A consultation on proposals to designate four Marine Protected Areas in Scottish waters

by the Scottish Environment LINK Marine Group

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Summary

Scottish Environment LINK's Marine Group strongly support the designation of all four possible nature conservation marine protected areas (NCMPAs) in Scottish seas: Northeast Lewis, Sea of the Hebrides, Shiant East Bank and Southern Trench. The best available scientific evidence, much of which has been collected and contributed by LINK member organisations, including HWDT, MCS, WDC and WWF, demonstrates that these possible MPAs are critical to the features they would protect.

However, LINK is concerned that the conservation objectives ('conserve') for mobile Priority Marine Features (PMFs) fails to acknowledge the 'unknown' status of their populations. Given the lack of information regarding the population status of some PMFs in these possible NCMPAs, notably Risso's dolphin, minke whale and sandeel, it could therefore be reasoned that a 'recover' objective is warranted on a precautionary basis.

In the context of already depleted populations as the baseline for basking shark in the Sea of the Hebrides possible NCMPA, LINK members contend that the conservation objective should be to 'recover' basking shark numbers in this area.

Regardless of the conservation objectives, the future management measures for these features should be implemented with the ambition and priority warranted by a recovery objective, which would also contribute to the wider population status of the features. The managements scenarios used in the Sustainability Appraisal for this consultation do not fully reflect the range of pressures and the extent of their impact on the PMFs within these possible NCMPAs.

Introduction

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

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

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

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

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

LINK members welcome the opportunity to comment on this consultation.

A consultation on proposals to designate four Marine Protected Areas in Scottish waters

1. Do you support the designation of these possible Marine Protected Areas?

	Strongly Support
North-east Lewis	x
Sea of the Hebrides	x
Shiant East Bank	x
Southern Trench	x

Please enter your comments about this question below. Please ensure you indicate which site(s) your comments refer to.

Comments (optional)

Scottish Environment LINK members (hereafter 'LINK') strongly support the designation of North-east Lewis, Sea of the Hebrides, Shiant East Bank and Southern Trench as nature conservation MPAs (NCMPAs). These sites are essential to fill known gaps in Scotland's developing MPA network, particularly for mobile species and seabed habitats that are vulnerable to anthropogenic pressures.

A three-pillared approach to the conservation of large mobile species is merited. Cetaceans and basking sharks are quite rightly protected wherever they roam under the Conservation (Natural Habitats, &c.) Regulations 1994 and the Wildlife and Countryside Act 1981 (as amended by the Nature Conservation (Scotland) Act 2004) respectively. However, spatial conservation measures are also needed to provide additional direct protection where animals congregate for essential life-history stages such as feeding, breeding and calving, and to protect essential habitat and the wider ecosystem health upon which they rely. Complementing species-specific and wider seas measures (such as marine planning and fisheries management) throughout Scottish waters, these possible ncMPAs are essential for contributing to attaining favourable conservation status for the particular species and good environmental status overall.

Scottish Environment LINK Marine Group member Whale and Dolphin Conservation (WDC) submitted third party proposals, along with LINK Marine Group member Hebridean Whale and Dolphin Trust (HWDT) and non-LINK member Cetacean Research and Rescue Unit (CRRU), for possible NCMPAs for Risso's dolphins, minke whales and

white-beaked dolphins in 2011. The third-party proposals included three of the areas that are being consulted upon (North-East Lewis, Sea of the Hebrides and Southern Trench), although the boundaries vary slightly.

The proposed sites are essential to ensure progress toward an ecologically coherent network of MPAs representative of Scotland's marine environment and would include the first NCMPAs for whales in the UK and the first basking shark MPA in the world.

MPA Boundaries

LINK members note that clipped boundaries are used inconsistently. Some coastal inshore waters and sea lochs are excluded from the Sea of Hebrides NCMPA, which is not consistent with the datasets presented in the evidence and data assessments that demonstrate persistent minke whale abundance. As a result, important shallow coastal water habitats are excluded from the possible NCMPA. This is particularly important, for example, in how ADDs operated on fish farms will be managed for the conservation of cetaceans, as fish farms using these devices are likely to be located within sealochs and other coastal areas. Their audio impact can extend for several kilometres and is known to displace cetaceans (Findlay et al., 2018[1]; Coram et al., 2014[2]).

