus),

portuguese dogfish (Centroscymnus coelolepis), roundnose grenadier (Coryphaenoides rupestris) and geodiversity features.

The site would be a vital addition to the MPA network as our knowledge has increased regarding the fragility of this deep-water environment and of its importance for sequestering carbon, and we note and welcome the commitment in the 2019-20 Programme for Government to designate the site. We welcome the Rosemary Bank Seamount MPA being amalgamated into the proposed West of Scotland DSMR, and that the level of protection for all the features in the Rosemary Bank Seamount MPA would be strengthened from 'conserve' to 'recover'. Similarly, LINK members also welcome the inclusion of the summit of Anton Dohrn Seamount in the West of Scotland DSMR, having recommended such an approach during the offshore MPA/SAC management workshops in 2015, adding value to the existing Anton Dohrn Seamount Special Area of Conservation (SAC) designated for reefs.

Seamounts are important for a wide range of benthic and pelagic species, including as feeding areas for deep-diving cetaceans and feeding and breeding areas for vulnerable elasmobranchs. We therefore welcome such an ecosystem approach for these communities.

Additional features and whole-site approach

We would like to take the opportunity to highlight the latest guidelines for applying the IUCN protected area management categories to Marine Protected Areas (MPAs) that recognises all categories of MPA should preclude "industrial fishing" (https://portals.iucn.org/library/sites/library/files/documents/PAG-019-2nd%20ed.-En.pdf) and that "IUCN is opposed to the use of vertical zoning." We would therefore strongly support the addition of pelagic deep-water fish species and cetacean species to the list of designated features, recognising the interaction between the benthic environment and the pelagic habitat, the vulnerability of those species, and their important role in carbon sequestration. One study estimates that "Over 50% of the biomass of the demersal fish community at depths between 500 and 2000 m is supported by biological rather than detrital nutrient flux processes, resulting in a net carbon sink to long-term storage in excess of 1×10^6 T CO2 yr^{-1}. Alterations in the mesopelagic and bentho-pelagic communities responsible for nutrient transfer may have widespread ecosystem effects, including changes in long-term carbon storage, depletion of nutrients available to the benthic community and reduction of total benthic biomass"[1].

As noted by JNCC, "the waters off the west coast of Scotland are likely important feeding grounds and migration routes for Fin whale (Balaenoptera physalus). Long-finned pilot whale (Globicephela melas) and sperm whale (Physeter macrocephalus) have frequently been recorded around both seamounts in the pMPA". The area is also part of the range of the large rorqual whales, including the Blue Whale (Balaenoptera musculus), listed as Threatened or Declining by OSPAR. Protection for deep-sea pelagic habitat should positively impact deep-diving species like beaked whales and Risso's dolphins (Grampus griseus). Cuvier's beaked whales (Ziphius cavirostris) can dive to great depths, of about 2 miles, and they spend much more time at depth than they do at the surface[2]. Their vulnerability to noise pollution was also most recently highlighted in late 2018, with a minimum of 38 Cuvier's beaked whales stranded dead on the coast of west Scotland, and at least 19 on the Irish coast[3].

[1] Trueman et al (2014) https://royalsocietypublishing.org/doi/10.1098/rspb.2014.0669
[2] Schorr GS, Falcone EA, Moretti DJ, Andrews RD (2014) First Long-Term Behavioral Records from Cuvier's Beaked Whales (Ziphius cavirostris) Reveal Record-Breaking Dives. PLoS ONE 9(3): e92633. https://doi.org/10.1371/journal.pone.0092633
[3] https://uk.whales.org/2018/08/21/why-are-beaked-whales-stranding-on-irish-and-scottish-coasts-again/

Registered office: 13 Marshall Place, Perth PH2 8AH, T. 01738 630804, information@scotlink.org
Advocacy office: Dolphin House, Hunter Square, Edinburgh, EH1 1QW, T. 0131 225 4345, advocacy@scotlink.org

Risso's dolphins can forage in waters around 500m and deeper, where they appear associated with slopes, and could benefit from the protection of sea-mounts, including the addition of the summit of Anton Dohrn seamount, and of shifting the boundary of the proposed DSMR to 600m.[4] Recent studies have also highlighted the vital role of whales in carbon sequestration.[5] Whilst wider seas measures targeted at whale conservation are absolutely vital, most importantly bans on commercial and spurious scientific whaling, added area-based protection from the cumulative impacts of fishing, noise, and deep-water extractive activities in known locations globally, including the proposed DSMR, could further benefit their conservation status.

