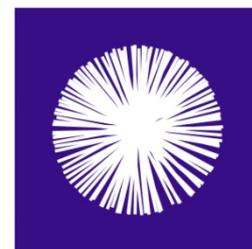


Response to Planning Scotland's Seas: 2013 - Possible Nature Conservation Marine Protected Areas Consultation

by the Scottish Environment LINK Marine Taskforce

Date: 13 November 2013



Scottish
Environment

LINK

Summary

- LINK supports the designation of at least 29 of the possible Nature Conservation MPAs, in accordance with the JNCC/SNH scientific advice. If fewer MPAs are designated, individual Priority Marine Features will be inadequately protected and the coherence of the network will be compromised.
- It is absolutely essential for the future coherence of the network that the Firth of Forth Banks Complex possible Nature Conservation MPA is designated and sandeels included as a protected feature.
- A Scottish Environment LINK strongly supports the development of a network of nature conservation Marine Protected Areas in Scotland's Seas. A well-designed network of MPAs, with appropriate management, has the potential to make a huge contribution to recovering the health of Scotland's Seas. We also strongly support the Scottish Government's commitment to a science-based approach to selection, designation and management of the MPA network.
- further four MPA search locations—Southern Trench, Skye to Mull, Eye Peninsula to Butt of Lewis and Shiant East Bank—are still to be assessed and we strongly support progress towards MPAs derived from these. In addition, replicate search locations for a further three MPA Search Features—basking shark, white-beaked dolphin and common skate—are still to be identified.
- The Marine Protected Area and Priority Marine Feature assignment processes have not adequately addressed the protection needs of migratory and mobile species such as seabirds, basking sharks and cetaceans.
- Scotland's Marine Atlas reported on the status of habitats and species throughout Scotland's seas. This highlighted many areas of uncertainty, concern and deterioration. In the light of this information it is extremely disappointing that in only three of 33 possible marine protected areas are individual features' conservation objectives set to 'recover', with all the rest set to 'conserve'.
- The conservation option 'conserve (feature condition uncertain)' has been used for all biodiversity features in the offshore possible MPAs even though all these features are considered likely to have already sustained damage from human activities. Although we have supported this designation, it is on the condition management options are set based on an evidence-based assessment of vulnerability and risk of further damage from human activity, and application of the precautionary principle.
- Management options must be chosen that will provide the most effective protection and enhancement outcomes for the marine conservation objectives of habitats and species of each possible MPA, and the network more broadly. Zonal management that puts in place measures to protect only the remaining coverage of species and habitats is not enough, given the context of

ecological decline documented by Scotland's Marine Atlas.

- We support the addition of six other biological features (circalittoral sand and coarse sediment communities, circalittoral muddy sand communities, serpulid aggregations, white cluster anemone, ocean quahog and herring spawning grounds) as protected features. However, a “wider range of features” must consider many more species and habitats in poor, or uncertain, status in Scotland’s seas if the network is to achieve its full potential and help protect and recover the health of Scotland’s seas overall.
- We are not confident that the developing network delivers ecological coherence for both representative (EUNIS Level 3) and rare/threatened/declining habitats based purely on presence/absence assessments with no guidance on connectivity. A more detailed baseline assessment will be needed that considers proportion of habitat protected against OSPAR Guidelines incorporating the latest science on site connectivity.
- LINK is concerned that the socioeconomic impact data presented concentrates almost entirely on the possible impact on revenue from sectors such as fisheries and oil and gas. LINK recommends a more balanced socioeconomic assessment, using an ecosystem goods and services approach, to also present the socioeconomic benefits of marine protected areas together with a consideration of the socioeconomic costs of not designating MPAs.
- LINK believes the inconsistency in information provided in the management options, the socioeconomic assessment and the strategic environmental assessment, most notably the contradictory assumptions made regarding the displacement of activities, makes the results of these documents inappropriate for use in ministerial decision making.
- LINK does not accept that other area-based measures can legally contribute to the developing network of marine protected areas unless they are designated as nature conservation MPAs under s.67 of the Act, then managed, monitored and reported on to Parliament under the relevant provisions of the Act.

Introduction

Scottish Environment LINK is the forum for Scotland's voluntary environment community, with over 30 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 this community in communications with decision-makers in Government and its agencies, Parliaments, the civic sector, the media and with the public.

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

LINK Marine Taskforce comprises a number of LINK members committed to working on marine issues. The LINK Marine taskforce vision is of **healthy, well-managed seas, where wildlife is flourishing, ecosystems are protected, connected and thriving, and coastal communities are sustained.**

LINK members welcome the opportunity to comment on the Planning Scotland's Seas: 2013 - Possible Nature Conservation Marine Protected Areas consultation.

This response was compiled on behalf of LINK Marine Taskforce and is supported by:

Buglife	RSPB Scotland
Hebridean Whale and Dolphin Trust	Scottish Ornithologists' Club
John Muir Trust	Scottish Wildlife Trust
Marine Conservation Society	Whale and Dolphin Conservation
National Trust for Scotland	WWF Scotland

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General Comments

Scottish Environment LINK believes the creation of this MPA network is the single most important conservation measure in the history of Scottish seas and we are keen that the proposals meet the objectives set out in the Marine (Scotland) Act 2010¹ (hereafter 'the Act') and Marine and Coastal Access Act 2009. Although we might not agree on all aspects of the approach taken by Marine Scotland, SNH and JNCC, LINK acknowledge and welcome the considerable body of work and stakeholder engagement that has gone into providing the suite of MPA proposals to be consulted on². We support the 'best 29' MPA proposals going forward for designation.

Protecting the best

The SNH and JNCC advice to the Scottish Government³ states that

JNCC identify science-based alternatives for the representation of those features for which the "as a result of concern from the renewables [and fishing] sector, Marine Scotland requested that Firth of Forth Banks Complex [and Central Fladden] are being considered."

JNCC failed to identify ecologically equivalent alternatives to Firth of Forth Banks [and the tall sea pen component of 'core' Central Fladen] and have therefore presented substitute areas as 'science-based alternatives'. In the light of this advice we are disappointed that these are considered in the consultation as substitutes of equal value. This is not only our view, the SNH and JNCC advice states

"JNCC concluded from assessment of the evidence that [the science-based alternatives] do not make equivalent contributions to the network to that made by the Firth of Forth Banks Complex."

and further

"There is evidence to support our view that the shelf bank and mound features present within the Firth of Forth Banks Complex are of functional significance to the overall health and diversity of Scotland's seas more widely."

Based on this evidence LINK believes that it is essential, for the integrity of the process and for the future coherence of the network, that Firth of Forth Banks Complex is designated a Nature Conservation Marine Protected Area.

Commitment to completing the network

Although we acknowledge the progress made to date in identifying an ecologically coherent MPA network, the currently proposed network is (i) incomplete, (ii) will not achieve ecological coherence, and (iii) will fail to meet obligations under the OSPAR⁴ convention and the EU Birds and Habitats

¹ Marine (Scotland) Act 2010 http://www.oqps.gov.uk/legislation/acts/acts2010/pdf/asp_20100005_en.pdf

² Marine and Coastal Access Act 2009 <http://www.legislation.gov.uk/ukpga/2009/23/contents>

³ Scottish Natural Heritage and the Joint Nature Conservation Committee. Advice to the Scottish Government on the selection of Nature Conservation Marine Protected Areas (MPAs) for the development of the Scottish MPA network. Scottish Natural Heritage Commissioned Report No. 547 (2012). <http://jncc.defra.gov.uk/page-5510>

⁴ OSPAR Commission for the protection of the marine environment of the North-East Atlantic. More information at: <http://www.ospar.org/>

Directives⁵. Even when considered alongside existing European Marine Sites and existing fisheries measures (the ecological coherence of which has not been proven), the proposed network of sites fails to include and protect a representative range of Scottish marine species and habitats. This is not our contention alone; the SNH and JNCC advice and the report to Parliament clearly indicate these gaps remain.

Four areas remain as MPA search locations that have not been progressed to formal site proposals while further research is being carried out. Sites derived from these search locations are needed for adequate protection of minke whale, Risso's dolphin, white-beaked dolphin, basking shark, northern sea fan and sponge communities, circalittoral sands and mixed sediment communities and shelf banks and mounds. We also remain concerned that the proposals may be insufficient to provide the required protection, noting that key areas provided as third party proposals have been ignored, that some features, such as common skate and prospective Risso's dolphin, are only protected in a single site and that the science of site connectivity is in its infancy.

Five features which were previously identified by the Scottish Government as MPA search features have been dropped entirely (spiny lobster, burrowing sea anemone aggregations, native oyster aggregations, heart cockle aggregations and low and variable salinity habitats). That data are lacking for these species does not mean they are no longer in need of protection and sets a poor precedent. We ask that these features remain as MPA search features and are included in future iterations of MPA proposals. The low and variable salinity habitats search feature is no longer represented in the network since it was dropped from the Upper Loch Fyne and Loch Goil pMPA. We seek clarification on how protection for these search feature is to be progressed.

The contribution of existing measures, which includes Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) as well as fisheries management areas, to the developing network will also currently fail to adequately protect the Scottish marine area for the wider range of species and habitats present in Scotland's seas. SPAs have been designated for seabird populations of European importance along Scotland's coastline, but these ignore seabird species and populations that are of national (but not international) importance, and also ignore at-sea feeding 'hotspots' for all seabirds. A report recently commissioned by Defra⁶ indicated that

“to effectively protect [UK seabird species] MPAs need to cover different aspects of their annual life throughout their biogeographic range including nesting sites and feeding areas associated with breeding colonies”.

We support this statement and note that progress needs to be made in identifying at-sea foraging sites for seabirds before the proposed wider network of MPAs is capable of adequately protecting and recovering Scotland's seas. We acknowledge that JNCC is currently carrying out work to identify important seabird concentrations at sea and urge that the recommendations from this work should be taken forwards by classifying these sites as SPAs.

We note that JNCC is currently commissioning a piece of work to identify Special Areas of Conservation for harbour porpoise and offshore bottlenose dolphin in UK waters and we welcome this,

⁵ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora and Council Directive 2009/147/EC of 30 November 2009 on the conservation of wild birds (codified version), enacted in Scotland through The Conservation (Natural Habitats, etc) Regulations 1994 (as amended, 2004) information at: <http://www.scotland.gov.uk/library3/nature/habd-00.asp>

⁶ Contribution of marine protected areas to protecting highly mobile species, MB0114.

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18033>

particularly when considering that Scotland contains some of the highest densities of harbour porpoises in Europe. These areas will also need to be designated, along with consideration of west coast bottlenose dolphins (including in east Mingulay SAC), before the wider network may be considered complete.

LINK considers that sea trout should have been an MPA search feature and has not been adequately dealt with in the MPA selection process. Sea trout is a priority marine feature, important to the ecosystem and with socioeconomic benefits and should be protected in the coastal MPAs on the west coast.

We also note that Fishery Management Areas that are not also designated as nature conservation Marine Protected Areas cannot legally be considered part of the network under s.79(4) of the Act. We would support these sites being designated, managed, monitored and reported on to Parliament according to the provisions of the Act.

The science of site connectivity is in its infancy and therefore, even with the above gaps plugged, we would be unable to declare the network coherent. There would remain a question of whether there were enough sites, whether they were large enough and whether they were close enough together to enable them to be self-sustaining (for features with low larval dispersion) and/or mutually sustaining (for features with high larval dispersion).

JNCC is carrying out work to evaluate the contribution of UK's MPAs to an ecologically coherent network at the OSPAR level. We recommend that the outcome of this work is considered with a view that additional MPAs could be designated in Scottish waters if required as part of the UK's contribution to an ecologically coherent network. We note that the selection guidelines for Nature Conservation MPAs state that

'as our understanding improves, and/or the environment changes, there may be a need to select additional new Nature Conservation MPAs...'

We wholeheartedly support the statement from The Scottish Government's 2020 challenge for Scotland's biodiversity⁷:

An ecologically coherent network of Marine Protected Areas will protect the best of Scotland's marine nature, promote sustainable use and aid recovery of commercially valuable fish and shellfish.

Third Party proposals

LINK has welcomed the opportunity for third parties to contribute proposals for possible MPAs. We would like to acknowledge, in particular, the contributions made by local communities: Small Isles Community Council (SICC) for the Small Isles pMPA; Community of Arran Seabed Trust (COAST) for the South Arran pMPA, Gairloch and Wester Loch Ewe Community for the North-west sea lochs and Summer Isles pMPA and Fair Isle Marine Environment and Tourism Initiative for Fair Isle (although this was not catalogued as an ncMPA proposal). These contributions demonstrate the high value that local communities place on the local marine environment, and their commitment to protecting its health and biodiversity.

⁷ <http://www.scotland.gov.uk/Resource/0042/00425276.pdf>

We also acknowledge the 3rd party contributions from communities of interest, notably Scottish Sea Angling Conservation Network(SSACN) and several of our own member bodies – Marine Conservation Society (MCS), Whale and Dolphin Conservation (WDC), National Trust for Scotland (NTS) and RSPB Scotland. While some of these contributions have not resulted in pMPAs being progressed, and others remain search areas at present, we welcome the opportunity to contribute and to assist in the formation of the MPA network.

Establishing appropriate management

If the network of Marine Protected Areas is to meet the objectives set out in section 79.3 of the Act, it is vital that effective management measures are established for the entire network, including existing European Marine Sites, many of which are still lacking management measures. Appropriate management measures must be established for the network to contribute to protecting and enhancing Scotland's seas. We believe that activities that do not damage the features and ecological function of a site may be permitted and that there is no reason to suppose that activities and MPAs could not co-exist; this view is supported by the conclusions in the "Making the case for the sound management of Marine Protected Areas⁸" report. However, we are concerned that the management options presented will not manage all activities in MPAs in ways that protect and recover its constituent species, habitats and ecosystem function. This is of particular concern in light of the widespread concerns and declines for seabed habitats documented in Scotland's Marine Atlas coupled with the fact that of the 37 pMPAs and search locations, 20 are enhancement opportunities to existing measures and 12 are derived from least damaged/more natural locations, where activity would be expected to be limited anyway.

1. Protecting Scotland's Species and Habitats

MPA search features were identified in the MPA Guidelines because they were "considered likely to be representative of a wider range of features which would also benefit from spatial protection and inclusion in the network". While we acknowledge the addition of six other biological features (circalittoral sand and coarse sediment communities, circalittoral muddy sand communities, serpulid aggregations, white cluster anemone, ocean quahog and herring spawning grounds) as protected features, we believe that a "wider range of features" must consider many more species and habitats in poor, or uncertain, status in Scotland's seas if the network is to achieve its full potential and help protect and recover the health of Scotland's seas overall. We believe that the present proposals could provide protection and benefits to a much wider group of species and habitats, if those were included as MPA protected features (as specifically allowed for in the MPA Selection Guidance) and in the management options currently being developed. As an example, we have evidence showing the importance of the Firth of Forth Banks Complex for sandeels, kittiwake, guillemot, gannet, puffin, harbour porpoise, minke whale and other cetacean species. LINK Marine Task Force welcomes further discussion and an opportunity to input information.

2. Network coherence

The MPA selection guidelines make it clear that, as part of meeting the OSPAR guidelines for an ecologically coherent network that

⁸ Bell, E.; Brennan, R.; Nickell, T.; Potts, T.; Valcic, B.; Wilson, H. (2011). Making the Case for the Sound Management of Marine Protected Areas. (Scottish Environment LINK, Trans.) (pp. 99), Scottish Association for Marine Science.

“An assessment will also be made of other marine habitats and species which may be present within the potential areas in terms of the contribution that could be made to the broader representivity of the network.”

The management options must account for each site's ecological function' so that its protection and possible enhancement may contribute to the overall health of Scotland's seas.

To achieve the MPA network goal of ecological coherence, the further step of management considerations should be included for how these MPAs, in conjunction with other, wider and species specific measures, would assist in the protection of all listed Scottish PMFs. These management considerations should include how the proposed management objectives in the MPA documents, could affect other PMF habitats and species, in particular the presence of marine mammals and sea birds which have, by and large, been absent from most of the assessments made in the proposed Scottish MPA network.

3. Conservation Objectives

We have some specific concerns over the setting of individual conservation objectives, particularly in some of the inshore possible MPAs, and these are detailed in the individual site responses.

In the offshore sites there is universal use of the conservation objective 'conserve (feature condition uncertain)'. In the sensitivity analysis performed for assessment against the MPA selection guidelines, Guideline 2d is:

“Guideline 2d. The search location contains features considered least damaged / more natural, rather than those heavily modified by human activity”.

This guideline is not considered to be met for **any** of the biodiversity features of offshore possible MPAs except for sandeels in North-west Orkney and Turbot Bank (and we dispute those assessments based on seabird decline data). In all cases this guideline is not considered to be met because analysis of the sensitivity to human activities that are known to be present leads to the conclusion that the features are likely to have been damaged. Some direct evidence of damage is cited in the consultation documents (e.g. Hughes *et al.*, 2011)⁹.

We consider that this assessment of vulnerability, of likely damage already having been sustained, and none of the biodiversity features in offshore sites meeting guideline 2d, suggests a designation of 'recover' under the designation principles laid out in the management options papers:

“A conserve objective is used where evidence exists that a protected feature of an MPA is in good condition or where limited evidence exists and therefore there is uncertainty concerning the condition of a feature. A recover objective will be used where evidence exists that a species or habitat of an MPA is declining and/or damaged, to the point where it is not considered to be in a good condition.”

However, we recognise the difficulties inherent in a 'recover' objective when the current state and the ability of features to recover are poorly known. So we are prepared to support the use of 'conserve (feature condition uncertain)' as long as the likely damaged condition and vulnerability of protected features to human activities is properly taken account of in the management options. The management

⁹ Hughes, D.J., Nickell, T. and Gontarek, S. (2011). Biotope analysis of archived stills from the SEA7 region of Scotland's seas. Report prepared by SAMS for the Joint Nature Conservation Committee. In prep.

options must be chosen using an evidence-based approach and with the application of the precautionary principle. It is on this basis that we have supported the conserve (feature condition uncertain) designation in the offshore sites.

The starting point for the MPA search was Least Damaged/More Natural, and almost all the offshore sites were brought forward under this process. However, in none of these sites are the biodiversity features thought to meet the Guideline 2d *“contains features considered least damaged / more natural, rather than those heavily modified by human activity”*. This is a telling indictment of the state of our seas.

We also strongly recommend that conservation objectives are set with appropriate consideration of both the species' overall status and the site based population. For example, the Sound of Canna fan mussel bed in the Small Isles MPA proposal is singularly in good condition and is set as 'conserve'. However, the species is not in good condition, in suitable habitat, throughout the rest of the Small Isles pMPA and is in overall poor condition in Scotland's seas and needs strong management measures in this site as well as elsewhere for its recovery. For mobile species the situation can also be complicated. For example, there are differences between the vocalisations of east and west coast populations of white-beaked dolphins, indicating these are separate populations and should be treated as such.

4. Managing Activities

The Marine Protected Areas draft management handbook¹⁰ indicates the process for defining management options will be based on the risk current activities place on a site's protected features –

“Management options will be developed by considering the risk of not achieving the conservation objectives of the protected features by looking at the likely interaction between protected features and activities”.

It is unclear how this accounts for (i) activities that may increase in intensity in the future, (ii) new activities that may expand into a site in the future but that do not need licensing, resulting in combined and cumulative impacts, and (iii) increased overlap that may occur if the habitat expands once properly protected. We would like these considered as part of each site's management plans, particularly given that the sectoral ambitions indicated in the National Marine Plan consultation documents will increase pressures on the marine environment either directly or indirectly through the displacement of other activities.

The draft management handbook cites the first five of the 'general principles' identified in the MPA selection Guidelines. However, we note nine exist in the original guidelines and urge that the 9th principle (“Activities which are not compatible with the conservation objectives of a nature conservation MPA will be restricted”) is a key consideration as management options are drafted. This is particularly pertinent based on comments made by Cabinet Secretary Richard Lochhead stating the number one priority to be protecting the marine environment.