2. Do you agree that the scientific evidence presented justifies the case for the designation of each site?

Yes

Please enter your comments about this question below. Please ensure you indicate which site(s) your comments refer to.

Comments (optional)

Yes. LINK Marine Group members agree that the scientific evidence presented justifies the case for the designation of all four sites and we support the SNH data confidence assessments.

At the time that LINK member WDC submitted the third-party MPA proposals (2011), strong scientific justification for designating the three cetacean sites was provided. This included, but was not limited to, the data collected by WDC, HWDT and CRRU in each site.

WDC has been conducting summer field work on Risso's dolphins in the southern half of the North-east Lewis possible NCMPA since 2010. They have operated a land-based Shorewatch site from Tiumpan Head, also within the possible NCMPA, since 2011. Trained Shorewatch volunteers collect effort-based data all year-round. In addition to the data provided in the data confidence assessment, WDC has recently published further evidence on the value of this area for Risso's dolphins. There is evidence of high inter- and intra-annual site fidelity, with individual dolphins photographically captured in up to six of the eight survey years, and between two and seven capture dates being recorded for over 45% of individuals within most years[3].

[1] https://donstaniford.typepad.com/files/findlay-et-al-2018-mapping-widespread-increasing-add-noise-mar-poll-bull-oct-2018.pdf

[2] Coram, A., Gordon, J., Thompson, D. and Northridge, S (2014). Evaluating and assessing the relative effectiveness of non-lethal measures, including Acoustic Deterrent Devices, on marine mammals. Scottish Government. https://www2.gov.scot/resource/0046/00461726.pdf

[3] https://www.cambridge.org/core/services/aop-cambridge-core/content/view/86B06016A5C5A8E8FCBE53205EFFA328/S0025315418000516a.pdf/rissos_dolphins_grampus_griseus_in_a_proposed_marine_protected_area_off_east_lewis_scotland_uk_20102017.pdf

Further, recaptures of three individuals off North-east Lewis spanned periods of 10 to 12 years, representing the longest site fidelity evidenced for Risso's dolphins anywhere in UK waters to date. Calves (including neonates) were recorded in 37.5% of WDC boat-based sightings. Calf-positive scans were recorded from Tiumpan Head between April and October, with notable peaks in July, August and October, when Risso's dolphin calves were present in 2.9 –4.3% of the total scans carried out. We consider this likely to be a minimum representation, since small calves are not always easy to detect by shore-based observers. Both the boat and shore datasets therefore provide strong evidence that the possible NCMPA is used as a nursery ground by Risso's dolphins. Effort-based data from these surveys support the inclusion within the possible Northeast Lewis NCMPA of Branahuie Bay and the nearshore waters used by Risso's dolphins around the southern half of the Eye Peninsula.

The evidence and techniques used to determine the proposed locations of the sites are appropriate. This includes the use of data from 2002 to 2012 from HWDT's dedicated, effort-based monitoring surveys (as well as other data) to highlight areas of higher than average persistence at a national scale for minke whales and basking sharks in the Sea of the Hebrides and Risso's dolphins in North East Lewis sites.

HWDT monitoring surveys have continued annually since 2012 using the same standardised methodology each year to provide a comparable dataset. Data collected by HWDT since 2012 indicates the continued presence of Risso's dolphin, minke whale and basking shark within the site boundaries proposed for the North-East Lewis and Sea of the Hebrides possible NCMPAs. This data has been visualised in its entirety in the Hebridean Marine Mammal Atlas: Part 1, 15 years of Marine Mammal Monitoring in the Hebrides. Comparable long-term data of this type is essential in order to monitor the integrity of the site, the effectiveness of management measures and the ongoing suitability of the boundaries for these highly mobile species.