JNCC recognise that the proposed West of Scotland DSMR is within the foraging range of some of the largest breeding colonies for seabirds in the UK, including European storm-petrel (Hydrobates pelagicus) and Leach's storm petrel (Oceanodroma leucorhoa), which are truly oceanic species. As JNCC note, 94% of the UK population of Leach's storm petrel breeds on four islands in the St. Kilda archipelago (a property of LINK member the National Trust for Scotland) with the remainder in the Western Isles and two islands in Shetland. The proposed DSMR also includes the wintering range of the Black-legged Kittiwake (Rissa tridactyla), another OSPAR-listed species. A holistic approach to designating and managing the proposed DSMR in line with the revised IUCN guidance should consider the addition of these ocean-going species to the designated features of the site. Their addition could lead to valuable conservation measures that protect the foraging activities of these seabirds within the proposed DSMR from pressures such as some forms of fishing.

International good practice is moving toward a whole-site approach for managing MPAs, and this should include protection for the pelagic environment itself and consideration of interactions between benthic habitats and the species in the water column. We note for example that the National Advisory Panel on Marine Protected Area Standards in Canada has recommended (PS1) "That the government adopt International Union for the Conservation of Nature standards and guidelines for all marine protected areas"[6]. Further, as noted earlier "IUCN has a strong presumption against vertical zoning of MPAs".

Proposed 600m depth contour boundary

The deep-sea access regime under the Common Fisheries Policy resulted in a prohibition below 800m, which was a result of the political process of getting regulations through the European Council and Parliament in June 2016. Indeed, "The agreement on revised rules strikes an ambitious balance between the commercial exploitation of certain deep water fish populations and their sustainability." LINK members consider it essential that conservation measures are informed by science, and believe that it is not always appropriate for biodiversity and ecosystem services to be traded off against short-term commercial economic considerations. It should also be recognised that an earlier vote on a 600m prohibition was very close and almost resulted in that depth being agreed, had it not been for what were determined to be incorrect votes laid due to a last-minute complication[7].

It is LINK's view that the scientific case still stands for the prohibition of demersal trawl gear to extend from below 600m rather than 800m. We would strongly urge that the opportunity is taken to place the boundary of

[4] Benoit-Bird KJ, Southall BL, Moline MA (2019) Dynamic foraging by Risso's dolphins revealed in four dimensions. Mar Ecol Prog Ser 632:221-234. https://doi.org/10.3354/meps13157

[5] https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0012444

[6] http://www.dfo-mpo.gc.ca/oceans/publications/advisorypanel-comiteconseil/2018/finalreport-rapportfinal/page08-eng.html#protection)

[7] http://www.savethehighseas.org/publicdocs/201217-DSCC-statement.pdf,%20, https:/www.euractiv.com/section/sustainable-dev/news/meps-accidentally-vote-wrong-way-on-deep-sea-fishing/

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the proposed deep-sea marine reserve to 600m in line with best available science. As Clarke et al (2015) concluded: "biodiversity of the demersal fish community, the ratio of discarded to commercial biomass, and the ratio of Elasmobranchii (sharks and rays) to commercial biomass significantly increases between 600 and 800m depth while commercial value decreases. These results suggest that limiting bottom trawling to a maximum depth of 600m could be an effective management strategy".[8]

Irrespective of the future constitutional arrangements between Scotland, the UK and the EU, setting the depth boundary for the deep-sea marine reserve at 600m would further demonstrate global leadership from the Scottish Government, underline their commitment to the type of "transformative change" necessary to tackle the interlinked climate, ocean and nature emergencies and signal a progressive direction of travel for sustainable management of the deep sea.

Licensing pelagic gear use

We note that the Upper Scenario recognises that "the exclusion of pelagic gears, principally UK midwater trawls and foreign fishing effort, may have some additional benefits on pelagic species within the deep sea marine reserve". Given the conclusions of Clarke et al (2015) and Trueman et al (2014), serious consideration should be given to excluding pelagic gears in the proposed West of Scotland DSMR at depths greater than 600m. A licensing regime could be explored whereby only pelagic gears targeting what are considered to be continental shelf species, that are not as vulnerable as true deep sea species due to different reproductive strategies, lower age at maturation and faster growth rates, and where there is confidence of the presence of aggregations of such species with minimal bycatch of deep sea stocks could have license to operate within the boundary of the proposed site.

Do you have any comments on the Conservation Objectives and Management Advice?

Scotland's Marine Atlas states that deep-water habitats are declining in status and a matter of "many concerns". Therefore, in light of the declared climate emergency and the increasing recognition of the role of deep-sea fish and seabed habitats in sequestering carbon, we fully support the conservation objectives for 13 of the designated features to be set to "recover" and for the ongoing prohibition of demersal gear from the entire area. We also welcome the addition of the slopes shallower than 800m on the Anton Dohrn seamount. It should be acknowledged that passive recovery, through reducing pressure, is a welcome and important component contributing to meeting conservation objectives for the site and to the large-scale ocean recovery urgently required.[9] We would, therefore, support a version of the Upper Management scenario being applied to the site in future (whilst recognising these are just scenarios provided in the context of this consultation for the purposes of informing the Sustainability Appraisal). However, we note that "in the UK, Lophelia pertusa reefs had not showed signs of natural recovery following eight years of a fishery closure".[10] Recovery will inevitably be slow but recent records of Lophelia growing on the legs of oil-rigs demonstrate that natural recolonisation is possible in suitably undisturbed conditions.