We recognise the role of zonal management within MPAs. However, we would emphasise that zonal management should not be used to allow an activity to operate up to the absolute limit of a protected feature's geographic extent, since the network's ability to meet the enhancement duty set out in the Marine Act may be inhibited by such a *de minimis* approach. In particular, utilising zonal management

¹⁰ Planning Scotland's Seas: Marine Protected Areas Draft Management Handbook.
<http://www.scotland.gov.uk/Topics/marine/marine-environment/mpanetwork/handbook>

in this parsimonious way may fail to diminish pressures on the feature, will prevent its geographical recovery, and will make management difficult to establish and costly to enforce.

CONSULTATION QUESTIONS

1. Do you support the development of an MPA network in Scotland's Seas?

Yes No

Scottish Environment LINK believes the creation of this MPA network is the single most important conservation measure in the history of Scotland's Seas, we therefore strongly support the development of an MPA network.

Individual possible Nature Conservation MPAs

2. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Clyde Sea Sill* possible Nature Conservation MPA?

Designation: Yes No

LINK supports the designation of the Clyde Sea Sill possible Nature Conservation MPA to protect black guillemot, fronts and circalittoral sand and coarse sediment communities.

We support the conservation objectives for the protected features within the Clyde Sea Sill possible MPA of 'conserve' for all features.

In addition to black guillemot, other seabird species must be added to the list of species protected in the Clyde Sea Sill MPA. The Sanda Island SSSI, which sits within the possible MPA, is designated for black guillemot, Atlantic puffin, shag, great black-backed gull, fulmar, storm petrel, razorbill, guillemot, Manx shearwater, cormorant and black-legged kittiwake. Of these 11 species, five are classed as being in 'unfavourable' condition within the Sanda Island SSSI¹¹.

The possible MPA is also within foraging distance of Ailsa Craig SSSI/SPA, designated for Northern gannet (23,000 pairs 8.7% of the world biogeographic population) and lesser black-backed gull (1,800 pairs, 1.4% of the total *Larus fuscus greallsii* biogeographic population). It regularly supports 65,000 seabirds including nationally important populations of the following species: common guillemot (3,350

¹¹ SNH Site Details for Sanda Islands. http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=1402

pairs, 0.5% of the GB population), black-legged kittiwake (3,100 pairs, 0.6% of the GB population) and herring gull (2,250 pairs, 1.4% of the GB population). These protected sites show the importance of this possible MPA for seabirds.

RSPB tracking data (currently unpublished) collected as part of the FAME¹² project shows black-legged kittiwake use the Clyde Sea Sill possible MPA. Given the high, localised seabird populations, the location of the possible MPA in relation to foraging range, and the decline of seabird populations throughout Scotland¹³, this Clyde Sea Sill possible MPA should be designated for seabird species.

The possible MPA must protect the areas where these birds forage. As is the case with terrestrial sites, the linkages and collaborative protection offered with a combination of national and international designations must be employed in the marine environment. Only with SPAs and MPAs for seabirds will adequate protection be secured.

The Clyde Sea Sill possible MPA region is also known to be used by bottlenose dolphin, harbour porpoise and basking shark. These species should be taken into account when developing management measures for this site.

We recommend that further work be carried out to better understand the effects of the front in the Clyde Sea Sill possible MPA. Oceanic fronts should be considered as 'proxy' features suggesting the presence of other species and habitats. The effect of the front can be to create nutrient rich conditions in the surface water, beneficial to different marine organisms.

The consultation document states "fronts can concentrate nutrients and plankton creating feeding hotspots for fish which in turn attract other higher marine predators". The species that benefit from the effects of the front, particularly including mobile species, should be afforded protection where qualifying criteria dictate.

Unpublished data from the FAME project also shows the Clyde Sea Sill is an important foraging location for a number of seabirds from colony in Rathlin, Northern Ireland.

Management Options:

Yes No

Renewables

Given the proximity of the lease site to Sanda Island SSSI (1.7 Km approx.) and Ailsa Craig SPA/SSSI (30.3 Km approx.), and the foraging habits of many of the birds we recommend that the lease site be developed with a condition that seabird monitoring work is carried out to assess the impact of the structure.

Given the potential effect renewable developments can have on black guillemot, we

¹² <http://www.fameproject.eu/en/>

¹³ SNH - <http://www.snh.gov.uk/docs/B424907.pdf>

recommend that any additional renewable developments are only granted permission within the possible MPA once sufficient monitoring work of the lease site is completed.

Proposals from holders of the tidal power lease, OceanFlow Energy, are for a 1/4 scale Evopod device. This is a floating tethered device with a submerged turbine with open rotating blades.. Wave and tidal stream devices with rotating turbines are likely to pose a greater threat to birds, as well as other mobile species such as basking sharks and cetaceans, than those without such blades.

McCluskie et al. (RSPB 2012)¹⁴ point out that “While in many ways analogous to both wind turbines and the propellers of ships and boats, the turbines of wave and tidal devices spin at considerably slower speeds, at or below 12 ms⁻¹”. This reduces the likelihood of injury to birds.

There is a risk to black guillemots from this development, “auks *Alcidae sp.*, cormorants *Phalacrocorax sp.* and divers *Gavia sp.* are most vulnerable to collisions due to their tendency to consistently dive to depths where moving components are found, and also to exploit habitats suitable for tidal stream turbine installations.” (Waggitt & Scott 2013¹⁵). However, given that seabirds are long lived and are able to acquire knowledge of foraging areas, the impact will most likely be short term.

Monitoring work will help expand knowledge of interactions between wildlife and renewable developments to better inform developers, the Government (and associated bodies), as well as conservation organisations.

If this development is shown not to have an effect on seabirds and other marine species it could serve as a good example of how renewable developments can exist within a protected area and have no impact on the features for which the site is designated.

Other factors to consider are the moorings and cables used in renewable developments. These are particularly important considerations for foraging birds and for basking sharks and minke whales, that can become entangled. Entanglement of minke whales is a considerable issue in Scottish waters, where half of stranded minke whales show signs of having been entangled.) is within the possible foraging range for this species and should be considered.

Fishing

LINK supports the management option to remove or avoid set nets from within the site, and throughout the site. Monitoring and compliance of set net activity in this site will be of paramount importance to ensure the conservation objectives are achieved. Should a fishing practice thought to cause seabird bycatch or mortality

¹⁴ McCluskie, A.E., Lagston, R.H.W., Wilkinson, N.I., Birds and wave & tidal stream energy: an ecological review. RSPB Research Report: 42.

¹⁵ Waggitt, J.J., Scott, B.E. 2013. Using a spatial overlap approach to estimate the risk of collisions between deep diving seabirds and tidal stream turbines: A review of potential methods and approaches.” Marine Policy (in Press)

commence, recommendations from the EU's Action Plan for reducing incidental catches of seabirds in fishing gears must be adopted (COM(2012) 665).

We agree that reducing or limiting pressures from demersal mobile/active gear should be considered to meet guidelines on circalittoral sand and coarse sediment. This should be fully discussed with skippers in the area and other stakeholders (including environmental and wider community stakeholders, not just fishing interests).

Guideline 2b in the assessment paper for this site lists a number of the species which are present due to the circalittoral and coarse sediment. We seek clarification on whether management options have considered any effects activities will have on these species as well as the feature.

Given the close association between black guillemot and kelp beds (and other habitats rich in algae), LINK suggests that this MPA is considered in the parallel draft seaweed policy statement consultation, and particularly with regards to guidance developed for the harvest of wild seaweed.

Socioeconomic Assessment:

Yes No

The potential for seabird and wildlife tourism in this region is significant. Throughout summer 2005, an RSPB Aren't birds brilliant project staffed by volunteers showed people seabirds from boats on the Firth of Clyde. The volunteers provide information on the birds, their conservation and the management of marine areas. RSPB Scotland staff met with approximately 2,000 passengers sailing around Ailsa Craig, on the world's last ocean-going paddle steamer The Waverley, and on the Caledonian MacBrayne Ardrossan-Brodick (Arran) commercial ferry service. (Watched Like Never Before, RSPB¹⁶).

The potential value of the Clyde Sea Sill possible MPA to divers and sea anglers has been estimated at £7.1 to £14.9 million based on willingness-to-pay measures (Kenter *et al.*, 2013)¹⁷. Kenter *et al.* also found important emotional and well-being benefits associated with the Clyde Sea Sill possible MPA, with divers and anglers responding to questionnaire scoring >4 (out of a maximum score of 5) for engagement, therapeutic, spiritual, transformative and social wellbeing indicator values.

All of the above:

Yes No

LINK strongly supports the Scottish Government proposal to designate the Clyde Sea Sill MPA to protect black guillemot, circalittoral sand and coarse sediment

¹⁶ http://www.rspb.org.uk/Images/watchedlikeneverbefore_tcm9-133081.pdf

¹⁷ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

communities, and fronts. Where present, kelp habitats ought also to be protected in this pMPA to support wider ecosystem function, including black guillemot feeding.

3. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *East Caithness Cliffs* possible Nature Conservation MPA?

Designation: Yes No

LINK supports the designation of the East Caithness Cliffs possible Nature Conservation MPA to protect black guillemot populations. The proposed site boundaries hold a significant proportion of Scotland's black guillemot population and have been established based on scientific evidence endorsed by LINK.

We support the conservation objective of 'conserve'.

Management Options: Yes No

LINK strongly supports the management option to remove set nets from, or avoid their introduction to, the whole possible MPA site. Should a fishing practice thought to cause seabird bycatch or mortality commence, recommendations from the EU's Action Plan for reducing incidental catches of seabirds in fishing gears must be adopted (COM(2012) 665).

LINK strongly supports the management measure to reduce or avoid the spread of mammalian predators and would strongly support the development of biosecurity plans for the terrestrial breeding habitat adjacent to each of the possible MPAs which include black guillemot as a protected feature. The RSPB shall be developing biosecurity best practice guidelines and will welcome discussion regarding the application of these guidelines within colonies adjacent to possible MPAs.

LINK welcomes the alignment of this possible MPA with the existing East Caithness Cliffs SPA, and suggests that management measures are applied in a way that provides benefits to the entire species assemblage across MPA and SPA.

This site should be considered in the parallel draft seaweed policy statement consultation, particularly with regards to guidance developed for the harvest of wild seaweed.

Socioeconomic Assessment: Yes No

Costs have been identified in the BRIA which relate to port and harbour activities. However, management of these activities have not been proposed in the

management options paper. The link between these must be clarified if these cost estimates are to be used in ministerial decisions about the designation of this site.

The potential value of the East Caithness Cliffs possible MPA to divers and sea anglers has been estimated at £6.7 to £14.1million based on willingness-to-pay measures (Kenter *et al.*, 2013)¹⁸. Kenter *et al.* also found important emotional and well-being benefits associated with the East Caithness Cliffs possible MPA, with divers and anglers responding to questionnaire scoring >4 (out of a maximum score of 5) for engagement, therapeutic, transformative and social wellbeing indicator values.

All of the above:

Yes No

Strategic Environmental Assessment:

By establishing biosecurity, this site would also be contributing safeguards to populations of other seabirds breeding along Caithness cliffs. However, unlike black-guillemot, many of these species are in decline nationally. For biosecurity to offer additional benefits to these species, and for the Scottish Government to meet its obligations under the Birds Directive, protection of at-sea feeding areas (beyond colony extensions) will also be required for these birds.

Where present, kelp habitats ought also to be protected in this pMPA to support wider ecosystem function, including black guillemot feeding.

4. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *East of Gannet and Montrose Fields* possible Nature Conservation MPA?

Designation:

Yes No

LINK supports the designation of the East of Gannet and Montrose Fields possible Nature Conservation MPA for the protection of ocean quahog aggregations (including sands and gravels as their supporting habitat) and offshore deep-sea muds. The boundary of the possible MPA is fully supported. The southern part of the possible MPA includes one of very few examples of deep-sea mud on the continental shelf in the North Sea. We note that offshore sands and gravels have been included as a proxy for ocean quahog (but not a selection feature in their own right).

We accept the conservation objective of 'conserve - feature condition uncertain'.

¹⁸ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

However, we note that selection guideline 2d was not considered to be met for the protected biodiversity features in this site as sensitivity analyses concluded that there is a risk that features have been modified by human activity.

Management Options: Yes No

Management options for protected features of uncertain condition must be evidence-based, account for the known vulnerability of the protected features to human activities and make appropriate use of the precautionary principle.

We support the application of large zones prohibiting all forms of disturbance by bottom contact fishing gear to ensure sizable proportions of the features and supporting habitat are fully protected from disturbance and have opportunity for future enhancement. This position is heightened by the 'many concerns' status assessment of shelf subtidal sediments in the Forties area of the North Sea, in which this possible MPA sits, highlighted by Scotland's Marine Atlas.

Socioeconomic Assessment: Yes No

Even the upper management scenario from the Sustainability Appraisal estimates loss in value of fishery landings as £0.22million. That the value of fish landed does not appear to be substantial is consistent with much of the possible MPA being considered Least Damaged/More Natural. Given the context of 'many concerns' across the Forties region, it would therefore make sense to enhance the naturalness of the seabed in this already less used part of the north sea by prohibiting towed/active fishing gear from the deep sea-mud and known ocean quahog aggregations at least and provide buffer zones around them.

All of the above: Yes No

5. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Faroe-Shetland sponge belt* possible Nature Conservation MPA?

Designation: Yes No

LINK supports the designation of the Faroe-Shetland sponge belt possible Nature Conservation MPA for the protection of deep-sea sponge aggregations, ocean quahog aggregations (including sands and gravels as their supporting habitat), offshore subtidal sands and gravels and geodiversity interests (including continental slope channels, iceberg ploughmark fields, prograding wedges, slide

deposits, sand wave fields and sediment wave fields). The boundary of the possible MPA is fully supported. This possible MPA has no ecological equivalent for the features and offers the only representation of the particular variant of deep sea sponge aggregations in OSPAR II as well as ocean quahog at the northern extend of its range in OSPAR II. We believe that the large-scale biodiversity feature continental slope should be added to this site, together with appropriate management measures for the associated biodiversity.

We accept the conservation objective of 'conserve - feature condition uncertain'. However, we note that selection guideline 2d was not considered to be met for the protected biodiversity features in this site as sensitivity analyses concluded that there is a risk that features have been modified by human activity.

Management Options:

Yes No

Management options for protected features of uncertain condition must be evidence-based, account for the known vulnerability of the protected features to human activities and make appropriate use of the precautionary principle.

We fully support the removal of pressures associated with bottom contact (static and mobile) fishing gear to achieve protection and enhancement of the features. This position is reinforced by the 'declining' status assessment of deepsea habitats and 'many concerns' and 'declining' status of shallow and shelf subtidal sediments in the Faroe-Shetland Channel, in which this possible MPA sits, highlighted by Scotland's Marine Atlas.

This site is known to be used by white-sided dolphin, sperm whale, long-finned pilot whale and fin whale. These species should be considered when developing management options and in the socioeconomic assessment.

Socioeconomic Assessment:

Yes No

The benefits of conserving deep sea biodiversity in an area of this degree of richness far outweigh the minimal and short lived benefits of trawling in such areas. We are concerned about the inappropriate assumptions made in the socioeconomic assessment when calculating the costs of designation.

All of the above:

Yes No

LINK supports the designation of the Faroe-Shetland sponge belt possible Nature Conservation MPA

6. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Fetlar to Haroldswick* possible Nature Conservation MPA?

Designation: Yes No

LINK supports the designation of the Fetlar to Haroldswick possible Nature Conservation MPA for the protection of biodiversity features: black guillemot; circalittoral sand and coarse sediment communities; horse mussel beds; kelp and seaweed communities on sublittoral sediments; maerl beds; and shallow tide-swept coarse sands with burrowing bivalves; and geodiversity features: marine geomorphology of the Scottish shelf seabed. The boundary of the site is supported.

The management options paper notes that *'maerl beds and horse mussel beds are considered highly sensitive to certain pressures associated with finfish farming'* and *'any impacts to the horse mussel beds, maerl beds, and kelp and seaweed communities on sublittoral sediment will have already occurred'*. On this basis, and following the MPA guidelines, the conservation objective for these features should be set to 'recover' to reverse some of these historic impacts.

We support the conservation objectives of conserve for the other features.

Management Options: Yes No

Management should ensure no new finfish and shellfish aquaculture sites are developed within the possible MPA and, where there is risk of damage to protected features, existing facilities should be relocated. Towed/active gear should be removed from areas with the following features to ensure their protection and enable their recovery: maerl beds, horse mussel beds¹⁹, shallow tide-swept coarse sands with burrowing bivalves, kelp and seaweed communities on sublittoral sediment, shallow tide-swept coarse sands and circalittoral sand and coarse sediment communities. The existing scallop dredging restrictions are welcome but in line with the above preference should be extended to cover the known extent of the features listed with a buffer area to enable their recovery.

LINK strongly supports the management measures for black guillemot, to reduce or avoid the spread of mammalian predators. Black guillemot are known to feed in kelp beds and while current threats may be small this site should also be considered in the parallel draft seaweed policy statement consultation, particularly with regards to guidance developed for the harvest of wild seaweed.

In the absence of detailed information relating to the impacts of aquaculture on proposed protected features within an MPA it is imperative that the precautionary

¹⁹ Cook R, Fariñas-Franco JM, Gell FR, Holt RHF, Holt T, et al. (2013) The Substantial First Impact of Bottom Fishing on Rare Biodiversity Hotspots: A Dilemma for Evidence-Based Conservation. PLoS ONE 8(8): e69904

approach be applied. Discussions with finfish farming interests cannot be used as a proxy for specific, detailed information and where doubt exists management measures must be precautionary.

Socioeconomic Assessment:

Yes No

We note that displacement of fishing activity from the Fetlar to Haroldswick possible MPA is estimated to have zero impact on loss of landings, therefore further restricting towed/active gear to allow greater scope for feature recovery is unlikely to have significant socio-economic impact. The potential value of the Fetlar to Haroldswick possible MPA to divers and anglers has been estimated at £5.7million to £12million based on willingness-to-pay measures (Kenter *et al.*, 2013)²⁰. Kenter *et al.* also found important emotional and well-being benefits associated with the Fetlar to Haroldswick possible MPA, with divers and anglers responding to questionnaire scoring >4 (out of a maximum score of 5) for engagement, therapeutic, spiritual and transformative wellbeing indicator values.

All of the above:

Yes No

LINK supports the designation of the Fetlar to Haroldswick possible Nature Conservation.

Where present, kelp habitats ought also to be protected in this pMPA to support wider ecosystem function, including black guillemot feeding.

7. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Hatton-Rockall Basin* possible Nature Conservation MPA?

Designation:

Yes No

LINK supports the designation of the Hatton-Rockall Basin possible Nature Conservation MPA for the protection of deep-sea sponge aggregations, offshore deep-sea muds and sediment drift and polygonal fault system geodiversity features. The documents provide good evidence of the presence of some extremely important examples of features that require protection, but not very good evidence of their distribution. It is therefore difficult to comment on the exact boundaries of the site. However it is clear that the precautionary principle would demand some form of protection for this area.

²⁰ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

We accept the conservation objective of 'conserve - feature condition uncertain'. However, we note that selection guideline 2d was not considered to be met for the protected biodiversity features in this site as sensitivity analyses concluded that there is a risk that features have been modified by human activity.

Management Options: Yes No

Management options for protected features of uncertain condition must be evidence-based, account for the known vulnerability of the protected features to human activities and make appropriate use of the precautionary principle.

The management options suggested (fishery closure) are appropriate and necessary to achieve conservation of the features. However, as the area lies outside the UK fishery limits and does not include Annex 1 Habitats it will be necessary to rely on NEAFC²¹ to introduce the measures necessary to enforce this closure. The reliability of this process remains to be tested.

Socioeconomic Assessment: Yes No

The benefits of conserving deep sea biodiversity in an area of this degree of richness far outweigh the minimal and short lived benefits of trawling in such areas.

All of the above: Yes No

The proposed MPA and suggested management measures are fully justified by the habitats and species known to be present. Further research is needed to clarify the type and extent of fishery in the area. Further surveys are needed to identify the full extent of sponge aggregations and to document their species richness, It is likely that the area will support a large number of as yet undescribed species.