The sites represent areas of persistent high density at a national scale and are relied on by these mobile species for essential activities such as feeding, breeding and calving (known as key life history stages). Photographic and sightings data collated and collected by HWDT from 1990-2019 highlight the long-term site fidelity of minke whales in the Sea of the Hebrides, an area which is important for feeding. HWDT maintain a minke whale photo-ID catalogue, last updated in 2017, which contains 235 recognisable individuals based on photographs of the dorsal fin and other identifiable features such as coloration and other marks and scars. Twenty-eight percent of individual whales featured in the catalogue have been seen on more than one encounter, the longest sightings histories for individual whales in the Sea of the Hebrides site currently span 18 -19 years (source: unpublished HWDT data). This high level of site fidelity further demonstrates the importance of the site for population of this species utilising the waters of Scotland and the wider UK.

LINK Marine Group member the Marine Conservation Society (MCS) currently manages the largest database of basking shark sightings in the world, comprising MCS "Basking Shark Watch" citizen science wildlife watching reports, and effort-based sightings data provided directly by HWDT and contributions from other experts. The popularity and scale of the MCS database itself demonstrates the value the public places on the conservation of these species within UK and Scottish waters, also indicating the non-use and indirect benefit of designating the possible Sea of the Hebrides NCMPA for basking sharks and other features. Furthermore, on-going satellite tagging and camera surveys of basking sharks by SNH, the University of Exeter, MCS, Woods Hole Oceanographic Institute, WWF and other academic institutions is helping to provide further valuable insight into the behaviour of basking sharks in the Sea of the Hebrides. Recent detailed survey work led by the University of Exeter based on satellite tracking and camera studies in the Sea of the Hebrides possible NCMPA has confirmed the importance of this area for basking sharks. This evidence shows that:

1. Basking sharks occupy the area seasonally, displaying very high levels of summer residency, with the same sharks coming back to the site year-on-year (Doherty et al. 2017. Biological Conservation (209) 67-75)
2. Sharks seasonally arrive and disperse from the site from national and internal waters of north-east European and West African countries and hence under the Bonn Convention on Migratory Species (of which the UK is a signatory) there is an obligation to conserve the species when in UK waters (Doherty et al. 2017. Scientific Reports (7):42837 and Dolton et al. In Review Endangered Species Research, which shows sharks tagged in the Isle of Man, move to the possible NCMPA later in the summer before dispersing across the northeast Atlantic)
3. Sharks can aggregate in large numbers at the site, as demonstrated by a formal wildlife survey conducted by RPS for Scottish Power Renewables. In August 2012, one survey, conducted over two days (4th and 5th of August) estimated a minimum of 963 sharks in the region [at the surface] to the west of Tiree, an area entirely within the possible Marine Protected Area boundary. One aggregation of sharks encountered by this survey numbered 155 individuals.
4. Sharks are frequently observed feeding across the site (SNH Commissioned Reports 339 and 908). Further, of the 963 sharks estimated in Aug. 2012 survey by RPS (see point 3), approximately half were reported as feeding (405 individuals).
5. They use the entire water-column, they are not a species solely of surface waters when occupying the possible NCMPA (Doherty et al. 2019, In Press. Marine Biology). Furthermore, recent work demonstrates a strong association of the animal with the seabed (Research funded by WWF/Sky Ocean Rescue, SNH, WHOI and the University of Exeter in 2019; reports in preparation to SNH following use of towed camera and autonomous AUV following of sharks)
6. Sharks have been observed breaching at the site, which is often linked to pre-courtship, and video data from 2018 shows close association of sharks near the seabed on areas where breaching has been observed – a further demonstration that the site might be used for courtship and potentially breeding (data gathered in 2018 and 2019, in preparation for SNH; and Gore et al 2018 Journal of Marine Biological Association of the UK; doi:10.1017/S0025315418000383).
7. A UK wide model of habitat suitability for basking sharks indicates the possible NCMPA has one of the highest mean suitability scores (Austin et al., 2019 Journal of Sea Research (153) 101767). Habitat models for basking sharks, focused solely on Scottish territorial waters, similarly highlights the importance of the region (Paxton et al. Commissioned Report to SNH 594)

Notwithstanding these excellent research and data contributions, providing compelling evidence for persistence of populations of the features at these proposed sites, **LINK is concerned that the conservation objectives ('conserve') for mobile features fails to acknowledge the unknown status of their populations**. This is laid out in greater detail in question 3.