Notwithstanding that demersal trawl gear is already prohibited from below 800m, the JNNC management advice in our view underestimates the pressure of demersal fishing activity on cold-water coral reefs, coral gardens,

[8] https://www.cell.com/current-biology/fulltext/S0960-9822(15)00938-0?_returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0960982215009380%3Fshowall%3Dtrue
[9] https://www.unenvironment.org/resources/report/ipcc-special-report-ocean-and-cryosphere-changing-climate
[10] Huvenne et al (2016) https://www.sciencedirect.com/science/article/pii/S0006320716302117?via%3Dihub)

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deep-sea sponge aggregations and seamount communities as ranging from "moderately to highly vulnerable". We would expect the weight of current scientific understanding to lead to the conclusion that all the aforementioned habitats, coral and sponge communities in particular, were "highly vulnerable". However, we welcome that burrowed mud, offshore deep-sea muds and offshore subtidal sands and gravels have also been recognised as "moderately to highly vulnerable" to combined pressures including demersal fishing, telecommunication cable laying/maintenance and oil and gas exploration/maintenance.

Do you have any comments on the Business and Regulatory Impact Assessment?

We are concerned that the BRIA presents a one-sided assessment of the costs of establishment, with very little attempt to quantify its benefits. The BRIA cites a study by McVittie and Moran (2008) that derived a primary estimate of benefits from the implementation of the nature conservation measures in the draft Marine and Coastal Access Bill (specifically relating to Marine Conservation Zones). The BRIA does not consider a subsequent study that was commissioned to evaluate the benefits of (at that time) theoretical Scottish MPA network scenarios. A report commissioned specifically to look at valuing the benefits of a Scottish MPA network attempted to value the use (direct and indirect) and non-use value of theoretical MPA networks, including of carbon sequestration, and concluded that the expected benefits "would range between £4.3 billion and £10 billion" for scenarios up to 102,400 km^2 of Scotland's seas and up to 60% of OSPAR species and habitats included[11]. The West of Scotland proposed DSMR covers 107,773 km2, greater than the largest areal scenario in the report, suggesting that the possible ecosystem service benefits of the proposed site could run into billions of pounds. Of course, this is a very crude comparison, but we believe it is still valid to raise as an indication of the potentially vast wider societal benefit of the site that has been undervalued.

Conservation measures should be informed by best available science, and it is not always appropriate or possible for biodiversity and ecosystem services to be traded off against social and economic considerations, particularly in the absence of effective means of estimating indirect and non-use values to marine biodiversity and the ecosystem services they support. Scotland's Marine Atlas recognised that the valuation of marine ecosystems goods and services is in its infancy[12].

Do you have any comments on the Sustainability Appraisal, including the Environmental Report and the Socio-Economic Impact Assessment?

The Sustainability Appraisal has exhaustively detailed costs to commercial fisheries sector, with additional claims about the costs to other sectors. In contrast, faced with a level of uncertainty about the benefits in Ecosystem Services, including non-use values, it has not proposed any valuations, despite the fact that several techniques and statistics are already available[13]. Indeed, a review of their use for delivering marine biodiversity benefits, concludes that MPAs result in "overwhelming positive effects" on the biodiversity sector alone[14]. However, there is no attempt to quantify benefits to carbon storage and the assessment of medicinal and biotechnology use of deep-sea marine biodiversity is very limited.

[11] http://www.scotlink.org/files/publication/LINKReports/Valuing_the_benefits_MPA_Network_Scotland_Report_(final).pdf
[12] https://www2.gov.scot/Resource/Doc/345830/0115121.pdf
[13] Brander et al., 2015. The benefits to people of expanding Marine Protected Areas. IVM Institute for Environmental Studies
[14] Gubbay, S., 2006. Marine Protected Areas. A review of their use for delivering marine biodiversity benefits. English Nature Research Reports, No 688.

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This response was compiled on behalf of LINK Marine Group and is supported by: Marine Conservation Society; National Trust for Scotland; RSPB Scotland; Scottish Wildlife Trust; Whale and Dolphin Conservation

For more information contact:

Calum Duncan
LINK Marine Group Convenor
Head of Conservation Scotland, Marine Conservation Society
E: Calum.Duncan@mcsuk.org, T: 0131 633 4001

Or

Esther Brooker
LINK Marine Policy and Engagement Officer
E: esther@scotlink.org, T: 0131 659 9047

www.scotlink.org
www.savescottishseas.org
www.fightforscotlandsnature.scot

[15] http://www.scotlink.org/files/publication/LINKReports/Valuing_the_benefits_MPA_Network_Scotland_Report_(final).pdf
[16] https://www2.gov.scot/Resource/Doc/345830/0115121.pdf