Long-finned pilot whale and northern bottlenose whale are known to use this site and should be included in the management options and socioeconomic assessments.

8. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Loch Creran* possible Nature Conservation MPA?

Designation: Yes No

²¹ NEAFC – North East Atlantic Fisheries Commission.

LINK supports the designation of the Loch Creran possible Nature Conservation MPA for the protection of flame shell beds and geodiversity feature, quaternary of Scotland. The boundary and area of the possible MPA is fully supported. This possible MPA (overlying the existing SAC for biogenic reefs) will be important to protect and enhance Serpulid aggregations, Flame shell beds and Horse Mussels. The area has already been declared an SAC and management will need to refer to, and align with, the objectives of the SAC. The congruence of the boundaries will simplify this.

Without better resolution data of fishing effort, it is impossible to determine whether the extant distribution of flameshell beds is likely to have been in any way constrained by pressure to date. Furthermore, the modelled distribution west of Creagan narrows is surprisingly small and, based on flameshell distribution in other sea loch narrows, might be expected to be larger in extent given the chance to recover. On the basis of lack of pressure data and expected potential extent, we would prefer a conservation objective of 'recover' for flameshell beds.

Management Options:

Yes No

The management options to remove or avoid impact to these benthic communities are supported. We support and encourage designation of zones prohibiting all forms of disturbance by mobile and static gear, diver-operated hydraulic methods and expansion of new aquaculture ventures. As well as the direct impact of finfish aquaculture we would draw attention to the need to limit overall nutrient input to a loch with such limited circulation as Loch Creran as this is particularly likely to affect communities in the Shian Narrows.

In the absence of detailed information relating to the impacts of aquaculture on proposed protected features within an MPA it is imperative that the precautionary approach be applied. Discussions with finfish farming interests cannot be used as a proxy for specific, detailed information and where doubt exists management measures must be precautionary.

Socioeconomic Assessment:

Yes No

The area is hugely important for marine tourism, including sailing, angling and diving. The assessment in the Loch Creran partial BRIA does not adequately consider this nor the potential for expansion or synergy with the possible MPA. The potential value of the Loch Creran possible MPA to divers and sea anglers has been estimated at £6 to £12.7million based on willingness-to-pay measures (Kenter *et al.*, 2013)²². Kenter *et al.* also found important emotional and well-being

²² Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

benefits associated with the Loch Creran possible MPA, with divers and anglers responding to a questionnaire scoring >4 (out of a maximum score of 5) for engagement, therapeutic, transformative, spiritual and social wellbeing indicator values.

All of the above: Yes No

Loch Creran contains a complex mosaic of rare and vulnerable benthic species, including those designated as SAC features and proposed for the MPA. Overlaid on this is a dense pattern of socioeconomic uses within a very small area. Very careful management will be required to ensure that these are all compatible. Further research is needed to determine the impacts of the existing aquaculture operations remote from their immediate footprint. The interaction between finfish and shellfish aquaculture should also be investigated.

9. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Loch Sunart* possible Nature Conservation MPA?

Designation: Yes No

LINK support the designation of the Loch Sunart possible Nature Conservation MPA for the protection of flame shell beds; northern feather star aggregations on mixed substrata and serpulid aggregations. The boundary and area of the Loch Sunart possible MPA is fully supported. The area has already been declared SAC for the reefs habitats and management will need to refer to, and align with, the objectives of the SAC.

Until a clearer understanding of historic pressures and current extent is arrived at, we would conclude that the status of the features in their historic context is uncertain and should not default to 'conserve'.

Management Options: Yes No

We support advice to remove damaging pressures from the proposed protected features. The management options to regulate and minimise impact to these benthic communities are supported. We support and encourage designation of zones prohibiting all forms of disturbance by mechanical and static fishing gear, anchors, moorings, diver-operated hydraulic methods and expansion of new aquaculture ventures, to ensure the full known extent of these sensitive communities are fully protected from disturbance and, with a suitable buffer zone around them, have opportunity for future enhancement.

Existing aquaculture ventures will need to ensure they are compliant with updated or revised Environmental Management Systems to ensure operations minimise local and diffuse cumulative impacts, particularly with respect to water quality,

erosion, sedimentation and disease.

In the absence of detailed information relating to the impacts of aquaculture on proposed protected features within an MPA it is imperative that the precautionary approach be applied. Discussions with finfish farming interests cannot be used as a proxy for specific, detailed information and where doubt exists management measures must be precautionary.

Socioeconomic Assessment:

Yes No

LINK acknowledges the important contribution of the Marine Conservation Society in bringing this possible MPA to the consultation stage.

This contribution is an excellent demonstration of the high value that communities, both of place and of interest, put on the integrity of the marine environment. It also points to the existence of the non-use value of MPAs that has been largely omitted from the economic assessments.

The socioeconomic impact data presented in the BRIA indicates the small costs associated with designation and restriction of damaging activities will be outweighed by the medium to long term benefit of protecting the ecological integrity of the possible MPA so it can continue to provide ecosystem services to Scotland's inshore waters. The potential value of the Loch Sunart possible MPA to divers and sea anglers has been estimated at £7.2 to £15.2million based on willingness-to-pay measures (Kenter *et al.*, 2013)²³. Kenter *et al.* also found important emotional and well-being benefits associated with the Loch Sunart possible MPA, with divers and anglers responding to a questionnaire scoring >4 (out of a maximum score of 5) for engagement, identify, therapeutic, transformative, spiritual and social wellbeing indicator values.

All of the above:

Yes No

Harbour porpoise are known to use this site and under Guideline 1b of the selection criteria for PMFs on the OSPAR T&D list should be protected in the MPA and considered in the management and the socioeconomic assessment, as well as consideration of designation as part of the Natura 2000 SAC network

10. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Loch Sunart to the Sound of Jura* possible Nature Conservation MPA?

²³ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

Designation: Yes No

We support the designation of the Loch Sunart to Sound of Jura possible MPA for common skate. We understand that common skate are found throughout Scottish waters, certainly off the west and northern coasts and islands, but that the data supporting the Loch Sunart to Sound of Jura possible MPA suggests a core of resident animals meriting area-based protection. However, further scientific study of common skate throughout Scottish waters is urgently needed to find at least one other possible MPA to contribute toward replication for this MPA search feature. Protecting Loch Sunart to Sound of Jura alone will not provide sufficient area-based protection for this rare and vulnerable giant.

The conservation objective of conserve (feature condition uncertain) is supported.

Management Options: Yes No

We note that further information on the impact of aquaculture (finfish and shellfish), mooring and anchoring on common skate eggs is needed before management recommendations can be made, therefore think it premature to previously state that 'No additional management' will be needed for these activities. On the contrary, additional management may be needed for some or all of these preceding activities if new impact data arises. We support the management options for fishing as presented, particularly the recommendation to remove bottom set-nets and long lines from the possible MPA. We would recommend capping existing bottom-towed fishing effort, until more information is gathered on towed/active fishing gear effort and its interaction with common skate in the area.

Socioeconomic Assessment: Yes No

LINK acknowledges the important contribution of the Scottish Sea Angling Conservation Network in bringing this possible MPA to the consultation stage.

This contribution is an excellent demonstration of the high value that communities, both of place and of interest, put on the integrity of the marine environment. It also points to the existence of the non-use value of MPAs that has been largely omitted from the economic assessments.

The potential value of the Loch Sunart to Sound of Jura possible MPA to divers and sea anglers has been estimated at £8.2 to £17.2million based on willingness-to-pay measures (Kenter *et al*, 2013)²⁴. The upper limit for sea anglers alone was £14.3million, second only to South Arran possible MPA, not surprising given the

²⁴ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

obvious interest of healthy common skate populations to sea anglers. There are also important emotional and well-being benefits associated with the Loch Sunart to Sound of Jura possible MPA, with divers and anglers responding to a questionnaire scoring >4 (out of a maximum score of 5) for engagement, transformative, spiritual and social wellbeing indicator values (Kenter et al 2013)

All of the above: Yes No

We note and welcome the fact that removing bottom set-nets and longlines from Loch Sunart to Sound of Jura possible MPA would provide consequential protection for European spiny lobster (*Palinurus elephas*), itself a MPA search feature (for which suitable MPA sites have not been put forward) and a component of the Reef protected feature in the Firth of Lorn SAC. We would therefore support the inclusion of European Spiny Lobster as a protected feature for this pMPA.

11. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Loch Sween* possible Nature Conservation MPA?

Designation: Yes No

LINK supports the designation of the Loch Sween possible Nature Conservation MPA for the protection of burrowed mud, maerl beds, native oysters and sublittoral mud and mixed sediment communities. The boundary is fully supported though the information pertaining to the seaward part (Keillmore, Loch na Cille, Macormaic Isles) is not well presented. This is a region of complex underwater topography and very high tidal streams, in marked contrast to the rest of the site. It is likely that maerl beds are more extensive than shown here.

Without a more detailed assessment of fishing levels, we are unable to support the conservation objectives. We would support removal of fishing pressure from maerl beds and native oysters and reduction of pressure on mud habitats. If fishing activity has not previously been excluded from areas of maerl and oyster, a precautionary approach would suggest that they have been impacted and therefore the conservation objective for these features should be set to 'recover'.

Management Options: Yes No

The management options discussed but need a more realistic assessment of fishing levels. We are also concerned about the impact of recreational anchorages on maerl in outer Scottish narrows and ask that this recreational anchorage be reviewed to ensure it is not in the vicinity of any maerl habitat. If it is in the vicinity we would request that it be moved in order to minimise impact on maerl.

Socioeconomic Assessment:

Yes No

LINK acknowledges the important contribution of the Marine Conservation Society in bringing this possible MPA to the consultation stage.

This contribution is an excellent demonstration of the high value that communities, both of place and of interest, put on the integrity of the marine environment. It also points to the existence of the non-use value of MPAs that has been largely omitted from the economic assessments.

The MPA documents are deficient in their assessment of current levels of fishing. For instance the creeling pressure is assumed to be for crabs whereas most is currently for *Nephrops* and therefore affects a different habitat type. Mobile gear is only likely to affect sites over 10 m depth and Linnhe Mhuirich is inaccessible except to boats of shoal draft. Scallop dredging has been intense in the region of Keillmore - Macormaic Isles in 2013.

The potential value of the Loch Sween possible MPA to divers and sea anglers has been estimated at £7.6 to £15.9 million based on willingness-to-pay measures (Kenter *et al.*, 2013)²⁵. Kenter *et al.* also found important emotional and well-being benefits associated with the Loch Sween possible MPA, with divers and anglers responding to questionnaire scoring >4 (out of a maximum score of 5) for engagement, therapeutic, spiritual, transformative and social wellbeing indicator values

In the absence of detailed information relating to the impacts of aquaculture on proposed protected features within an MPA it is imperative that the precautionary approach be applied. Discussions with finfish farming interests cannot be used as a proxy for specific, detailed information and where doubt exists management measures must be precautionary.

All of the above:

Yes No

Loch Sween is a remarkable sea loch both in terms of its physiography and its biota. Its listing as an MPA is fully supported. Clarification of fishing pressures is urgently needed. The habitats/species present in the complex topography around the Macormaic Isles are not well described.

Note that Loch Sween is also a marine algae Important Plant Area (IPA) as the site has diverse and unusual algal assemblages. Rare or threatened species: *Phymatolithon calcareum*.

²⁵ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

12. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Lochs Duich, Long and Alsh* possible Nature Conservation MPA?

Designation: Yes No

LINK supports the designation of the Lochs Duich, Long and Alsh possible Nature Conservation MPA for the protection of burrowed mud and flame shell beds. The boundary and area of the possible MPA is fully supported. The pMPA exhibits the most significant population of flame shells recorded in Scotland (and possibly the world), and is the only known loch where a wild (non-translocated) fan mussel has been recorded. The possible MPA also represents the most significant remnant burrowed mud communities in sheltered and shallow sea lochs of Scotland. We note this possible MPA overlaps with a previously designated SAC (primarily for protection of reef habitat) and management will need to refer to, and align with, the objectives of this SAC.

We support the conservation objective for the flameshell beds within the Lochs Duich, Long and Alsh pMPA to be 'conserve', due to its already great extent. However, fishing pressure from towed/active gear should be removed, not just reduced, from the most sensitive burrowed mud features, particularly fireworks anemones. Burrowed mud should therefore be set to 'recover' since given the high sensitivity of this species to mobile fishing gear (Scotland's Marine Atlas), historic fishing pressure is likely to have reduced the extent of this local population of nationally scarce species. Fan mussel needs to be added to the protected features list for this pMPA and a conservation objective set to 'recover', both for this local individual/ population (we cannot confirm whether the record is isolated or not) and to contribute to population recovery throughout Scotland. Although not an aggregation, addition of the species would be in line with the case for adding native oyster to Loch Sween and Northwest Scotland sea lochs.

Management Options: Yes No

Management activities associated with deep water burrowed mud habitat requires revision. We support and encourage designation of zones prohibiting all forms of disturbance by mobile and static gear, anchors, moorings diver-operated hydraulic methods, and expansion of new aquaculture ventures, to ensure sizable proportions of flame shell, fan mussel and burrowed mud communities, particularly those supporting fireworks anemones, are fully protected from disturbance and have opportunity for future enhancement. We particularly support closure of activities that impact on flame shell beds in the Kyle Akin area, and this management regime should be extended to deeper water habitats particularly the sensitive fireworks anemones of Loch Duich.

In the absence of detailed information relating to the impacts of aquaculture on

proposed protected features within an MPA it is imperative that the precautionary approach be applied. Discussions with finfish farming interests cannot be used as a proxy for specific, detailed information and where doubt exists management measures must be precautionary.

Socioeconomic Assessment:

Yes No

LINK acknowledges the important contribution of the National Trust for Scotland and the Marine Conservation Society in bringing this possible MPA to the consultation stage.

This contribution is an excellent demonstration of the high value that communities, both of place and of interest, put on the integrity of the marine environment. It also points to the existence of the non-use value of MPAs that has been largely omitted from the economic assessments.

The socioeconomic impact data presented in the BRIA indicates the small costs associated with designation and restricting damaging activities (less than £0.02 million pa GVA) will be outweighed by the medium to long term benefit of protecting the ecological integrity of the possible MPA so it can continue to provide ecosystem services to Scotland's inshore waters. It is possible that the existing creel/ potting fishery, provided it is sustainably managed, will benefit from reduction in mobile gear which impacts on benthic communities. With the protection and enhancement of benthic habitats, there is likely to be improvement in recreational fish catch in the medium to long term.

The potential value of the Lochs Duich, Long and Alsh possible MPA to divers and sea anglers has been estimated at £6.9 to £14.6million based on willingness-to-pay measures (Kenter *et al.*, 2013). Kenter *et al.* also found important emotional and well-being benefits associated with the Lochs Duich, Long and Alsh possible MPA, with interviewed local users and visitors scoring >4 (out of a maximum score of 5) for engagement, identity, spiritual, therapeutic, transformative and social wellbeing indicator.

All of the above:

Yes No

Existing aquaculture ventures will need to ensure they are compliant with updated or revised Environmental Management Systems to ensure operations minimise local, and diffuse cumulative, impacts, particularly with respect to water quality, erosion, sedimentation and disease.

Note that the possible MPA also contains the Loch Duich Head Important Plant Area for marine algae. The reef system at this site is considered to be one of the best areas in the UK, there is also maerl. Threatened or rare species: *Ascophyllum nodosum* ecad *mackaii*, *Cruoria cruoriaeformis*

13. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Monach Isles* possible Nature Conservation MPA?

Designation: Yes No

LINK supports the designation of the Monach Isles possible Nature Conservation MPA for the protection of black guillemot and geodiversity features marine geomorphology of the Scottish shelf seabed and quaternary of Scotland. The proposed site boundaries hold a significant proportion of Scotland's black guillemot population.

We support the conservation objective of 'conserve'.

Management Options: Yes No

LINK supports the management option to remove set nets from, or avoid their introduction to, the site. Should a fishing practice thought to cause seabird bycatch or mortality commence, recommendations from the EU's Action Plan for reducing incidental catches of seabirds in fishing gears must be adopted (COM(2012) 665).

LINK also supports the management measure to reduce or avoid the spread of mammalian predators and would strongly support the development of biosecurity plans for the terrestrial breeding habitat adjacent to each of the possible MPAs which include black guillemot as a protected feature. RSPB Scotland shall be developing biosecurity best practice guidelines and will welcome discussion regarding the application of these guidelines within colonies adjacent to possible MPAs.

LINK suggests that this MPA is considered in the parallel draft seaweed policy statement consultation, particularly with regards to guidance developed for the harvest of wild seaweed.

Socioeconomic Assessment: Yes No

Costs have been identified in the BRIA which relate to port and harbour activities. However, management of these activities have not been proposed in the management options paper. The link between must be clarified if these cost estimates are to be used in ministerial decisions about the designation of this site.

RSPB Scotland operates a reserve at Balranald on North Uist.

The potential value of the Monarch Isles possible MPA to divers and sea anglers

has been estimated at £5.3 to £11.2 million based on willingness-to-pay measures (Kenter *et al.*, 2013)²⁶. Kenter *et al.* also found important emotional and well-being benefits associated with the Monarch Isles possible MPA, with divers and anglers responding to questionnaire scoring >4 (out of a maximum score of 5) for engagement, identity, therapeutic, spiritual, transformative and social wellbeing indicator values

All of the above: Yes No

Strategic Environmental Assessment:

By establishing biosecurity on the islands, this site would also be contributing safe guards to the populations of northern fulmar, European shag, cormorant, common tern and Arctic tern breeding on the islands. However, unlike the black-guillemot, many of these species are in decline and also require protection of at-sea feeding areas if this additional benefit is to be realised.

Where present, kelp habitats ought also to be protected in this pMPA to support wider ecosystem function, including black guillemot feeding.

14. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Mousa to Boddam* possible Nature Conservation MPA?

Designation: Yes No

LINK supports the designation of the Mousa to Boddam possible Nature Conservation MPA for the protection of sandeels and geodiversity features marine geomorphology of the Scottish shelf seabed.

However, LINK does not support the proposed site boundaries. Acoustic data indicate the distribution of suitable sandeel habitat beyond the proposed site boundary, and no known absence data has been used to establish its limits. Most fundamentally, historic data indicate that this area is a component of a larger population. By protecting part of the population, the site may not be able to manage the protected features effectively and could therefore fail to meet MPA selection guideline stage 4. MPA site boundaries must be reconsidered to ensure the site is effective for the population which it seeks to protect.

²⁶ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

The conservation objective for the sandeel feature should be set to recover. The status of the species in this site is not known and as a result, the conservation objective has been set as 'conserve (uncertain)'. LINK suggests that seabird breeding success has been so poor that the sandeels population must be in poor condition – long term and significant declines have been observed for seabird species that feed largely on sandeels. At Sumburgh Head, European shag numbers have fallen, from 508 in 1988 to 79 in 2012; black-legged kittiwake productivity was 0.13 last year; common guillemot numbers have halved between 1993 and 2012; and razorbill numbers have fallen from 150 to 60 in 2012. At Mousa, there has been a significant negative trend in Arctic skua and a steep decline in lesser-black backed gull (0 breeding pairs in 2006 & 2007). There has also been a decrease from 400 harbour (common) seals in 1983 to 77 in 2007. Latest advice from Scottish Natural Heritage indicates that prey availability is the principal cause in the decline of Scotland's seabirds²⁷ and LINK believes that this is enough evidence to show that the sandeel population in this possible MPA must be recovered (a phenological mismatch can be discarded given that seabird breeding dates have varied throughout the above time periods).

We suggest this is proxy evidence that sandeels in the site are in poor condition, potentially undersize as has been in other parts of the North Sea (Wanless et al., 2004²⁸; Frederiksen et al, 2011²⁹). The conservation objective of this feature should be set to recover to ensure the benefits this site provides to the wider seas are restored.