3. Do you have any comments on the Conservation and Management Advice for each site?

Yes

Please enter your comments about this question below. Please ensure you indicate which site(s) your comments refer to.

Comments (optional)

Comments on the conservation advice

1. General comments

We welcome the inclusion of Conservation Objectives recognising the importance of protecting the extent, distribution, structure and function of supporting features alongside objectives to protect the designated features themselves. Given the recent global reports of dramatic declines of biodiversity[4], and the recently declared global climate emergency, the level of ambition for management of these sites should be robust. NCMPAs can only benefit features if adequate management, monitoring and enforcement are put in place and this can only be assessed if there is sufficient population data available for the features in the site. Robust management is essential to prevent the sites from being 'paper parks'. LINK members believe that well-managed MPAs can protect and recover biodiversity and result in long-term benefits for people and communities. These NCMPAs are proposed, in part, to safeguard some of Scotland's greatest wildlife tourism assets but will also protect crucial habitats and prey, in the form of sandeels, for commercial fish, seabirds and cetaceans. Management should be developed to ensure the designated features can thrive in these areas, and businesses and people can continue to benefit from them while living within environmental limits.

The Conservation and Management Advice documents state that 'the Conservation Objectives seek to conserve protected feature(s) of a MPA where evidence exists that it is in favourable condition in the site, or where there is uncertainty concerning the assessed condition of a feature but no reason to suspect deterioration in condition since designation.' (We query whether in this context, the text should instead read "deterioration in condition since proposal" as it is not yet designated). Under this approach it is possible, and in some cases perhaps likely, that the feature could be in a deteriorated state pre-designation, yet still be classified as in favourable condition with a corresponding conserve, rather than recover, conservation objective due to a lack of long-term data that allows for a robust conservation status assessment. Even if there is good reason to assume it is not deteriorating further, a 'conserve' objective might only aim to maintain the feature at a potentially deteriorated state. Therefore, confidence in the data for classifying possible NCMPAs should not be confused with having a favourable conservation status as a whole.

Furthermore, there is apparently no consideration of features where there is no evidence to assess if the feature is in favourable or unfavourable condition, which by default may end up with a 'conserve' objective because there is not enough data 'to suspect deterioration in condition since designation.' Where there is not enough information on the current population and trends of a feature within the site and/or nationally LINK strongly believe that the data must be gathered at the earliest possible opportunity so that this information can properly inform the features Conservation Objective and strength of future management. **Given the lack of information regarding the population status of some features in these possible NCMPAs, notably Risso's dolphin, minke whale and sandeel, it could therefore be reasoned that a 'recover' objective is warranted on a precautionary basis. Regardless of the conservation objectives, the future management measures for these features should be implemented with the ambition and priority warranted by a recovery objective, which would also contribute to the wider population status of the features.**

The Habitats Directive Article 1(i) states: "The conservation status will be taken as 'favourable' when:

— population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and

[4] https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/

— the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and

— there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis;"

The UK submissions for the 2019 Article 17 Habitats Directive reporting (fourth report, published 22nd May 2019) have assessed the conservation status for minke whale and Risso's dolphin as unknown, whereas the previous assessment in 2013 listed the conservation status as favourable for minke whale. LINK believes where a species has an unknown conservation status, the objective, management measures and monitoring priorities for that species should reflect this.

There is also no assessment as to the full potential carrying capacity of the NCMPA for these features. An assessment as to what this could be might help in developing an appropriate conservation baseline for features in the future, however it might be more practical to initiate a robust monitoring programme using control sites where no baseline exists for the NCMPA, so management and protection can be assessed.