Management Options:

Yes No

LINK strongly supports the statement made by Marine Scotland Science and SNH that a targeted sandeel fishery should not be permitted within the possible MPA.

LINK strongly supports the proposal to remove or avoid demersal hydraulic gear from this possible MPA.

Research is required to investigate the impact of demersal dredge on sandeel. The SNH advice states "Whilst the use of other types of dredges do cause sub-surface abrasion, given the high energy environments that sandeels live within, their use is not considered likely to affect the conservation objective for sandeels within the possible MPA". Given that sandeels require the presence of oxygen to survive in the sediment, and the oxic layer in the seabed sediment is rarely more than 8 cm deep in the North Sea (Lohse et al. 1996³⁰), we can assume sandeels exist in the

²⁷ Scottish Natural Heritage Biodiversity Indicator S005 – October 2013 <http://www.snh.gov.uk/docs/B424907.pdf>

²⁸ Wanless, S., Wright, P.J., Harris, M.P., Elston, D.A. 2004. Evidence for decrease in size of lesser sandeels *Ammodytes marinus* in a North Sea aggregation over a 30-yr period. *Marine Ecology Progress Series* 279:237–246

²⁹ Frederiksen, M., Elston, D.A., Edwards, M., Mann, A.D., Wanless, S. 2011. Mechanisms of long-term decline in size of lesser sandeels in the North Sea explored using a growth and phenology model. *Marine Ecology Progress Series* 432: 137–147

³⁰ Lohse, L., Epping, E., Helder, W., van Raaphorst, W. 1996. Oxygen porewater profiles in continental shelf sediments of the North Sea: turbulent versus molecular diffusion. *Marine Ecology Progress Series*. 145: 63-75

sediment within the top 8cm. Currie and Parry³¹ (1996) found that dredge penetrated to 6cm in sandy sediment and Hall-Spencer et al (1999)³² found that a significant change in suspended sediment following similar activity on sandy sediment lasted for 15 hours. Before this pressure can be dismissed in this site, robust evidence must be presented that shows that it is not impacting on the achievement of the conservation objective for sandeels.

Socioeconomic Assessment:

Yes No

RSPB Scotland operates a reserve on the Island of Mousa and at Sumburgh Head which act as attractions for local, national and international tourists that visit the site, specifically to see breeding seabirds. These seabirds are reliant on the health of the nearby prey stocks and as indicated above. Many are declining at Mousa and Sumburgh, as well as other colonies along the Shetland coastline.

Visitors to the island use a ferry named 'The Mousa Boat' which is owned and operated by three members of the local community. Puffincam, a webcam placed in a puffin burrow, was cited by many visitors as their reason for visiting Shetland (this included people from California, Sweden, Switzerland and Austria). RSPB works in partnership with Promote Shetland.

A decrease in sandeel spawning stock biomass induces a higher cannibalism for cod and whiting, leading in turn to a decrease in spawning stock biomass and yield for those predator species. This should be considered as part of the environmental baseline and a switch away from cannibalism should be considered as a benefit of designating this site.

The potential value of the Mousa to Boddam possible MPA to divers and sea anglers has been estimated at £5.3 to £11.2 million based on willingness-to-pay measures (Kenter *et al.*, 2013)³³. Kenter *et al.* also found important emotional and well-being benefits associated with the Mousa to Boddam possible MPA, with divers and anglers responding to questionnaire scoring >4 (out of a maximum score of 5) for therapeutic, spiritual and transformative wellbeing indicator values.

All of the above:

Yes No

Strategic Environmental Assessment: The Scottish Government has obligations to conserve black guillemot, Arctic tern, storm petrel and common seal in the Mousa SSSI. Significant declines have been experienced by a number of these species. Proper conservation of the sandeel stock within this MPA could assist in the

³¹ Currie, D. R., and Parry, G. D. 1996. Effects of scallop dredging on a soft sediment community: a large-scale experimental study. *Marine Ecology Progress Series*, 134:131–150.

³² Hall-Spencer, J. M., and Atkinson, R. J. A. 1999. *Upogebia deltaura* (Leach) (Crustacea, Thalassinidea) on maerl bed habitats in the Firth of Clyde. *Journal of the Marine Biological Association of the United Kingdom*, 79: 871–880

³³ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

achievement of obligations in the other areas.

Where present, kelp habitats ought also to be protected in this pMPA to support wider ecosystem function, including black guillemot feeding.

15. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *North-east Faroe Shetland Channel* possible Nature Conservation MPA?

Designation:

Yes No

LINK supports the designation of the North-east Faroe Shetland Channel possible Nature Conservation MPA for the protection of deep-sea sponge aggregations, offshore deep-sea muds, offshore subtidal sands and gravels, continental slope and a wide range of features of geological importance, including the Pilot Whale Diapirs - a series of deep-water mud volcanos which measure 2-3km across and rise more than 70m above the surrounding seafloor in places. The proposed boundary is supported although we have some concerns that only the lower section of continental slope is included, omitting the shelf break and upper slope (a region of high productivity and biodiversity).

We accept the conservation objective of 'conserve - feature condition uncertain'. However, we note that selection guideline 2d was not considered to be met for the protected biodiversity features in this site as sensitivity analyses concluded that there is a risk that features have been modified by human activity.

Management Options:

Yes No

Management options for protected features of uncertain condition must be evidence-based, account for the known vulnerability of the protected features to human activities and make appropriate use of the precautionary principle.

Towed/active gear should be removed from areas with deep-sea sponge aggregations and be reduced in areas with offshore deep-sea mud and offshore subtidal sands and gravels in order to ensure their protection. As part of the reduction in effort across the much larger areas with offshore deep-sea mud and offshore subtidal sands and gravels, it is important that some areas of those more broadscale habitat are also fully protected from towed/active gear in order for them to attain a full climax community, providing more productive larval sources for the surrounding extent of the habitat which will remain subject to some pressure from active gear. Static gear should be removed from all areas with deep sea sponge aggregations.

Licensed activities such as oil and gas exploration should not be consented where they overlap the very limited extent of deep-sea sponge aggregations, or where they are sufficiently in the vicinity of those aggregations to risk their conservation

status from down or up-current events. For offshore deep-sea muds, offshore subtidal sands and gravels, it is critical that licenses e.g. for oil and gas development, are only granted where the licensing authority are sufficiently satisfied that there is no significant risk of the activity hindering the conservation status of those more widespread features.

We are concerned that no management options are provided for the large-scale biodiversity search feature continental slope. Continental slope is included as a biodiversity feature based on the increased primary production and biodiversity and management options to protect this wider biodiversity should be included.

Socioeconomic Assessment: Yes No

The benefits of conserving deep sea biodiversity in an area of this degree of richness far outweigh the minimal and short lived benefits of trawling in such areas. We are concerned about the inappropriate assumptions made in the socioeconomic assessment when calculating the costs of designation.

All of the above: Yes No

This area is known to be used by white-sided dolphin, sperm whale, long-finned pilot whale and fin whale and these species should be included in the setting of management options and assessing the socioeconomic effects of designation and management. Furthermore, fin and sperm whales are mentioned specifically in all documents pertaining to this site for 'migration' purposes, yet no assessment has been made of the effects that industry (i.e. oil and gas) may have on them. Should the area be designated, there needs to be greater coherence between spatial and wider protection measures here regarding the interaction between the oil and gas industry and marine mammals.

16. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *North-west Orkney* possible Nature Conservation MPA?

Designation: Yes No

LINK supports the designation of the North-west Orkney possible Nature Conservation MPA for the protection of newly emergent sandeel larvae and a range of geological features formed by the action of tides and currents, including sand banks, sand wave fields and sediment wave fields. The JNCC advice has

already indicated that the area holds one of the largest sandeel spawning grounds in Scottish waters, and Proctor et al (1998)³⁴ show that many of the spawning fish are swept into the wider North Sea where they contribute to the ecosystem function and to the prey available to foraging seabirds. The JNCC advice states that “No other possible MPAs for which sandeels are being considered are thought to be of equal ecological value”, deciding to not designate this site would contradict this advice and the Scottish Government’s Marine Protected Areas and Sandeels position paper³⁵.

The conservation objective for the sandeel feature should be set to recover. No strategic sandeel monitoring has taken place in the area and consequently the status of the species is not known. As a result, the conservation objective for the site has been set as ‘conserve (feature condition uncertain)’. However, we suggest that seabird breeding success has been so poor that the sandeels – a prey species many species are particularly well adapted to preying – must be in poor condition. In the past 10 years kittiwake productivity has only once been above 50%, and has not reached this level at all for common guillemot and northern fulmar. Last year, of 325 surveyed kittiwake nests, only a single chick was fledged. This would not be the case if prey availability was good, and prey availability is acknowledged as the issue in SNH’s latest trend report³⁶.

The overall trend cannot be the product of a phenological mismatch (seabird breeding dates have varied throughout this 10 year window) so we infer that the sandeels in this site are in poor condition - potentially undersize as has been found in other parts of the North Sea (Wanless et al., 2004³⁷; Frederiksen et al, 2011³⁸). Because this site provides benefits to much of the North Sea, the conservation objective of this feature should be set to recover to ensure the benefits this site provides to the wider seas are restored.

Since the health of the sandeel population also relies upon the status of the sedimentary habitat in which they shelter, ‘offshore subtidal sands and gravels’ should also be added as a protected feature to this pMPA and the impact of towed/active gear on the seabed considered.

Management Options:

Yes No

LINK supports the statement made by Marine Scotland Science and SNH that a

³⁴ Proctor, R., Wright, P.J. and Everitt, A. 1998. Modelling the transport of larval sandeels on the north-west European shelf. Fisheries Oceanography 7(3-4): 347-354

³⁵ Marine Protected Areas and Sandeels (*Ammodytes marinus* & *A. tobianus*) Position paper. <http://www.scotland.gov.uk/Resource/0038/00389460.doc>

³⁶ Scottish Natural Heritage Biodiversity Indicator S005 – October 2013 <http://www.snh.gov.uk/docs/B424907.pdf>

³⁷ Wanless, S., Wright, P.J., Harris, M.P., Elston, D.A. 2004. Evidence for decrease in size of lesser sandeels *Ammodytes marinus* in a North Sea aggregation over a 30-yr period. Marine Ecology Progress Series 279:237–246

³⁸ Frederiksen, M., Elston, D.A., Edwards, M., Mann, A.D., Wanless, S. 2011. Mechanisms of long-term decline in size of lesser sandeels in the North Sea explored using a growth and phenology model. Marine Ecology Progress Series 432: 137–147

targeted sandeel fishery should not be permitted within the possible MPA.

The proposal currently suggests no additional management. This will mean that the site's designation will not have any impact, good or bad, on the health of the feature or the wider marine environment. This contradicts the ambition set out in the introduction to the Management Option Paper which states "The development of appropriate management will ensure the North-west Orkney possible MPA makes a genuine and long-lasting contribution to the protection of Scotland's marine environment" and also the duty in the Marine Act to protect and where appropriate enhance the health of the marine environment.

Socioeconomic Assessment:

Yes No

Tourism is an important sector of Orkney's economy. In 2000, 81,000 summer visitors were estimated to bring tourism revenues of £18 million to the islands. RSPB Scotland estimated that £1.3 million of this spending could be attributed to Orkney's birds and wildlife, supporting 36 FTE jobs on the islands (Rayment and Dickie, 2001³⁹). Orkney received an estimated 141,172 visitors in 2009⁴⁰ (the most recent figures available). The future of the tourism industry depends on the protection and management of Orkney's outstanding natural and historic environment, including the conservation of the marine – the Mull Head kittiwake colony no longer exists⁴¹.

A decrease in sandeel spawning stock biomass induces a higher cannibalism for cod and whiting, leading in turn to a decrease in spawning stock biomass and yield for those predator species. This should be considered as part of the environmental baseline and a switch away from cannibalism should be considered as a benefit of designating this site.

The potential value of the North-west Orkney possible MPA to divers and sea anglers has been estimated at £4.0 to £8.6 million based on willingness-to-pay measures (Kenter *et al.*, 2013)⁴². Kenter *et al.* also found important emotional and well-being benefits associated with the North-west Orkney possible MPA, with divers and anglers responding to questionnaire scoring >4 (out of a maximum score of 5) for engagement, therapeutic, spiritual, transformative and social wellbeing indicator values.

All of the above:

Yes No

³⁹ Rayment, M. & Dickie, I. (2001) Conservation Works.....for local economies in the UK. RSPB. Sandy, England.

⁴⁰ Orkney Economic Review 2010. http://www.orkney.gov.uk/Files/Business-and-Trade/Economic_Review_2010.pdf

⁴¹ https://www.rspb.org.uk/Images/watchedlikeneverbefore_tcm9-133081.pdf

⁴² Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

Strategic Environmental Assessment:

Spawning sandeels originating at this site are spread into the North Sea and the Moray Firth where some will become prey for a number of other species. Those that settle will provide their own spawn to settle and provide prey to species further 'downstream'. This site therefore has massive importance for the north sea ecosystem.

There are a number of national and international designations for seabirds along the Orkney coast which would benefit from the conservation of this site. Marwick Head, an RSPB reserve, is one example designated as an SSSI for seabirds.

17. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *North-west sea lochs and Summer Isles* possible Nature Conservation MPA?

Designation: Yes No

LINK supports the designation of the North-west sea lochs and Summer Isles possible Nature Conservation MPA for the protection of burrowed mud, circalittoral muddy sand communities, flame shell beds; kelp and seaweed communities on sublittoral sediments, maerl beds, maerl or coarse shell gravel with burrowing sea cucumbers and northern feather star aggregations on mixed substrata, and for geodiversity features – marine geomorphology of the Scottish shelf seabed, seabed fluid and gas seep, submarine mass movement, and quaternary of Scotland. The boundary is fully supported - as is the inclusion of the circalittoral muddy sand communities to ensure representation of broad-scale habitats in the network. This possible MPA contains an extraordinarily wide range of species and habitats at diverse scales, including the most northerly records of flame shell bed in UK waters and all three types of sea pen.

Seagrass beds should be added as a protected feature in the possible MPA. Although the distribution of *Zostera marina* in south-east Gruinard Bay is patchy, together with the beds in Loch Gairloch these are described as 'possibly the richest examples on the mainland coastline of northern Scotland from at least Loch Alsh to the Moray Firth.'⁴³. Additionally the seagrass records in Gruinard Bay were identified as having the potential to be protected through enhancing the existing

⁴³ Moore, C. G., Harries, D. B., Trigg, C., Porter, J. S. and Lyndon, A. R. (2011). The distribution of Priority Marine Features and MPA search features within the Ullapool Approaches: a broadscale validation survey. Scottish Natural Heritage Commissioned Report No. 422. http://www.snh.org.uk/pdfs/publications/commissioned_reports/422.pdf

Little Loch Broom and Gruinard Bay Fisheries restriction Area (CA59) with MPA designation⁴⁴.

We support the conservation objectives. We note that flame shell beds are not covered in the introduction to the management options paper – but from the consultation document are set to recover along with maerl beds.

Management Options:

Yes No

We support the exclusion mobile /active gear types and diver hydraulic methods from flame shell beds, maerl beds and maerl or coarse gravel with burrowing sea cucumbers. Management to reduce the pressure on maerl and burrowed mud by static gear is also supported. We support proposals to relocate the disposal site to an area of less sensitivity and further assessments to determine impact of the Loggie Bay anchorage and moorings in Loch Broom on flame shells beds.

In the absence of detailed information relating to the impacts of aquaculture on proposed protected features within an MPA it is imperative that the precautionary approach be applied. Discussions with finfish farming interests cannot be used as a proxy for specific, detailed information and where doubt exists management measures must be precautionary.

Socioeconomic Assessment:

Yes No

LINK acknowledges the enormously important contribution of the Gairloch and Wester Loch Ewe Community to bringing this possible MPA to the consultation stage. This contribution is an outstanding demonstration of the high value that local communities place on the integrity of their marine environment.

The involvement of the local community in this MPA proposal is an excellent example of the existence of the non-use value of MPAs that has been largely omitted from the economic assessments. It is possible that existing shell fisheries (hand-dived/creeling) and wildlife related tourism and sea angling will benefit from MPA designation. The wider economic potential of the region could benefit from improved marine nature conservation alongside terrestrial initiatives. The possible MPA lies adjacent to the 'Coigach Assynt Living Landscape' a unique community partnership project and one of the largest landscape restoration projects in Europe, which aims to bring environmental and economic benefits to the Coigach and Assynt region of north west Scotland.

Inclusion of seagrass beds as a protected feature in this MPA could have additional socioeconomic benefits as they are important spawning grounds for herring and nursery habitat for small scallops, lobsters and crabs and small cod.

The potential value of the North-west sea lochs and Summer Isles possible MPA to

⁴⁴ <http://www.snh.gov.uk/docs/B1000612.pdf>

divers and sea anglers has been estimated at £6.7 to £14.2 million based on willingness-to-pay measures (Kenter *et al.*, 2013)⁴⁵. Kenter *et al.* also found important emotional and well-being benefits associated with the North-west sea lochs and Summer Isles possible MPA, with divers and anglers responding to questionnaire scoring >4 (out of a maximum score of 5) for engagement, therapeutic, spiritual, transformative and social wellbeing indicator values.

All of the above: Yes No

Research is required to investigate the Interactions between active/mobile gear and northern featherstar aggregations, kelp and seaweed on sublittoral sediments and circalittoral muddy sand communities.

Harbour porpoise are known to use this site and under Guideline 1b of the selection criteria for PMFs on the OSPAR T&D list should be protected in the MPA and considered in the management options, as well as consideration of designation as part of the Natura 2000 SAC network.

18. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Noss Head* possible Nature Conservation MPA?

Designation: Yes No

LINK supports the designation of the Noss Head possible Nature Conservation MPA to protect horse mussel beds. We support the position of the boundary. We note that the extent is currently predictive and therefore, given the importance of this site as the largest known UK horse mussel bed, support the boundary providing a buffer around the predicted distribution.

The conservation objective of 'conserve' is supported.

Management Options: Yes No

Spoil dredge disposal and use of towed/active gears is incompatible with the health of the horse mussel beds and should be excluded from the possible MPA. Recent findings⁴⁶ of the damaging impact of towed/active gear on horse mussel beds in the Isle of Man provide further compelling evidence of the need to exclude such gear.

⁴⁵ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

⁴⁶ Cook R, Fariñas-Franco JM, Gell FR, Holt RHF, Holt T, et al. (2013) The Substantial First Impact of Bottom Fishing on Rare Biodiversity Hotspots: A Dilemma for Evidence-Based Conservation. PLoS ONE 8(8): e69904

Static gear activity should be limited, subject to further study, for both shellfish stock management and biodiversity (horse mussel bed) protection purposes.

Socioeconomic Assessment:

Yes No

The potential value of the Noss Head possible MPA to divers and anglers has been estimated at £4.7million to £9.9million based on willingness-to-pay measures (Kenter *et al.*, 2013)⁴⁷. Kenter *et al.* also found important emotional and well-being benefits associated with the Noss Head possible MPA, with divers and anglers responding to questionnaire scoring >4 (out of a maximum score of 5) for engagement, therapeutic and transformative wellbeing indicator values.

All of the above:

Yes No

LINK supports the designation of the Noss Head possible Nature Conservation MPA to protect horse mussel beds. . We also note the importance of horse mussel beds for wider ecosystem function, providing a range of important services such as drawing down and consolidating sediment to the seabed, sequestering carbon and providing a cryptic, biogenic habitat to support wider biodiversity, including juvenile commercial fish and shellfish species. Protection and management of this site provides an excellent opportunity to further study the important ecosystem function of horse mussel beds.

19. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Papa Westray* possible Nature Conservation MPA?

Designation:

Yes No

LINK supports the designation of the Papa Westray possible Nature Conservation MPA for the protection of black guillemot and geodiversity features – marine geomorphology of the Scottish shelf seabed. The proposed site holds a significant proportion of Scotland's black guillemot population and has been established based on scientific evidence endorsed by the LINK.

LINK supports the conservation objective 'conserve' for the above features.

Management Options:

Yes No

⁴⁷ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

We support the management option to remove set nets from, or avoid their introduction to, the site. Should a fishing practice thought to cause seabird bycatch or mortality commence, recommendations from the EU's Action Plan for reducing incidental catches of seabirds in fishing gears must be adopted (COM(2012) 665).

LINK supports the management measure to reduce or avoid the spread of mammalian predators and would strongly support the development of biosecurity plans for the terrestrial breeding habitat adjacent to each of the possible MPAs which include black guillemot as a protected feature. RSPB Scotland shall be developing biosecurity best practice guidelines and will welcome discussion regarding the application of these guidelines within colonies adjacent to possible MPAs.

LINK suggests that this MPA is considered in the parallel draft seaweed policy statement consultation, and particularly with regards to guidance developed for the harvest of wild seaweed.

Socioeconomic Assessment:

Yes No

The potential value of the Papa Westray possible MPA to divers and sea anglers has been estimated at £4.9 to £10.4 million based on willingness-to-pay measures (Kenter *et al.*, 2013)⁴⁸. Kenter *et al.* also found important emotional and well-being benefits associated with the Papa Westray possible MPA, with divers and anglers responding to questionnaire scoring >4 (out of a maximum score of 5) for engagement, spiritual and transformative wellbeing indicator values.

All of the above:

Yes No

Strategic Environmental Assessment

By establishing biosecurity on the islands, this site would also be contributing safeguards to populations of other seabirds breeding on Papa Westray. Most notably, it would also be providing protection to the population of Arctic tern and Arctic skua listed as designated features in the SPA. However, unlike black-guillemot, these two species are in decline and so for the biosecurity to offer additional benefits to these species, protection of at-sea feeding areas will also be required.

Where present, kelp habitats ought also to be protected in this pMPA to support wider ecosystem function, including black guillemot feeding.

⁴⁸ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

20. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Rosemary Bank Seamount* possible Nature Conservation MPA?

Designation: Yes No

LINK support the designation of the Rosemary Bank Seamount possible Nature Conservation MPA to protect deep-sea sponge aggregations, seamount communities and the Rosemary Bank Seamount and associated geodiversity features (including the seamount scour moat, sediment drifts, sediment drifts and the Rosemary Bank Seamount itself). The boundary and area of the Rosemary Bank Seamount possible MPA is fully supported on the basis of the information provided. The area represents only one of three seamount habitat ecosystems detected in Scotland's offshore water, and is reported to comprise a rich diversity of deep-sea sponge aggregations, cold-water corals and deep-water fish (e.g. orange roughy and blue ling PMFs). Such an area is likely to be highly productive, indicated by observations of migratory whales (sperm and pilot) in high numbers.

We accept the conservation objective of 'conserve - feature condition uncertain'. However, we note that selection guideline 2d was not considered to be met for the protected biodiversity features in this site as sensitivity analyses concluded that there is a risk that features have been modified by human activity.

Management Options: Yes No

Management options for protected features of uncertain condition must be evidence-based, account for the known vulnerability of the protected features to human activities and make appropriate use of the precautionary principle.

Although we acknowledge uncertainty in the evidence of the condition of the seamount habitat, the area is likely to be enhanced by restriction of damaging activities (i.e. otter trawling, set netting), and unsustainable harvesting from activities such as line fishing, creeling and potting. We further support and encourage prohibiting all forms of disturbance by mobile and static gear, including any future proposals for mining and exploration and new oil and gas facilities. This is particularly relevant with respect to Scotland's vision for a full shift to sustainable electricity production and reduction in carbon footprint. Limiting these activities will ensure the Rosemary Bank Seamount communities are fully protected from disturbance in perpetuity, and have opportunity for future enhancement.

We are concerned that no management options are provided for the large-scale biodiversity search feature seamounts. Seamounts are included as a biodiversity feature based on the increased primary production and biodiversity, and management options to protect this wider biodiversity must be included.

Socioeconomic Assessment:

Yes No

The socioeconomic impact data presented in the BRIA indicates a relatively modest displacement cost (less than £0.2 million pa GVA) in relation to the ecological and natural value gains offered by the possible MPA. The BRIA report indicates impacts to the fishing sector are likely be offset by opportunities in other locations. In addition, the relatively modest displacement costs by restricting damaging activities will be outweighed by the medium to long term benefit of protecting the ecological integrity of the possible MPA so it can continue to provide ecosystem services to Scotland's offshore waters.

All of the above:

Yes No

Representative seamount habitat ecosystems are essential for Scotland's MPA network due to their biological diversity and important ecosystem drivers. Seamount ecosystems are relatively uncommon worldwide. There are concerns on the negative impact of fishing on seamount ecosystems, with well-documented cases of stock decline, for example orange roughy decline due to overfishing in the vicinity of seamounts off Tasmania. Ecological damage is mainly caused by bottom trawling, and large demersal netting which exploit populations of fish that exhibit mass aggregation behaviour in the vicinity of seamount seascapes.

The documents for the possible MPA specifically describe the great importance this site has for marine mammals referring to 'The aggregations of blue whiting at the Rosemary Bank Seamount may be linked to the occurrence of large schools of marine mammals (Weir et al., 2001)⁴⁹. In fact, the greatest number of marine mammal species have been recorded at or near Rosemary Bank compared to any other Scottish seamount. For the cetaceans found in the vicinity of Scottish seamounts, the migration route through the Rockall Trough through the Faroe-Shetland Channel is considered important (Evans, 1997⁵⁰; Swift et al., 2002⁵¹; Macleod et al., 2003⁵²).' However they have not been considered either as features, or as additional PMFs, for assessment of socioeconomic impacts or of management options. This fact seems contrary to the ecological coherence aspects of the MPA project, and sperm and long-finned pilot whale PMFs should be considered in future assessment for this possible MPA, as well as in the management plan for the current MPA proposal.

⁴⁹ Weir, C.R., Pollock, C., Cronin, C., and Taylor, S. (2001). Cetaceans of the Atlantic Frontier, north and west of Scotland. *Continental Shelf Research*, 21, 1047–1071.

⁵⁰ Evans, P.G.H. (1997). Ecology of sperm whales (*Physeter macrocephalus*) in the Eastern North Atlantic, with special reference to sightings and strandings records from the British Isles. *Bulletin de l'Institut Royal des Sciences Naturelles de Belgique, Biologie*, 67 (Supplement), 37–46.

⁵¹ Swift, R.J., Hastie, G.D., Barton, T.R., Clark, C.W., Tasker, M.L., and Thompson, P.M. (2002). Studying the distribution and behaviour of cetaceans in the northeast Atlantic using passive acoustic techniques. Report for the Atlantic Frontier Environmental Network.

⁵² Macleod, K., Simmonds, M.P., and Murray, E. (2003). Summer distributions and relative abundance of cetacean populations off north-west Scotland. *Journal of the Marine Biological Association of the UK*, 83, 1187–1192.

21. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Small Isles* possible Nature Conservation MPA?

Designation: Yes No

LINK support the designation of the Small Isles possible Nature Conservation MPA to protect black guillemot, burrowed mud, circalittoral sand and mud communities, fan mussel aggregations, horse mussel beds, northern feather star aggregations on mixed substrata, northern sea fan and sponge communities, shelf deeps and white cluster anemones, and geodiversity features - quaternary of Scotland. The boundary and area of Small Isles possible MPA is fully supported. We also recommend that the future designation should include the Basking Shark Minke Whale as protected features. We note this possible MPA overlaps with two designated SPAs and management will need to refer to, and align with, the objectives of the SPAs.

We support the setting of conservation objectives for the protected features within the Small Isles possible MPA to 'conserve' for all features other than the fan mussel and northern feather star aggregations. The latter are both scarce in Scottish waters, and the fan mussel aggregation possibly unique pending any further aggregation find, and the opportunity should be taken to enhance these features. In particular, fan mussel status throughout Scotland's seas is plainly critical, since this is the only known aggregation, and the Small Isles population should therefore be enhanced in order to provide scope to assess the potential to re-seed the historic range of this fragile giant mollusc and ecosystem engineer. The status for both fan mussel aggregations and northern feather star aggregations should therefore be set to 'recover'.

Management Options: Yes No

We support and encourage designation of large zones in the Sound of Canna prohibiting all forms of disturbance by mobile and static fishing gear, anchors, moorings and expansion of new aquaculture ventures, to ensure sizable proportions of sensitive communities are fully protected from disturbance and have opportunity for future enhancement, particularly fan mussel aggregations, northern sea star, feather star, sponge communities, horse mussel and array of burrowed mud community PMFs. For the Sound of Canna, we also recommend that the licensed dredge spoil sites be rescinded.

In the absence of detailed information relating to the impacts of aquaculture on proposed protected features within an MPA it is imperative that the precautionary approach be applied. Discussions with finfish farming interests cannot be used as a proxy for specific, detailed information and where doubt exists management measures must be precautionary.

Socioeconomic Assessment: Yes No

LINK acknowledges the enormously important contribution of Small Isles Community Council to bringing this possible MPA to the consultation stage. This contribution is an outstanding demonstration of the high value that local communities place on the integrity of their marine environment.

The involvement of the local community in this MPA proposal is an excellent example of the existence of the non-use value of MPAs that has been largely omitted from the economic assessments. The socioeconomic impact data presented in the BRIA indicates the costs of designation (less than £0.42 million pa GVA) and restricting damaging activities will be outweighed by the medium to long term benefit of protecting the ecological integrity of the possible MPA so it can continue to provide ecosystem services to Scotland's inshore waters.

The potential value of the Small Isles possible MPA to divers and sea anglers has been estimated at £7.3 to £15.3 million based on willingness-to-pay measures (Kenter *et al.*, 2013)⁵³. Kenter *et al.* also found important emotional and well-being benefits associated with the Small Isles possible MPA, with interviewed local users and visitors scoring >4 (out of a maximum score of 5) for engagement, identity, spiritual, therapeutic, transformative and social wellbeing indicator.

All of the above:

Yes No

The Small Isles possible MPA is the only representative site of burrowed mud communities outside sea lochs on the west coast of Scotland, and considered by marine biodiversity specialists as the most significant relic deep water mud habitat in Scotland. Rich and unique mosaic of habitats associated in one area due to the setting of geological seascapes. Existing aquaculture ventures will need to ensure they are compliant with updated or revised Environmental Management Systems to ensure operations minimise local and diffuse cumulative impacts, particularly with respect to water quality, erosion, sedimentation and disease. Proposed future aquaculture ventures will need to be rigorously assessed for potential impact, particularly with respect to water quality, erosion, sedimentation and disease. It is likely that there will be little or no potential for installations throughout large parts of the area. There is limited information presented on wild fish populations in terms and possible contribution of the MPAs to fish populations and benefit to sustainable recreational fishing.

Further surveys in the peripheral deep basins adjacent to the Sound of Canna are needed in order to identify relict deep mud features and assess the potential for expansion of sensitive species such as the fan mussel.

As this is the best remaining area of deep burrowed mud in inshore waters it is essential to set up a monitoring programme that allows assessment of the

⁵³ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

expansion and recovery of the species and habitats in areas adjacent to the core zone

Harbour porpoise are known to use this site and under Guideline 1b of the selection criteria for PMFs on the OSPAR T&D list should be protected in the MPA and considered in the management options, as well as consideration of designation as part of the Natura 2000 SAC network.

22. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *South Arran* possible Nature Conservation MPA?

Designation: Yes No

LINK supports the designation of the South Arran possible Nature Conservation MPA to protect burrowed mud, herring spawning grounds, kelp and seaweed communities on sublittoral sediments, maerl beds, maerl or coarse shell gravel with burrowing sea cucumbers, ocean quahog, seagrass beds, shallow tide-swept coarse sands with burrowing bivalves. We support the boundary of the possible MPA. This MPA will make a valuable contribution to protecting habitats representative of the areas of the Clyde more exposed to prevailing wind, wave and tidal action.

LINK has some concerns over the conservation objectives for this site. Seagrass beds should be set to 'recover' as they will have likely suffered some damage from the existing anchorage in Whiting Bay. Remaining habitats should be set to 'recover' since the ecological status of the possible MPA is only 'moderate' as a result of morphological alteration from commercial fishing.

Management Options: Yes No

LINK believes that anchorages should be removed from seagrass beds in Whiting Bay; creel pressure should be reduced or limited on burrowed mud, maerl beds and seagrass beds, that hydraulic fishing methods be removed from the entire MPA, that use of towed/active gear should be removed from maerl beds, maerl or coarse shell gravel with burrowing sea cucumbers and seagrass beds and that targeted fishing for ocean quahog and use of towed/active gear in ocean quahog habitat should be excluded.

In order to ensure that burrowed mud features are protected and enhanced, towed/active gear should be removed from those features. The waters of South Arran are considered of 'moderate' ecological status⁵⁴ as a result of 'Morphological alterations' from commercial fishing⁵⁵. Since all the surrounding waters of Arran are

⁵⁴ http://www.environment.scotland.gov.uk/our_environment/water/water_body_classification.aspx

⁵⁵ <http://apps.sepa.org.uk/wbody/2011/200019.pdf>

also 'moderate' ecological status as result of commercial fishing altering the morphology of the seabed, removal of towed/active gear from South Arran MPA would contribute to both the possible MPA meeting its conservation objectives and the water body meeting Good Ecological Status. As the latter is currently 'moderate' it is also likely to rank similarly with regard to 'seafloor integrity' under the forthcoming Marine Strategy Framework Directive if this pressure is not removed.

In the absence of detailed information relating to the impacts of aquaculture on proposed protected features within an MPA it is imperative that the precautionary approach be applied. Discussions with finfish farming interests cannot be used as a proxy for specific, detailed information and where doubt exists management measures must be precautionary.

Socioeconomic Assessment:

Yes No

LINK acknowledges the enormously important contribution of the Community of Arran Seabed Trust to bringing this possible MPA to the consultation stage. This contribution is an outstanding demonstration of the high value that local communities place on the integrity of their marine environment.

The involvement of the local community in this MPA proposal is an excellent example of the existence of the non-use value of MPAs that has been largely omitted from the economic assessments. The potential value of the South Arran possible MPA to divers and anglers has been estimated at £8.3million to £17.5million based on willingness-to-pay measures (Kenter *et al.*, 2013)⁵⁶. Kenter *et al.* also found important emotional and well-being benefits associated with the South Arran possible MPA, with divers and anglers responding to questionnaire scoring >4 (out of a maximum score of 5) for engagement, therapeutic, spiritual, transformative and social wellbeing indicator values.

All of the above:

Yes No

Note that the South Arran possible MPA contains the Lamlash Bay marine algae Important Plant Area. Some of the seabed of Lamlash Bay consists of soft substrata including patches of seagrass (*Zostera* spp).. There are also the remains of a deep maerl bed, which although has been extensively damaged by scallop dredging since 1970, still has significant area of maerl. More recently, previously undiscovered patches of maerl were found in excellent condition. Threatened or rare species – *Lithothamnion corallioides*.

⁵⁶ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

23. Do you have any comments on the case for designation, management options and socioeconomic assessment for *The Barra Fan and Hebrides Terrace Seamount* possible Nature Conservation MPA?

Designation: Yes No

LINK supports the designation of the Barra Fan and Hebrides Terrace Seamount possible Nature Conservation MPA to protect burrowed mud, offshore subtidal sands and gravels, offshore deep-sea muds, an area of the Hebridean continental slope, the Hebrides Terrace Seamount and associated features, including orange roughy and seamount communities and geodiversity features representative of the The Barra Fan and Peaches Slide Complex Key Geodiversity Areas. The boundary and area of the possible MPA is fully supported on the basis of the information provided. It should be noted that the possible MPA lies right on the boundary between the Scottish and Irish marine areas. The Hebrides Terrace Seamount, while mostly in Scottish waters, straddles the boundary.

The seamount rises from the seafloor to a height of 1 km, and supports a diverse range of sea life, including cold-water corals, deep sea sponges, and fish species such as orange roughy. The seamount is thought to be significant to the health of Scotland's seas due to its effect on movement of underwater currents, which bring food to the area. The resulting rich diversity supports many fish species, which in turn attract larger marine animals, such as sharks and cetaceans.

We accept the conservation objective of 'conserve - feature condition uncertain'. However, we note that selection guideline 2d was not considered to be met for the protected biodiversity features in this site as sensitivity analyses concluded that there is a risk that features have been modified by human activity.

Management Options: Yes No

Management options for protected features of uncertain condition must be evidence-based, account for the known vulnerability of the protected features to human activities and make appropriate use of the precautionary principle.

Although we acknowledge uncertainty in the evidence of the condition of the seamount habitat, the area is likely to be enhanced by restriction of damaging activities by mobile and static gear (e.g. otter trawling,). We also advocate that these activities do impact on PMFs such as burrowed mud, offshore deep sea muds, and offshore subtidal sands and gravels and their constituent species.

We are concerned that no management options are provided for the large-scale biodiversity search features seamounts and continental slope. Seamounts and continental slope are included as a biodiversity features based on the increased primary production and biodiversity, management options to protect this wider biodiversity should be included.

There is limited attention in the management options document concerning pelagic

trawling and purse seining activity, and as such no informed assessment can be made regarding sustainable harvesting of associated pelagic and demersal fish species. We further support and encourage designation that prohibits all forms of future disturbance by mining and exploration, and new oil and gas facilities, particularly with respect to Scotland's vision for a full shift to sustainable electricity production and reduction in carbon footprint.

Limiting these activities will to ensure the Barra Fan & Hebridean Terrace Seamount communities are fully protected from disturbance in perpetuity, and have opportunity for future enhancement. For any proposed licensed activities, they must be managed through a stringent consenting process, as directed by the Marine and Coastal Access Act and Marine (Scotland) Act. However, we emphasise that the expansion of licence activities in possible MPAs should be avoided if alternative sites can be located.

It is important that management of this possible MPA takes account of its position on the Scottish/Irish waters boundary. Every effort should be made to make sure that management of activities, particularly over the seamount, are consistent across the boundary.

Socioeconomic Assessment:

Yes No

The socioeconomic impact data in the BRIA report indicates the relatively modest, worst case, costs of designation for commercial fisheries as £0.3 - £0.4 million pa. As indicated in the comments under Management Options Report, it is difficult to make informed comment on the contribution of the Barra Fan & Hebrides Terrace Seamount possible MPA to pelagic and demersal fish stocks, and associated fishing activity options. Relatively modest displacement costs associated with fisheries with habitat damaging activities that employ bottom mobile gear will be outweighed by the medium to long term benefit of protecting the ecological integrity of the possible MPA so it can continue to provide ecosystem services to Scotland's offshore waters. The BRIA report indicates expected costs of undertaking stringent environmental impact assessment procedures for oil and gas sector proposals may range from £1.6 - £5.8 million. We argue that these projected costs would be absorbed by the economic value and wealth of this industry, with likely alternative sites and opportunities being accessible in the short to medium term.

All of the above:

Yes No

Representative seamount habitat ecosystems are essential for Scotland's MPA network due to their biological diversity and important ecosystem drivers. Seamount ecosystems are relatively uncommon worldwide. There are concerns with the negative impact of fishing on seamount ecosystems, with well-documented cases of stock decline, for example orange roughy decline due to overfishing in the vicinity of seamounts off Tasmania. Ecological damage is mainly caused by bottom trawling, and large demersal netting which exploit populations of fish that exhibit mass aggregation behaviour in the vicinity of seamount seascapes.

Sperm whales are known to use this region and should be considered in the management options.

24. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Turbot Bank* possible Nature Conservation MPA?

Designation:

Yes No

LINK supports the designation of the Turbot Bank possible Nature Conservation MPA to protect sandeels. The JNCC advice indicates that the spawning sandeels from the site may be dispersed widely throughout the North Sea, where they will provide a key component of the prey availability for species including seabirds.

The site includes a population of sandeels outside of the North-east Sandeel Closure (CA1) which would benefit from the additional protection provided by this MPA.

LINK also endorses the importance of this area for offshore subtidal sands and gravels, and welcomes the addition of this protected feature. However, it must not be added here as an alternative to the Firth of Forth Banks Complex which is fundamentally required for the utility and coherence of this network.