The application of an appropriate precautionary approach would reduce the risks of undermining the potential of NCMPAs to 'contribute to policy commitments' and provide resilience in the face of a climate and biodiversity crisis, a goal stated in the Conservation and Management Advice: 'Helping to adapt to climate change under The Scottish Climate Change Adaptation Programme by increasing the resilience of habitat and species in the area.' We also believe a strong precautionary approach should be taken under 'Consideration of minor changes to features' in Annex 1. Adequately monitoring many of these features will be a challenge. If this only occurs every six years, then a decision to ignore 'minor' or 'temporary' declines would require considerable caution if the feature was not to be assessed again for a further 6 years. This could result in significant deterioration to these features with no measures put in place to address these. See, for example, Taylor et al, 2007[5] for monitoring trends and the associated data requirements for marine mammals.

2. Basking shark

Basking sharks are assessed by the IUCN Red List as 'vulnerable' (population trend decreasing). The Europe regional assessment for the species classifies basking shark populations as 'endangered' (population trend stable). In the context of already depleted populations as the baseline for this possible NCMPA, LINK members contend that the conservation objective should be to "recover" basking shark numbers in this area. More recent survey work on basking sharks (described in question 2) revealing the use of the Sea of the Hebrides area for courtship, breeding and feeding indicates that protection of populations at these essential life history stages through the establishment of an NCMPA could support wider recovery of the species in the NE Atlantic.

3. Sandeel

There is no data on the population of sandeels in the site although it is a well-known and important site as the 'Detailed Assessment against the Guidelines clearly shows. The lack of population data for the NCMPA undermines the ability to monitor the species against a Conservation Objective and does not give any indication as to whether it is at favourable status. Given the importance of sandeel populations as part of a healthy ecosystem, LINK want to see surveys undertaken to assess the population of sandeels in the site to inform the Conservation Objective and the strength of future conservation measures.

[5] Taylor, B. L., Martinez, M., Gerrodette, T., Barlow, J., & Hrovat, Y. N. (2007). Lessons from monitoring trends in abundance of marine mammals. Marine Mammal Science, 23(1), 157-175.

4. Risso's dolphin

Both the UK Risso's dolphin conservation status and European Risso's dolphin conservation status is classified as 'Unknown'. Under Habitat's Directive Article 1(i) (see above) it is unclear if the Risso's dolphin population is maintaining itself, as the status is 'unknown' and not 'favourable' at both the UK and European level. Further, the Treaty on the Functioning of the European Union (TFEU) Article 191(2) states: "Union policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Union. It shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay." As a result, a precautionary approach to protection is required in application of the law. Habitat Directive Article 11 requires: "Member States shall undertake surveillance of the conservation status of the natural habitats and species referred to in Article 2 with particular regard to priority natural habitat types and priority species." It follows that, until such a time as allows assessment of the status of Risso's dolphin to be 'favourable', a precautionary approach would be required in relation to assessing the conservation objectives and ambition for future management.

Anecdotal evidence from fishermen and dedicated surveys, funded in part by WDC and conducted by scientists in the 1990s, suggest a reduction in group sizes of Risso's dolphins observed within the possible NCMPA over the last 30 years. As a result, the assessment that Risso's dolphin are 'Favourable' is not based on adequate evidence. At best the status can be considered to be 'unknown' and so, based on legal requirements of the Habitats Directive and TFEU, 'recover' would be a more realistic and precautionary conservation objective currently. Findings from Taylor et al.[6] reinforce that where long-term population data is absent the "percentage of precipitous declines that would not be detected as declines was 72% for large whales, 90% for beaked whales, and 78% for dolphins/porpoises".

5. Minke whale

LINK acknowledges that best available evidence presented to support the proposal of the Sea of the Hebrides and Southern Trench NCMPAs provides a clear case for their designation. However, as highlighted above for Risso's dolphin the wider population status of minke whale is 'unknown', and the data are not necessarily sufficiently long-term to enable certainty of their population stability or otherwise. Until such a time as allows assessment of the status of minke whale to be 'favourable', a precautionary approach would be required in relation to assessing the conservation objectives and ambition for future management.