The conservation objective for the sandeel feature should be set to recover. No strategic sandeel monitoring has taken place in the area and consequently the status of the species is not known. However, group-0 sandeels have been shown to be undersize in other parts of the North Sea (Wanless et al., 2004⁵⁷; Frederiksen et al, 2011⁵⁸) and so they should be set to recover on a precautionary basis.

RSPB Scotland has collected tracking data for seabird species breeding in North East Scotland. These data show Turbot Bank is visited by black-legged kittiwake from Orkney, Fowlsheugh and Bullers of Buchan, razorbill and common guillemot from Fair Isle, and northern fulmar from Orkney and Whinnyfold. It is likely that other species and birds from other colonies are also using the site.

Management Options:

Yes No

⁵⁷ Wanless, S., Wright, P.J., Harris, M.P., Elston, D.A. 2004. Evidence for decrease in size of lesser sandeels *Ammodytes marinus* in a North Sea aggregation over a 30-yr period. *Marine Ecology Progress Series* 279:237–246

⁵⁸ Frederiksen, M., Elston, D.A., Edwards, M., Mann, A.D., Wanless, S. 2011. Mechanisms of long-term decline in size of lesser sandeels in the North Sea explored using a growth and phenology model. *Marine Ecology Progress Series* 432: 137–147

LINK supports the statement made by Marine Scotland Science and SNH that a targeted sandeel fishery should not be permitted within the possible MPA. The management option paper for Mousa to Boddam, which has also been proposed for sandeel indicates that dredges cause a sub-surface abrasion pressure, and LINK suggests this pressure needs to be further understood to assist in the conservation of sandeel within these possible MPA. The Turbot Bank management option paper does not discuss bottom impact on sandeels despite the fact that dredge takes place within the site. Before this pressure can be dismissed, robust evidence must be presented that shows that it is not impacting on the achievement of the conservation objective for sandeels.

LINK supports the proposal to remove/avoid pressures associated with oil and gas activities.

Were offshore subtidal sands and gravels to be added as a protected feature, LINK would support the management options that reduce the risk of not achieving its conservation objective to the lowest possible level.

Socioeconomic Assessment:

Yes No

A decrease in sandeel spawning stock biomass induces a higher cannibalism for cod and whiting, leading in turn to a decrease in spawning stock biomass and yield for those predator species. This should be considered as part of the environmental baseline and a switch away from cannibalism should be considered as a benefit of designating this site.

The potential value of the Turbot Bank possible MPA to divers and sea anglers has been estimated at £4.7 to £10.0million based on willingness-to-pay measures (Kenter *et al.*, 2013)⁵⁹. Kenter *et al.* also found important emotional and well-being benefits associated with the Turbot Bank possible MPA, with divers and anglers responding to questionnaire scoring >4 (out of a maximum score of 5) for transformative wellbeing indicator values.

All of the above:

Yes No

Strategic Environmental Assessment:

In practice, the proposed management of this site may mitigate the impact of future oil and gas activity but will not change the current human pressure on the site or its

⁵⁹ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

constituent features. The Strategic Environmental Assessment is based on the premise that “The possible MPAs will have benefits for biodiversity, flora and fauna, this is their key purpose, with a focus on specific features and the benefit of designation will primarily accrue to these features”. The proposed management options for this possible MPA will not have a benefit on sandeels and so the SEA needs reviewing.

Were the sandeels to be recovered, or greater protection of the offshore subtidal sands and gravels established, it is likely that the site will benefit the wider North-sea, through the provision of sandeel larvae, and contribute to attaining the obligations under the Birds Directive for the seabird colonies – using the site for foraging.

25. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Upper Loch Fyne and Loch Goil* possible Nature Conservation MPA?

Designation: Yes No

LINK supports the designation of the Upper Loch Fyne and Loch Goil possible Nature Conservation MPA to protect burrowed mud, flame shell beds, horse mussel beds, ocean quahog, sublittoral mud and mixed sediment communities. The presence of fireworks anemones (*Pachycerianthus multiplacatus*) in Loch Goil is confirmed and needs to be added to the protected features. Loch Goil is also the only known location where the Arctic relic seasquirt *Styela gelatinosa* has been recorded and merits recognition as a feature that would get consequential protection. Both sea lochs also have excellent examples of sheltered rock reefs which merit listing as protected features (in line with the general point regarding representation of EUNIS Level 3 habitats in answer to question 35).

LINK supports the conservation objective of ‘recover’ for flame shell beds. Conservation objectives for all other features, listed as conserve (feature condition uncertain) should also be set to recover following a precautionary approach.

Management Options: Yes No

In the absence of detailed information relating to the impacts of aquaculture on proposed protected features within an MPA it is imperative that the precautionary approach be applied. Discussions with finfish farming interests cannot be used as a proxy for specific, detailed information and where doubt exists management measures must be precautionary.

Moorings – the Fireworks anemones in upper Loch Goil that are near the moorings were recently surveyed during a MCS Seasearch survey. They don’t appear impacted but we would recommend no new moorings deeper than 15m at the head of the loch (to allow a buffer zone from where the anemones start at 15m) or at the

very least robust EIAs that locate anemones before positioning mooring blocks away from them.

Fishing – we are concerned about the resolution of sensitivity mapping for burrowed mud since it doesn't resolve the presence of fireworks anemones or mud volcano worms which are highly sensitive to mobile gear. Burrowed mud should therefore be rated as high sensitivity following the precautionary approach assuming presence of fireworks anemones (unless fireworks anemones have been proved not to be present). So we disagree with the advice to only consider reducing or limiting pressure of towed gear in areas with confirmed mud volcano worms and fireworks anemones.

We support the removal of fishing pressure from flame shell beds and horse mussel beds, but also from ocean quahog areas and muds which may contain fireworks anemones. Simpler in management terms would be to exclude mobile gear from the MPA.

Static gear – should remove this pressure from flame shell beds, horse mussel beds and fireworks anemone aggregations.

Fishing – diver collection. This should be 'remove pressure' since advice is to 'exclude' certain activities.

Socioeconomic Assessment:

Yes No

LINK acknowledges the important contribution of the Marine Conservation Society in bringing this possible MPA to the consultation stage.

This contribution is an excellent demonstration of the high value that communities, both of place and of interest, put on the integrity of the marine environment. It also points to the existence of the non-use value of MPAs that has been largely omitted from the economic assessments.

The potential value of the Upper Loch Fyne and Loch Goil possible MPA to divers and sea anglers has been estimated at £7.7 to £16.1 million based on willingness-to-pay measures (Kenter *et al.*, 2013)⁶⁰. Kenter *et al.* also found important emotional and well-being benefits associated with the Upper Loch Fyne and Loch Goil possible MPA, with divers and anglers responding to questionnaire scoring >4 (out of a maximum score of 5) for engagement, therapeutic, spiritual, transformative and social wellbeing indicator values.

All of the above:

Yes No

⁶⁰ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

Comments

26. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *West Shetland Shelf (formerly Windsock)* possible Nature Conservation MPA?

Designation:

Yes No

LINK supports the designation of the West Shetland Shelf (formerly Windsock) possible Nature Conservation MPA to protect a wide variety of offshore subtidal sand and gravel habitats. The boundary and area are supported based on the advice provided that the area represents a rich mosaic of offshore sand and gravel biotope habitats, and a resident constituency of diverse marine fauna, at the northern extent of their range on the continental shelf in Scotland's seas. This possible MPA will provide vital protection for nursery grounds for a whole range of fish species associated with sand and gravel beds, such as flatfish, bass, skates, and rays. A number of the species are recognised as PMF for conservation protection, including the commercial cod (*Gadus morhua*) which has been protected from fishing in the overlapping Windstock Fisheries area since 2001.

We accept the conservation objective of 'conserve - feature condition uncertain'. However, we note that selection guideline 2d was not considered to be met for the protected biodiversity features in this site as sensitivity analyses concluded that there is a risk that features have been modified by human activity.

Management Options:

Yes No

Management options for protected features of uncertain condition must be evidence-based, account for the known vulnerability of the protected features to human activities and make appropriate use of the precautionary principle.

We note that the possible MPA overlaps with the current Windsock Fisheries Area which is managed for the recovery of the commercial cod industry which effectively prohibits the use of bottom-contact mobile fishing gear, but static fishing gear (e.g. creels and pots) are still in use. We recommend that the prohibition of this fishing gear be maintained, and designated through a marine conservation order. Furthermore, we encourage designation of zones within the possible MPA prohibiting static gear to ensure sizable proportions of marine fauna have reduced pressure from harvesting and have opportunity for future enhancement. We further support and encourage designation prohibiting all forms of possible future disturbance by mining and exploration, and new oil and gas facilities, particularly with respect to Scotland's vision for a full shift to sustainable energy and reduction in carbon footprint.

Limiting these activities will ensure the West Shetland Shelf communities are fully protected from disturbance in perpetuity, and have opportunity for future

enhancement. For any proposed licensed activities, they must be managed through a stringent consenting process, as directed by the Marine and Coastal Access Act and Marine (Scotland) Act. However, we emphasise that the expansion of licence activities in possible MPAs should be avoided if alternative sites can be located.

Socioeconomic Assessment: Yes No

The socioeconomic impact data presented in the BRIA indicates relatively small costs of designation (less than £0.2 million pa) compared to the ecological and natural value gains offered by the possible MPA. It is noted that as fisheries closures were implemented in the Woodstock Fisheries Area in 2001, so there would be no foreseeable additional displacement costs with the designation of this possible MPA. The BRIA report indicates minimal impacts are only expected to costs of undertaking additional stringent environmental impact assessment procedures for proposed oil and gas sector proposals. In any case, the relative cost of undertaking industry EIA reports and consents would be absorbed by the economic value and wealth of this industry, with likely alternative sites and opportunities being accessible in the short to medium term. Overall, the relatively small displacement costs of restricting damaging activities will be outweighed by the medium to long term benefit of protecting the ecological integrity of the possible MPA so it can continue to provide ecosystem services to Scotland's offshore waters.

All of the above: Yes No

All forms of industry licence proposals, decommissioning and maintenance must be regulated under the direction of Marine Scotland (or equivalent responsible public authority) and meet best practice EIA protocols and consents, supported by transparent monitoring and reporting requirements. We do not support licenced activities of any nature within MPAs that are undertaken by voluntary industry standards.

27. Do you have any comments on the case for designation, management options and socioeconomic assessment for the *Wyre and Rousay Sounds* possible Nature Conservation MPA?

Designation: Yes No

LINK supports the designation of the Wyre and Rousay Sounds possible Nature Conservation MPA to protect kelp and seaweed communities on sublittoral sediment and maerl beds, and geodiversity feature marine geomorphology of the Scottish shelf seabed. The boundary is fully supported. The proposed MPA contains excellent examples of maerl in an area of the largest discontinuous extent of the feature anywhere in the UK, in largely unmodified condition forming an

important habitat mosaic with kelp and seaweed communities.

The conservation objective 'conserve' for all features is supported.

Management Options:

Yes No

We note that the distribution of features within the site limits the ability to apply zoned management. We support the prohibition of maerl extraction from the site and the exclusion of mobile/active fishing gear within the entirety of the site. Careful monitoring of the static gear and hand-derived bivalve fishery will be required to ensure no impact on conservation objectives.

In the absence of detailed information relating to the impacts of aquaculture on proposed protected features within an MPA it is imperative that the precautionary approach be applied. Discussions with finfish farming interests cannot be used as a proxy for specific, detailed information and where doubt exists management measures must be precautionary.

Socioeconomic Assessment:

Yes No

It is possible that the existing static gear and dived fisheries, providing they are sustainably managed, will benefit from a reduction in mobile gear which impacts on benthic communities.

The potential value of the Wyre and Rousay Sounds possible MPA to divers and sea anglers has been estimated at £5.0 to £10.6 million based on willingness-to-pay measures (Kenter *et al.*, 2013)⁶¹. Kenter *et al.* also found important emotional and well-being benefits associated with the Wyre and Rousay Sounds possible MPA, with divers and anglers responding to questionnaire scoring >4 (out of a maximum score of 5) for engagement, spiritual and transformative wellbeing indicator values.

All of the above:

Yes No

The possible MPA provides an opportunity to protect excellent examples of important features in this region and an opportunity to apply management measures across the whole site.

We also note that this pMPA is adjacent to area TN2 tidal scoping area of search. Should tidal energy development be licensed in TN2, it is imperative that any possible impact on changes to the tidal regime affecting the excellent quality

⁶¹ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

habitats in Wyre and Rousay Sound should be fully considered.

Choices to represent features in the MPA Network

28. Recognising the scientific advice from JNCC included alternatives for representing offshore subtidal sands and gravels, ocean quahog and shelf banks and mounds in the Southern North Sea, do you have a preference or comments on the following combinations to represent these features, bearing in mind Turbot Bank will need to be designated to represent sandeel in this region:

- Firth of Forth Banks Complex
- Turbot bank and Norwegian Boundary Sedimentary Plain
- Or Firth of Forth Banks Complex, Turbot bank and Norwegian Boundary Sedimentary Plain

LINK supports the designation of the Firth of Forth Banks Complex possible Nature Conservation MPA.

Firth of Forth Banks Complex must be designated. Its alternatives are of a lesser ecological value and it is one of the most important areas on the Scottish east coast, supporting the marine ecosystem function through its importance for and provision of sandeels⁶².

We draw attention to the JNCC advice, repeated in the management options paper, that the two 'science-based' alternatives "do not make equivalent contributions to the network to that made by the Firth of Forth Banks Complex possible MPA" and that "the Firth of Forth Banks Complex is JNCC's preferred possible MPA to go forward for designation". We strongly support this position. LINK would therefore consider designation of any alternative as a failure to follow the scientific advice provided by JNCC and a contradiction with the ministerial decision to do exactly that.

LINK supports this designation on the basis of the advice provided showing that this possible MPA represents a more diverse habitat mosaic and wider range of constituent marine species compared to the alternative possible MPA options presented. Also that the geographic location, and local physico-chemical drivers of the Firth of Forth Banks Complex have also led to the evolution of an ecosystem that is not replicated by the alternative possible MPA options.

However, LINK also notes that the possible MPA contains a significant population of the sandeel PMF, and that this feature plays an extremely important role in the North Sea ecosystem, and particularly for piscivorous predators on the east coast which rely on this species, such as grey seal⁶³, harbour seal^{64 65}, harbour

⁶² Greenstreet S. P. R., Armstrong E., Mosegaard H., Jensen H., Gibb I. M., Fraser H. M., Scott B., et al. Variation in the abundance of sandeels *Ammodytes marinus* off southeast Scotland: an evaluation of area-closure fisheries management and stock abundance assessment methods. *ICES Journal of Marine Science* 2006;63:1530-1550

⁶³ Hammond, P. S., Hall, A. J., and Prime, J. H. 1994. The diet of grey seals around Orkney and other island and mainland sites in northeastern Scotland. *Journal of Applied Ecology*, 31:340-350.

porpoise⁶⁶, common guillemot, razorbill, black-legged kittiwake^{67 68}, puffin⁶⁹ and northern gannet⁷⁰. For this reason we strongly urge Scottish Government to add sandeels as a protected feature within this site. It has previously been suggested that this is not necessary because the pMPA falls within the North-east Sandeel Closure (CA1). However, this is only protecting sandeels from direct fishing pressure. Being listed as a protected feature would ensure appropriate assessment is made for any activity undertaken in the area, and given that research has already shown sandeels in this area are undersized^{71,72}, the opportunity provided by this MPA to recover the species and the ecosystem must not be overlooked and as such sandeels must be added as a protected feature. Such an amendment to the designation order will allow appropriate and adequate assessment of the impacts to the local and regional population of this feature as well as any indirect consequences to ensure they are avoided and minimised.

LINK also fully support the designation of the ocean quahog aggregations and offshore subtidal sands and gravels search features.

29. Do you have any comments on the case for designation, management options and socioeconomic assessments for the preference you have indicated in the question above, regarding alternatives for representing offshore subtidal sands and gravels, ocean quahog and shelf banks and mounds in the Southern North Sea?

Yes No

We support the conservation objectives for the protected features within the Firth of Forth Banks Complex possible MPA of 'conserve' for all features. We further support and encourage designation of large zones prohibiting those forms of disturbance by mobile and static gear that could have a significant impact on the conservation objectives to ensure sizable proportions of sensitive communities are

⁶⁴ Pierce, G. J., Thompsom, P. M., Miller, A., Diack, J. S. W., Miller, D., and Boyle, P. R. 1991. Seasonal variation in the diet of common seals (*Phoca vitulina*) in the Moray Firth area of Scotland. *Journal of Zoology*, 223: 641-646.

⁶⁵ Tollit, D. J., and Thompson, P. M. 1996. Seasonal and between year variations in the diet of harbour seals in the Moray Firth, Scotland. *Canadian Journal of Zoology*, 74: 1110-1121.

⁶⁶ Santos, M. B., and Pierce, G. J. 2003. The diet of harbour porpoise (*Phocoena phocoena*) in the northeast Atlantic. *Oceanography and Marine Biology*, 41: 355-390.

⁶⁷ Tasker, M. L., and Furness, R. W. 1996. Estimation of food consumption of seabirds in the North Sea. ICES Cooperative Research Report, 216: 6-42.

⁶⁸ Furness, R. W., and Tasker, M. L. 2000. Seabird-fishery interactions: quantifying the sensitivity of seabirds to reductions in sandeel abundance, and identification of key areas for sensitive seabirds in the North Sea. *Marine Ecology Progress Series*, 202: 253-264.

⁶⁹ Wanless, S., Harris, M. P., and Greenstreet, S. P. R. 1998. Summer sandeel consumption by seabirds breeding in the Firth of Forth, southeast Scotland. *ICES Journal of Marine Science*, 55: 1141-1151.

⁷⁰ Wakefield, E.D., Bodey, T.W., Bearhop, S., Blackburn, J., Colhoun, K., Davies, R., Dwyer, R.G., Green, J., Gremillet, D., Jackson, A.L., Jessopp, M.J., Kane, A., Langston, R.H.W., Lescoel, A., Murray, S., Le Nuz, M., Patrick, S.C., Peron, C., Soanes, L., Wanless, S., Votier, S.C., Hamer, K.C. 2013. Space Partitioning Without Territoriality in Gannets *Science* 1-5

⁷¹ Wanless, S., Wright, P.J., Harris, M.P., Elston, D.A. 2004. Evidence for decrease in size of lesser sandeels *Ammodytes marinus* in a North Sea aggregation over a 30-yr period. *Marine Ecology Progress Series* 279:237-246

⁷² Frederiksen, M., Elston, D.A., Edwards, M., Mann, A.D., Wanless, S. 2011. Mechanisms of long-term decline in size of lesser sandeels in the North Sea explored using a growth and phenology model. *Marine Ecology Progress Series* 432: 137-147

fully protected from disturbance and have opportunity for future enhancement. Proposed offshore renewable licences for wind farm construction must be undertaken on basis of a stringent and transparent EIA, HRA and appropriate consent conditions. Currently, there is minimal information on the impact of wind farms on this ecosystem type and its constituent features. Aside from the impact to benthic PMFs due to the ecological footprint of these built assets, aerial turbine blades may impact populations of seabird species such as gannets.

The area is also important for seals, which have been locally in decline for the last 10 years. Minke whales, harbour porpoises and dolphins are also users of the area. It is recommended that protected features to be added to this possible MPA include seals, cetaceans and seabirds. A further recommendation for the addition of minke whale protected feature may be made pending forthcoming data.

Before discussing the socioeconomic data we would like to state that the Guidelines for designation of MPAs state that socioeconomics should only be used to select between 'ecologically equivalent' alternatives. We believe the JNCC advice clearly states that the alternatives are not ecologically equivalent. So socioeconomics should not influence the designation decision. However, we acknowledge that socioeconomics remain important when evaluating the management options which best meet the conservation objectives.

The socioeconomic impact data presented in the BRIA indicates that cost of managing damaging commercial fisheries (£0.28 - £0.33 million pa GVA). The Firth of Forth Banks Complex possible MPA option presents a marginally higher cost for commercial fisheries than the Turbot Bank and Norwegian Boundary Sediment Plain possible MPA option, but lower costs to the oil and gas sector. However the Norwegian Boundary Sediment Plain is not comparable in ecological significance to the Firth of Forth Banks Complex.

Further, the socioeconomic impact data presented in the BRIA forecasts a £43 million possible additional cost for future wind farm development in the Firth of Forth Banks Complex possible MPA under the highest scenario. This cost is due to the possible need for 'graded scour protection' around installations. These figures appear to have been provided in an informal way, with no supporting evidence, by Seagreen energy who have submitted applications for consent to construct two offshore wind farms in the Firth of Forth Offshore Wind Zone. We strongly contend that Seagreen energy represent a vested interest with an incentive to overestimate the possible costs, and as such these figures should be rejected.

The potential value of the Firth of Forth Banks Complex possible MPA to divers and sea anglers has been estimated at £5.2 to £11.1 million based on willingness-to-pay measures (Kenter *et al.*, 2013)⁷³. Kenter *et al.* also found important emotional and well-being benefits associated with the Firth of Forth Banks Complex possible MPA, with divers and anglers responding to questionnaire scoring >4 (out of a maximum score of 5) for transformative and social wellbeing

⁷³ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

indicator values.

The Firth of Forth Banks Complex possible MPA is the preferred option and is the only fully supported option for designation as a MPA. Proposed wind farm development areas/sites should be explored outside the possible MPA boundaries to minimise impact to the possible MPAs unique and irreplaceable PMFs and closed ecosystem processes. The EIA/SEA/HRA must meet the conservation objectives of the possible MPA. This will be determined by the construction and technology options presented by the developers, it is not possible for the community to make informed comment without this information at this time. A position of negotiation and options analysis for the developers is welcome.

30. Recognising the scientific advice from JNCC included alternatives for representing the burrowed mud feature in the Fladens, do you have a preference or comments on the following combinations to represent these features, bearing in mind the part of Central Fladen (known as Central Fladen (Core)) containing tall seapen (*Funiculina quadrangularis*) will need to be designated to represent tall seapen in this region:

Central Fladen possible MPA only

The tall sea-pen component of Central Fladen, plus Western Fladen

Or the tall sea-pen component of Central Fladen, plus South-East Fladen.

LINK supports the designation of the Central Fladen (core) and Central Fladen possible Nature Conservation MPA is fully supported. The boundary of this possible MPA offers the best opportunity for the protection, and possible expansion, of the Burrowed mud – tall seapen (*Funiculina quadrangularis*) PMF population. The adjacent Central Fladen option exhibiting the burrowed mud – seapens and burrowing megafauna PMF, if adequately protected, offers the best opportunity for buffering and possible enhancement of the tall seapen species.

31. Do you have any comments on the case for designation, management options and socioeconomic assessments for the preference you have indicated in the question above, regarding alternatives for representing the burrowed mud feature in the Fladens?

Yes No

We support conservation objectives for the protected features within the Central Fladen possible MPA to 'conserve' for all features. Since the tall sea pen population is likely a remnant population, protected by North Sea oil and gas infrastructure where there is limited operation of towed/active gear, we would suggest that the conservation objective for tall sea pens to be set to 'recover'. We

further support and encourage designation of large zones prohibiting all forms of disturbance by mobile and static gear to ensure sizable proportions of sensitive communities are fully protected from disturbance and have opportunity for future enhancement. This possible MPA, if highly protected, offers opportunity to benchmark against and compare gear activity and catch effort in the adjacent option areas (western Fladen and South-East Fladen) which we recommend be designated as Demonstration and Research MPAs. We further support and encourage designation prohibiting all forms of possible future disturbance by mining and exploration, and new oil and gas facilities, particularly with respect to Scotland's vision for a full shift to sustainable energy and reduction in carbon footprint. Limiting these activities will ensure the Central Fladen and Central Fladen (core) MPA search features are fully protected from disturbance, and have opportunity for future enhancement. For any proposed licensed activities, they must be managed through a stringent consenting process, as directed by the Marine and Coastal Access Act 2009 and Marine (Scotland) Act 2010. However, we emphasise that the expansion of licence activities in possible MPAs should be avoided if alternative sites can be located.

The socioeconomic impact data presented in the BRIA indicates that cost of managing damaging commercial fisheries and oil & gas sector activities is lower in the Central Fladen - Central Fladen (core) option (£5 - £12 million – Present value of total cost over 20-year period) compared to the Central Fladen (core) - Western Fladen option (£8 - £17 million) with a slightly higher cost estimated when compared to the Central Fladen (core) - Southeast Fladen option (£3 - £8 million). The majority of the differences due to the estimated increased oil and gas industry costs. We consider the socioeconomic impact cost of designation for the Central Fladen - Central Fladen (core) to be reasonable in comparison to the options presented, and is likely to provide a beneficial conservation planning design. It is also noted that the provided map of trawling effort (Map 4, Page 12) indicates appreciably lower fishing activity in the Central Fladen (core). We propose that displacement costs by restricting damaging activities will be outweighed by the medium to long term benefit of protecting the ecological integrity of the possible MPA so it can continue to provide ecosystem services to Scotland's offshore waters.

It is possible that the densely populated tall seapen community of the Central Fladen (core) possible MPA may be a positive outcome of low intensity bottom trawling activity. The lower levels of activity may in turn be a result of restricted fishing activity within 500 m of the oil and gas pipeline, and fishing vessel avoidance to the vicinity of the pipeline more broadly. The Central Fladen (core) and Central Fladen possible MPA is the preferred option and is fully supported for MPA designation.

32. Recognising the scientific advice from JNCC included alternatives for representing offshore subtidal sands and gravels, offshore deep sea mud, and burrowed mud in OSPAR Regions III and V, do you have a preference or comments on the following combinations to represent these features:

South-West Sula Sgeir and Hebridean slope
 Or Geikie slide and Hebridean slope

LINK supports the designation of the Geikie Slide & Hebridean Slope possible Nature Conservation MPA. This possible MPA offers the most significant representation of northwest continental shelf slope species and communities, in such as burrowed mud, offshore deep sea muds, and offshore subtidal sands and gravels. The region also exhibits greater sighting records for cetaceans. The area is historically subjected to lower fishing activity. Protection designation is supported for pelagic features, and would provide benefits for adjacent internationally listed seabird colonies.

33. Do you have any comments on the case for designation, management options and socioeconomic assessments for the preference you have indicated in the question above, regarding alternatives for representing offshore subtidal sands and gravels, offshore deep sea mud, and burrowed mud in OSPAR Regions III and V?

Yes No

We support conservation objectives for the protected features within the Geikie Slide & Hebridean Slope possible MPA to 'conserve' for all features. We further support and encourage designation of large zones prohibiting those forms of disturbance by mobile and static gear that could have a significant impact on the conservation objectives to ensure sizable proportions of sensitive communities are fully protected from disturbance and have opportunity for future enhancement. The information presented to the possible impacts (if any) of gill netting and line fishing is insufficient to make informed comment. However, this highlights the need for greatly improved fisheries management protocols, monitoring and surveillance for these activities.

We are concerned that no management options are provided for the large-scale biodiversity search feature continental slope. Continental slope is included as a biodiversity feature based on the increased primary production and biodiversity and management options to protect this wider biodiversity should be included.

The socioeconomic impact data presented in the BRIA indicates that the costs incurred in removing damaging activities are not significantly different between the Geikie Slide & Hebridean Slope possible MPA option (£5 - £7 million Present value, total over 20 years) compared to the South-west Sula Sgeir and Hebridean Slope possible MPA option (£5 - £6.5 million). We argue that these costs of restricting damaging activities will be outweighed by the medium to long term benefit of protecting the ecological integrity of Geikie Slide & Hebridean Slope possible MPA so it can continue to provide ecosystem services to Scotland's offshore waters.

The area is used by white-sided dolphin and sperm whale which should be included as protected features and considered in developing management options

and assessing socioeconomic impacts.

Sustainability Appraisal

34. Do you have any comments on the Sustainability Appraisal of the MPA network as a whole?

Yes No

LINK considers that the socio-economic data contained in the consultation documentation should not be used to influence the designation of individual possible MPAs, or choose between sites not considered to be ecologically equivalent, in line with the MPA designation guidelines and the adopted science-based approach.

LINK argues that much of the information provided in the Sustainability Appraisal is flawed and, as written, should not be used to inform the ministerial decisions regarding individual site designations or to select management options. In particular an unbalanced view appears to be presented, with 'worst case' estimates of costs associated with designation (e.g. complete loss of fishery income) contrasting with best case scenarios for non-designation (i.e. no further degradation regardless of the increasing pressures). This contrasts with the view expressed in the Scottish Government's 2020 challenge for Scotland's biodiversity⁷⁴:

*An ecologically coherent network of Marine Protected Areas will protect the best of Scotland's marine nature, promote sustainable use and **aid recovery of commercially valuable fish and shellfish.***

We would also like to highlight the very limited efforts to value the non-use benefits of designation. The importance of these values has been demonstrated by the 3rd party contributions for MPAs coming from environmental groups, interest groups, and most particularly local community groups – Small Isles Community Council, Community of Arran Seabed Trust, Gairloch and Wester Loch Ewe Community and Fair Isle Marine Environment and Tourism Initiative (FIMETI).

Socio-Economic Assessment and BRIAs

Attempts to assess the socio-economic costs of the MPAs proposals are based on some false assumptions, and little effort has gone into quantifying the potential benefits of a well-managed marine environment.

⁷⁴ <http://www.scotland.gov.uk/Resource/0042/00425276.pdf>

1. Management costs

The cost estimates make use of many management scenarios for the proposed MPAs which have not been presented in the Government's proposals, or are unlikely to be implemented once sites are established.

For example, in most instances cost estimates for commercial fisheries in MPAs are made based on a complete closure of the area, yet this is rarely a management option. In many cases this has caused a significant overestimate of costs for the designation of sites for which very little actual restriction is being proposed. The costs should either be recalculated for realistic management options or ignored entirely.

The problem is not confined to the fishing sector. A further example is an estimate for the use of graded scour protection in the Firth of Forth Banks Complex proposal. The estimate of the costs associated with this specialist measure is very high, and yet there is no clear indication of why this cost must be considered and whether it will make the achievement of the conservation objectives more likely. Furthermore, the quoted cost is an unsupported estimate obtained from a company with a vested interest in developing wind energy on the site.

In other instances the costs relate to activities that have been scoped out of proposed management entirely, an estimate of costs (£0.02m) to ports and harbours in East Caithness Cliffs is provided in the Socioeconomic Assessment, although they were considered "activities not considered to be capable of affecting the protected features" in the management options paper.

The estimation of the impact of management appears inconsistent. Cost estimations for commercial fishing make the assumption that all effort currently falling within an MPA will be lost or displaced. This contrasts starkly with the proposed management options which suggest that discussion with stakeholders will limit restriction overall, and therefore limit loss or displacement. The costs also contradict the SEA which assumes displacement only. In the individual Business and Regulatory Impact Assessments, costs are presented for both the socioeconomic impacts of lost effort and the environmental impacts of displaced effort in the same table. This is potentially misleading as both impacts cannot occur.

Cost to aquaculture should be seen in the light of the ambitious growth objectives outlined in the draft NMP. The quoted cost of £0.61 million corresponds to just a few months of such growth. Potential costs to the fishing industry, even given the worst case scenario adopted, amount to only approximately 0-2% of the total value of landings in 2011. This is significantly less than the annual variability in the value of landings between 2008 and 2012 according to Scottish Government data⁷⁵.

We question the assumption that a reduction in employment in the commercial fishing sector will cause an increase in crime. We believe the Scottish public are able to adapt to changes in employment in responsible ways. A recent report for

⁷⁵ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Agriculture-Fisheries/TrendSeaFisheries>

Marine Scotland's Marine Analytical Unit 'The Impact of Sea Fishing on Social Well-being in Scottish Fishing Communities' concluded that "fishing income and employment do not appear to be key drivers of social change, because fishing is a small economic component as other sectors have taken up the slack as well household responses, e.g. holding two or more jobs, are preventing deprivation."

2. *Baseline*

The quantitative estimates of costs of designating MPAs, particularly on the commercial fishing sector, have been calculated to represent 'worst case estimates'. No account is taken of possible displacement rather than loss or of the possibility of zonal management. However, this 'worst case' approach has not been repeated elsewhere, particularly in estimating the costs associated with not designating MPAs. There is an assumption that if no MPAs are designated, the current situation would continue and there would be no cost to any activity. Given that parallel consultations are under way on a National Marine Plan which contains sectoral objectives to increase aquaculture, offshore renewable installations and other marine activities and maximise oil and gas extraction this is clearly not the case. In fact, the Scottish marine environment, and the economic benefits flowing from it, will change dramatically depending on the level of protection it is provided. The declining health of Scotland seas would cost many of our marine sectors dearly.

The marine wildlife tourism sector, which has not been considered in this sustainability appraisal, contributes £63 million to Scotland's economy annually, based on the Scottish Government figures⁷⁶. RSPB research found that this reached £126,000 annually for the local area at Mull of Galloway, directly as a result of seabird tourism⁷⁷. There has been a general deterioration in the condition of the marine environment, as shown in the Scottish Government's Marine Atlas. For seabirds this has been particularly stark and in SNH's latest biodiversity indicators report this has been attributed to food availability, weather conditions, and the impact of predators. Marine Protected Areas have been promoted, through the Marine (Scotland) Act 2010, as well as other internationally policies, to halt or recover from this decline. This Sustainability Appraisal must account for the ongoing decline in the baseline, so that the value the proposed MPAs could provide in halting or reversing the decline can be considered.

3. *Benefits*

Little attempt has been made to quantify the possible benefits of MPA designation. There are obvious potential benefits in the tourism sector which could have been quantified at least as reliably as the sectors which are discussed.

A report regarded as the best available approach to value transfer, given the very

⁷⁶ <http://www.scotland.gov.uk/Resource/Doc/311951/0098489.pdf>

⁷⁷ RSPB (2010) The Local Value of Seabirds: Estimating spending by visitors to RSPB coastal reserves and associated local economic impact attributable to seabirds. The RSPB, Sandy, UK. http://www.rspb.org.uk/Images/localvalue seabirds_tcm9-258550.pdf

limited evidence and resources available, estimated the benefits arising from a theoretical marine protected area network in Scotland (González-Álvarez 2012⁷⁸) as £6.3 billion - £10 billion. Whilst there are acknowledged difficulties in this piece of value-transfer work, the report highlights that the value provided by the contribution of a network of Marine Protected Areas to marine ecosystem services throughout Scotland's seas is likely to be considerable. Scotland's Marine Atlas was unable to evaluate Ecosystem Services (ES) value and health and wellbeing values provided by Scotland's seas. The work by Kenter et al (2013)⁷⁹ is a useful start at evaluating the indirect and non-use value of MPAs, but in order to assess MPA network benefits to the wider marine ecosystem, and indeed of the status and trends in ecosystem goods and services provision in the wider sea, all marine ecosystem values (including from the MPA network as a subset) need further and more accurate quantifying.

There needs to be a focus on the long term health of the seas and the increased benefits and services which they could provide, not on speculative short term costs.

LINK believes the inconsistency in information provided—between the management options, the socioeconomic assessment and the strategic environmental assessment (most notably the contradictory assumptions made regarding the displacement of activities)—makes the results of these documents inappropriate for use in ministerial decision making.

Final Thoughts

35. On the basis of your preferences on which possible MPAs should be designated, do you view this to form a complete or ecologically coherent network, subject to the completion and recommendations of SNH's further work on the 4 remaining search locations?

Yes No

Towards an ecologically coherent network

LINK has serious concerns about the ecological coherence of the network. Some

⁷⁸ González-Álvarez, J. (2012). Valuing the benefits of designating a network of Scottish MPAs in territorial and offshore waters. A report to Scottish Environment LINK. Institute of Natural Resources & Spatial Planning at the University of Oviedo, Spain.

[http://www.scotlink.org/files/publication/LINKReports/Valuing_the_benefits_MPA_Network_Scotland_Report_\(final\).pdf](http://www.scotlink.org/files/publication/LINKReports/Valuing_the_benefits_MPA_Network_Scotland_Report_(final).pdf)

⁷⁹ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M., Reed, M.S. (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

of these are associated with connectivity, which we recognise is a difficult area which requires more research. On this basis, at best we could consider it to be a step towards an ecologically coherent network.

Other concerns we have relate to the wider management measures, and consideration of features beyond the possible MPA protected features. This is explicitly required by the MPA selection guidelines, and included in the OSPAR guidance, for assessing ecological coherence, but is not adequately addressed in the management options presented

Below we have considered whether, if all our expressed MPA preferences are designated, this will form an ecologically coherent network. We have taken the interpretation of the OSPAR criteria from the Ministerial Statement in Annex 4 of the MPA Selection Guidelines as a guide: representation, replication, size of site, adequacy, connectivity and management.

Representation

The Scottish MPA Network Guidelines reflect OSPAR (legally enacted via s.79(3)(b) of the Marine (Scotland) Act 2010 and s.123(3)(b) of the Marine and Coastal Access Act 2009) in requiring that areas that best represent the range of species, habitats and ecological processes (for which MPAs are a suitable measure) should be considered for inclusion in the network. While we welcome the inclusion of rare, threatened and declining features, some broadscale representative features (e.g. offshore sands and gravels, offshore deep sea muds) and large-scale features that support ecosystem function (e.g. shelf banks and mounds, shelf deeps) as MPA search features, a 'representative network' ought to represent the full range of marine biodiversity. We are concerned that gaps will remain, even if the scientific advice presented to Parliament in December 2012 is followed fully, as we would hope.

Most conspicuously, seabirds (other than black guillemot), cetaceans and basking sharks are missing from the 33 proposed MPAs. We therefore support the progression of the four MPA search locations to MPA proposals at the earliest opportunity to deliver MPAs for minke whale, white-beaked dolphin, Risso's dolphin and basking shark. Although we recognise that offshore Special Protection Areas for seabirds are being identified, we do not believe these will be sufficient to deliver protection of feeding grounds for nationally and internationally important seabird populations on the basis of results already presented and because, Scotland's seabirds are unlikely to aggregate in the numbers needed to meet international (SPA) criteria. We will continue to press for seabird MPAs at sea. We do not consider European spiny lobster, burrowing sea anemone (*Aracnanthus sarsi*) aggregations and heart cockle aggregations to have been 'accounted for' in the process. These must remain as MPA search features so that if suitable areas for MPA protection are identified in future, the opportunity remains to protect them. This is crucial given that the presence of one of few previously recorded *A.sarsi* in the Firth of Lorn could not be re-confirmed during a Seasearch expedition in September 2013.

To 'best represent' the range of marine biodiversity, a useful starting point is the broadscale habitats classified to EUNIS Level 3. While the MPA Search Features

include some EUNIS Level 3 habitats, and there is *a posteriori* consideration of representation to EUNIS Level 3 in the advice to Marine Scotland, a limited range has been used to drive the search for new MPAs. Our concern is that assumptions have been made on a presence/absence basis regarding the degree to which existing sites in the Natura 2000 network adequately represent species and habitats. We therefore cannot support the assertion that nine MPA search features were adequately protected by existing protected areas, not least because several of those features (coral gardens, kelp and seaweed communities on sublittoral sediment, maerl or coarse shell gravel with burrowing sea cucumbers, northern sea fan and sponge communities and seagrass beds) were added as protected features to the MPA proposals that were identified using other MPA search features as drivers, and the geographical range and variation of 'maerl or coarse shell gravel with burrowing sea cucumbers' is not reflected in the MPA network, even after being added to South Arran and North West sea lochs pMPAs. To be clear, we support the addition of those features to the resultant MPA proposals but, by definition, if they had been deemed 'adequately protected by existing measures' they would then not need to be added later in the process. The corollary of this is that these features were not adequately protected by existing measures. We would wish to see a comprehensive spatial assessment of the degree to which EUNIS Level 3 habitats, and critical sub-habitats, are represented in the developing network, and their degree of connectedness.

To give one example of a EUNIS Level 3 habitat, we are not convinced that the existing network of marine Special Areas of Conservation provides sufficient area-based protection measures to represent the full range of Infralittoral and Circalittoral rock habitats in Scottish waters. For example, kelp habitats on (by definition) infralittoral rock are recognised as important to support wider biodiversity, for coastal protection and to sequester carbon. We are therefore concerned that only very particular kelp biotopes on sediment or low or variable salinity habitat have been listed. Kelp communities on rock are also of nature conservation importance, particularly in the context of harvesting proposals and potential risks from new types of marine development, therefore the following kelp habitats also merit area-based protection: Kelp with cushion fauna and/or foliose red seaweeds, sediment-affected or disturbed kelp and seaweed communities and Kelp and red seaweeds. As we set out in response to the consultation on the MPA Guidelines, "*if [Natura] species or habitats were excluded, we would point out that there would need to be far more Natura sites (and/or a revised definition of "internationally important" to cover both range/ numbers) to ensure a genuinely "coherent network" of marine protected areas.*" Whilst some kelp habitats may be protected in some reef SACs, nationally important locations for kelp habitats on rock (other than in 'tide-swept algal communities') have been overlooked in this process. Black guillemot have an ecological association with kelp habitats, in which they feed and which ought also to be protected when present in black guillemot pMPAs.

Infralittoral and Circalittoral rock is just one example of a EUNIS Level 3 habitat that may erroneously be deemed to be 'sufficient' for the developing network due to presence within existing marine SACs. A similar assessment could be made for Circalittoral rock communities, for which the east coast of Scotland and extensive Skye coast are lacking in sites to protect rock reef (and in the case of Skye, most

other) communities.

Notwithstanding all the above, we would like to take the opportunity to welcome the description and suggested protection of a 'new' biotope equating to 'deep sea coarse sediment' in pMPAs in OSPAR regions I, II and V.

The scientific advice from SNH and JNCC on one hand "*conclude(s) that there would be no gaps in the representation and replication of seabed habitats across the network*" (based purely on presence/absence) and yet on the other acknowledges that "*spatial distribution was based on a descriptive approach*" and thereafter that "*We understand these factors will form the basis of future more detailed assessments of any ecologically coherent MPA networks*". In short, we do not think it adequate to consider representivity and replication of EUNIS Level 3 habitats simply on a presence/absence basis by OSPAR region, without considering the proportion protected and a more detailed assessment of the extent and status of the habitats. Such an assessment would need to look at EUNIS Level 3 habitat distribution (and species population distributions) from first principles, irrespective of current coverage in marine SACs, for which coverage of some features (e.g. rock reef) may still not be sufficient. This concern also incorporates aspects of size of site (viability), adequacy and connectivity raised below.

Replication

We support the scientific case for replicating features within, *at the very least*, each OSPAR region in the Scottish MPA project area, to meet the OSPAR requirements for biogeographic representation and resilience, spreading the risk against damaging events throughout Scotland's seas. It is therefore entirely appropriate that: a greater proportion of five MPA search features distributed widely throughout Scotland's seas (horse mussel beds, maerl beds, ocean quahog aggregations, black guillemot and sandeel) is included to ensure that natural variation is covered; and that in keeping with OSPAR Principle 11 ("*replication...in each biogeographic area is desirable where it is possible*"), MPA search features with a much broader distribution within Scotland's seas (burrowed mud, offshore deep sea muds and offshore sands and gravel) are replicated within each OSPAR region that they are recorded. This is especially important for burrowed mud which is an OSPAR rare, threatened and/or declining habitat. Due to their threatened and/or declining and sensitive status, we also strongly support the recommendation to include a greater proportion of flame shell beds and northern feather star aggregations in the one OSPAR region in which they are found.

Diluting this existing level of replication would undermine the developing resilience of the network. Indeed, we would assert that the existing degree of replication is *de minimis*, and think that even greater replication is merited, particularly given that the inshore is "*generally dominated by finer scale processes than the offshore*" (OSPAR Guidelines) and that species such as Celtic featherstar and northern

seafan for which inshore MPAs have been identified have relatively short pelagic larval dispersion phases (Gallego *et al*, 2013⁸⁰). We remain of the view that replication should be considered and sought at the biogeographic scale most appropriate to Scotland within a UK sea context, the JNCC regional seas, of which there are six in Scottish waters. This would also have the secondary advantage of aligning consideration of MPA network coherence and the success or otherwise of site management to the biogeographic assessment units of the State of Scotland's Seas (a requirement of the Marine (Scotland) Act 2010 and a useful reporting tool when considering progress toward Good Environmental Status).

We also support the case that some existing features are not sufficiently replicated, even if, as is recommended and we support, the four MPA search locations progress to MPA proposals at the earliest opportunity. We therefore strongly support the case to identify replicate MPA proposals for basking shark, common skate and white-beaked dolphin in future. Should science identify other areas at sea that are important for orange roughy and Risso's dolphin, we would also support their progression to pMPA status. We also recognise that the geographic range and variation of 'maerl on coarse gravel with burrowing sea cucumbers' is not reflected in the network, and therefore further sites will be needed for this feature. When considering maerl more broadly, maerl only appears in two pMPAs in Orkney and Shetland, yet these northern archipelagos are a key stronghold for this habitat-forming coralline algae.

We disagree that fan mussel aggregations can be considered sufficiently replicated. The scientific advice should clarify that only all the *known* Scottish records of fan mussel aggregations are included within the MPA proposals. Evidence presented in the Least Damaged/More Natural paper⁸¹, Scotland's Marine Atlas⁸² and regarding the particular set of circumstances that appear to have protected the Sound of Canna population (topography and a known disposal site), suggest this may be a relic population. Historic records suggest the fan mussel was formerly much more widespread in shallow waters but declined following the advent of benthic trawl fisheries⁸³, therefore the possibility should be kept open for discovery of further remnant population/s worthy of protection and possible enhancement in Scottish (and indeed wider UK) waters. We note that MCS Seasearch divers have recorded individual wild fan mussels in Loch Duich and Scapa Flow, which could form the basis of future MPA searches.

Any dilution of the level of replication in the current proposals will totally undermine the developing coherence of the network. Even more feature representivity and replication is in fact needed.

Size of site

Determination of the size of the proposed MPAs has primarily been driven by the

⁸⁰ Connectivity of benthic marine species within the Scottish MPA network. A Gallego, F M Gibb, D Tulett and P J Wright. Scottish Marine and Freshwater Science 4(2), 2013

⁸¹ <http://www.scotland.gov.uk/Topics/marine/marine-environment/mpanetwork/engagement/workshop2/draftreport>

⁸² <http://www.scotland.gov.uk/Publications/2011/03/16182005/0>

⁸³ Solandt J-L, 2003 The Fanshell: a species of Conservation Concern, British Wildlife 14(6): 423-426

known extent of the biological and geological features being protected. Network design elsewhere has sought to incorporate best available knowledge regarding larval dispersal distances to arrive at guidance for minimum size of MPAs and minimum distance apart. Whilst we recognise that the science of site connectivity and larval dispersal is in its infancy, we would welcome these considerations to be incorporated into the network design as new science becomes available. However, given that many inshore sites are entire sea lochs and many of the offshore sites are already very large, we recognise the case for extending MPA size may only apply in a few cases. Of greater concern are the related concepts of adequacy and connectivity.

Adequacy.

The MPA network must be of adequate size to deliver its ecological objectives. Sites must be big enough and numerous enough collectively to contribute to the protection and, where appropriate, enhancement, of the health of Scotland's seas. OSPAR guidance (Reference 2006-3: Annex I) suggests that 20-90% of rare/threatened/declining features (habitat or species population) and 10-20% of representative features (habitat or species population) should be protected in the network. Whilst we recognise that percentage targets were not incorporated in the design process, to ensure well-evidenced pMPAs were identified based on sound science in accordance with cross-stakeholder consensus, consideration of proportion and extent of the various features protected is necessary as part of an iterative assessment of progress toward coherence. We would like to see an assessment of developing coherence that determines whether the sites are big enough and whether they collectively protect a suitable known proportion of each search feature, whether habitat or species population, in order to ensure they contribute toward the enhancement of Scotland's seas.

Connectivity

As well as being big enough and numerous enough, sites need to be close enough together to be mutually supporting, particularly for those features which have longer larval dispersal distances. It is difficult to assess the connectivity of the possible MPA network as research is still in its early stages. Perhaps the most comprehensive attempt so far comes from Gallego *et al.* (2013)⁸⁴

Gallego *et al.* (2013) attempt to assess the connectivity of benthic priority marine species within the Scottish MPA network. Using a model of the physical oceanography together with information and assumptions about the larval stages of benthic species, their work suggests connections exist particularly between offshore MPAs and for species with longer mobile larval stages. Currents flow generally clockwise around Scotland, into the northern North Sea, and across to Norway, with larvae unable to move any significant distance against this flow. This highlights the need for wider cooperation with countries whose sea areas lie both upstream and downstream of Scotland's.

⁸⁴ Connectivity of benthic marine species within the Scottish MPA network. A Gallego, F M Gibb, D Tulett and P J Wright. Scottish Marine and Freshwater Science 4(2), 2013

Inshore flows are generally weaker than offshore, suggesting that inshore MPAs need to be closely spaced if they are to be considered a network. Connectivity is much more difficult to achieve for species with short pelagic larval durations (e.g. Celtic feather star, northern sea fan, pink soft coral) and inshore populations may be effectively isolated. This further underlines the importance of considering whether more sites for these features are needed in Scotland's inshore waters.

There is more work required here. The model they used did not stretch right in to the shore (leading to some strange results like an apparent overland route for northern sea fan from Loch Sween to South Arran), and assumptions about larval behaviour led to results such as no larvae remaining in the MPA where they spawned for the offshore MPAs. The iterative assessment of developing network coherence must therefore also consider emerging findings from the study of larval dispersal.

Management

MPAs should be managed to ensure both the protection of the features for which they were selected and to support the functioning of an ecologically coherent network. We would recommend using an ecosystem goods and services approach to managing MPAs as recommended in Potts *et al* (2013)⁸⁵, recognising the contribution that protected marine species and habitats can make to wider ecosystem health, function and goods and services provision. Perhaps one of the best understood provisions of ecosystem goods is food. A meta-analysis by Lester *et al* (2009)⁸⁶ determined that fully protecting temperate marine areas led to more than a five-fold increase in biomass and more than a doubling in diversity, and that these temperate results were more marked than in tropical systems. Important recent findings from Lamlash Bay, Isle of Arran suggest corroboration of these findings in a Scotland context. Howarth (2012)⁸⁷ concluded *“that ecological communities within Lamlash Bay are more diverse and more abundant within the NTZ than outside, and that scallop populations within the NTZ are made up of older, larger and a greater number of individuals.”*

Further evidence of the scope for marine ecosystem enhancement can be found from the Windsock Area Closure study (<http://www.scotland.gov.uk/Uploads/Documents/SISP0209.pdf>). Although the report acknowledged more time would be needed to fully assess scope for recovery of demersal fish species, it nonetheless concluded that *“Some commercial species, such as large cod and haddock, showed positive trends...”* and, most significantly for wider ecosystem protection and enhancement, that *“The most evident effect of the closure was found for a non-commercial species, lesser spotted dogfish, which increased markedly in the Windsock area following the closure. Other elasmobranchs, although much less abundant in the study area,*

⁸⁵ Potts, T.; Burdon, D.; Jackson, E.; Atkins, J.; Saunders, J.; Hastings, E. and Langmead, O. (2013). Do marine protected areas deliver flows of ecosystem services to support human welfare? Marine Policy (in press)

⁸⁶ Lester, Sarah E., Benjamin S. Halpern, Kirsten Grorud-Colvert, Jane Lubchenco, Benjamin I. Ruttenberg, Steven D. Gaines, Satie Airamé, and Robert R. Warner. "Biological effects within no-take marine reserves: a global synthesis." Marine Ecology Progress Series 384 (2009): 33-46.

⁸⁷ Howarth, L.M, 2012 Exploring the fishery and ecological effects of Lamlash Bay No-Take Zone)

responded to the closure similarly to lesser spotted dogfish.” These results of closure to towed/active gear are particularly noteworthy given the context of population decline and ‘many concerns’ for shark, skate and ray populations in all Scottish waters catalogued in Scotland’s Marine Atlas.

Whilst we recognise and support the policy that the proposed MPAs will be managed on the principle of sustainable use, and therefore not creating *de facto* no-take zones, where higher levels of protection *are* merited, which is the case for parts of many of the MPAs particularly those for fragile benthic features, secondary benefits of increased fish and shellfish protection and production may flow, as results from Lamlash Bay and the Windssock closure show. Opportunities should therefore be taken to research these possible fishery co-benefits of ecologically required protection and any lessons then learned applied to wider sustainable fisheries management.

In order for the entire network to be considered well-managed, existing area-based protection measures also need to be well managed. We remain particularly concerned with the poor management in the existing marine SAC suite, and look forward to the application of a risk-based approach to site management as is being progressed by the MMO, IFCA and other relevant authorities in England.

Conversely, other than those that have been put forward as MPA proposals as part of the 33 open for consultation, we do not recognise those other area-based measures, most significantly the fisheries management areas that are deemed to contribute to the developing MPA network (East Coast Scotland FRA, North West Rockall, West Rockall Mound, Darwin Mounds, Hatton Bank and two Blue Ling Management areas) as *de facto* parts of the network. Under s.79(4) of the Marine (Scotland) Act 2010 it is clear that, unless designated as nature conservation MPAs, other area-based measures, including fishery management areas, cannot legally be considered part of the network. In order for other area-based measures to be considered as contributing to the MPA network, they need to be designated as nature conservation MPAs, managed appropriately for the features listed, monitored and reported on to Parliament under the relevant provisions of the Act. For example, how would s.80 of the Act on advice from SNH apply? Would the offences under s.94 and s.95 apply? Would such sites be reported against as per s.103? Would the relevant sections of Part 7 apply to these ‘other’ sites? If these conditions cannot be met we do not believe that it is appropriate to include ‘other area-based measures’ as part of the MPA network.

Geological features – we are unclear as to how geological features will be managed in order to ensure their protection and, where appropriate, enhancement.

Should pMPAs progress to designation as we would wish, more detailed discussions will need to take place regarding site management. All comments on management options submitted are in relation to current understanding. As new science emerges, LINK views on management options appropriate for the different pMPAs may therefore evolve.

Marine mammals and ecological coherence

For at least Southern Trench, Skye to Mull and Eye Peninsula to Butt of Lewis, a

combination of information should be used in the assessment, not only on species abundance, but also spatio-temporal distribution, ecological connectivity, habitat use and precautionary principle.

For the network to be ecologically coherent, in addition to the search locations, the Natura 2000 network should be complete. Harbour porpoise and bottlenose dolphin are not currently adequately represented in the network. As a result, these ncMPA sites, in addition to a complete SAC network for harbour porpoise and bottlenose dolphins, coupled with increased management options consideration of marine mammal features in Rosemary Bank, Hatton-Rockall and Northwest Faroe-Shetland Channel, would provide a realistic ecological coherent component for mobile species to the wider Scottish, UK and OSPAR MPA network.

We refer you to the WDC report titled 'Making space for porpoises, dolphins and whales in UK seas: Harbour porpoise Special Areas of Conservation as part of a coherent network of marine protected areas for cetaceans'.

36. Do you have any other comments on the case for designation, management options, environmental or socioeconomic assessments of the possible MPAs, or the network as a whole?

Yes No

Research and Demonstration MPAs

We seek clarity on the progress of the designation of Demonstration & Research MPAs. These form an important component of marine conservation enabling, for example, the development of new approaches to marine management, addressing issues through original research or considering the applicability of a management approach in a new area.

Benefits of protection and assigning buffer areas

LINK strongly advocates that PMFs within our future MPAs be afforded protection compatible with meeting their conservation objective, and that protected zones be adequate in size and shape so that species and habitats have the opportunity to recover and enhance beyond their present range.

There is considerable published evidence that demonstrates the potential of MPAs to conserve and recover species, fisheries, habitats, ecosystems, and ecological functions and services and buffer against the ecological effects of climate change (Fox et al. 2012)⁸⁸.

⁸⁸ Fox, H.E.; Mascia, M.B.; Basurto, X.; Costa, A.; Glew, L. et al. (2012). Re-examining the science of marine protected areas: linking knowledge to action. Conservation Letters 5: 1–10.

MPAs can restore fisheries and ecosystems both within and beyond MPA boundaries. MPAs may be particularly useful as a conservation intervention in data poor contexts (the norm rather than the exception) in which the MPA can provide insurance against over harvest) and provide valuable ecological data on which to base future management decisions (Edgar et al. 2009)⁸⁹. For example, Friedlander et al. (2007)⁹⁰ found up to 2.6 fold increase in fish abundance across 11 marine protected areas off Hawaii within a few years of declaration. More recently, Sheehan et al. (2013)⁹¹ found that reef associated fish species within an MPA, protected from towed demersal fish gear, at Lyme Bay (SW England) were able to colonise outside the MPA boundary and expand their range into adjoining habitat after 3 years from the commencement of prohibition.

A meta-analysis by Lester et al (2009)⁹² determined that fully protecting temperate marine areas led to more than a five-fold increase in biomass and more than a doubling in diversity, and that these temperate results were more marked than in tropical systems. Recent findings from Lamlash Bay, Arran (2012)⁹³ suggest similar effects are attainable in Scottish waters.

The potential for enhancing wider ecosystem health and function is therefore great.

However, the widespread concerns and declines for species and seabed habitats documented in Scotland's Marine Atlas, the fact that of the 37 pMPAs and search locations, 20 are enhancement opportunities to existing measures and 12 are derived from least damaged/more natural locations (where activity would be expected to be limited anyway) and the fact that only three features of limited extent have 'recover' as an objective, suggests there is a pressing need to realise this excellent potential.

Improving baseline data

The consultation documentation states that work to offer suitable spatial protection to white-beaked dolphins, as well as basking shark and common skate, will continue (page 13).

In future, there should be a focus on additional collection of baseline data for white-beaked dolphins, as well as for harbour porpoises, bottlenose dolphins, Risso's dolphins and minke whales with a view to completing the network for these

⁸⁹ Edgar, G.J.; Barrett N.S. and Stuart-Smith, R.D. (2009). Exploited reefs protected from fishing transform over decades into conservation features otherwise absent from seascapes. *Ecol Appl* 19:1967–1974.

⁹⁰ Friedlander, A.M.; Brown, E.K. and Monaco, M.E. (2007). Coupling ecology and GIS to evaluate efficacy of marine protected areas in Hawaii. *Ecol Appl.* 17: 715-730.

⁹¹ Sheehan EV, Cousens SL, Nancollas SJ, Stauss C, Royle J and Attrill MJ (2013). Drawing lines at the sand: Evidence for functional vs. visual reef boundaries in temperate Marine Protected Areas. *Marine Pollution Bulletin* (doi: 10.1016/j.marpolbul.2013.09.004.).

⁹² Lester, Sarah E., Benjamin S. Halpern, Kirsten Grorud-Colvert, Jane Lubchenco, Benjamin I. Ruttenberg, Steven D. Gaines, Satie Airamé, and Robert R. Warner. "Biological effects within no-take marine reserves: a global synthesis." *Marine Ecology Progress Series* 384 (2009): 33-46.

⁹³ Howarth, L.M, 2012 Exploring the fishery and ecological effects of Lamlash Bay No-Take Zone)

species, and other cetacean species may benefit from MPA protection should better baseline data exist.

MOD activities

The MPA partial BRIAs recognises significant overlap between proposed protected features and MOD practice areas, but generally conclude that the features are not vulnerable to MoD activities. It's unclear how this assessment was determined. No environmental assessments of impacts have been conducted of which we are aware. We would like to see the MOD to undertake a full SEA so that all possible activities can be assessed and appropriate monitoring/mitigation implemented.

Review of the network

We support the six-year network reporting period established by s.103 of the Act. In light of our preceding comments, we ask to confirm that there is opportunity within this period to submit further third party MPA proposals.