In the context of such uncertainty and lack of long-term population data, the major priority for the mobile species within these sites (notwithstanding the fundamental need for appropriate management measures, which LINK would expect to be implemented if the sites are designated) is impact research and baseline monitoring. This will inform a more accurate assessment of conservation status (and therefore the appropriate conservation objective) and enable managers to track change within the NCMPAs.

Management advice

LINK members note that no specific management measures are proposed at present for the possible NCMPAs and that management discussions will occur after the current consultation. Management measures will be required in all the sites to ensure they are effective in protecting and recovering the features. LINK anticipate and look

[6] Taylor, B. L., Martinez, M., Gerrodette, T., Barlow, J., & Hrovat, Y. N. (2007). Lessons from monitoring trends in abundance of marine mammals. Marine Mammal Science, 23(1), 157-175.

forward to contributing to that process but include some comments here in relation to the advice provided for the possible NCMPAs.

Designating NCMPAs provides an opportunity to use additional conservation measures to adequately address cumulative impacts from anthropogenic pressure, therefore it is disappointing that no assessment of cumulative impacts has been undertaken. It is the view of LINK members that the management scenarios used for the purpose of the Sustainability Appraisal are unlikely to sufficiently address all the pressures within the four proposed sites for the achievement of their conservation objectives. In the case of cetaceans, linking to the Dolphin and Porpoise Conservation Strategy is essential in order to deliver a joined-up approach between spatial and wider management for cetaceans. One of the functions of an NCMPA should be to contribute to the wider population, particularly where the NCMPA supports essential life history functions (e.g. breeding and feeding), otherwise it will serve limited purpose. Measures proposed within the possible NCMPAs may be required to go beyond the Strategy, given the critical nature of the possible NCMPA habitats. The Strategy itself should be ambitious, given the considerable data gaps on cetacean distribution and impacts of pressures faced and the increasing use of the seas for multiple human interests.

The Habitats Directive requires that surveillance of cetaceans, including Risso's dolphin and minke whale populations, should be undertaken throughout Scottish waters. An adequate level of monitoring is a high priority for the mobile features within these proposed sites in relation to ensuring the conservation objectives are appropriate (see above). Activities that will need to be considered for management measures in respect to mobile species will include vessel traffic, underwater noise (including reserved issues, such as military noise), wildlife tourism (tour operators and recreational users), mobile and static gear fisheries - individually and cumulatively. Military should be required to fund independent monitoring of the impacts of exercises. Additional considerations will be needed for activities regulated through licensing processes, including fish farming (e.g. use of ADDs), waste disposal and other coastal developments where noise, construction and waste may be an issue. Management measures will need to be site-specific, robust, properly consider supportive features and where relevant should be additional to, but aligned with, the Dolphin and Porpoise Strategy.

For each of the sites containing cetaceans or basking sharks there are a number of fishing activities that have been identified as being 'considered capable of affecting the proposed protected features' through incidental bycatch or entanglement. The new EU technical measures regulations (Regulation (EU) 2019/1241) on 'the conservation of fisheries resources and the protection of marine ecosystems through technical measures' state 'To afford the strict protection for sensitive marine species such as marine mammals, seabirds and marine reptiles provided for in Directives 92/43/EEC and 2009/147/EC, Member States should put in place mitigation measures to minimise and where possible eliminate the catching of such species by fishing gear. ' This is a clear objective and LINK members therefore believe that any measures proposed within the MPA network with respect to incidental bycatch of designated features should aim for the highest standards, to eliminate this threat rather than 'reduce or limit pressures' and the advice should be to recommend 'remove or avoid pressures'.

The proposed management measures for sandeel, including prohibiting a target fishery and banning hydraulic dredging, are welcome and essential. We also welcome that measures have been identified for Seas of the Hebrides and Southern Trench possible NCMPAs to protect forage fish including sandeels, in recognition of the pivotal role they play in supporting healthy marine ecosystems. However, more work needs to be done in assessing and appropriately managing the impacts of scallop dredging on sandeels. As scallop dredging can penetrate up to 6 cm into the sediment (Currie and Parry, 1996) and sandeels tend to burrow within the top 4 cm of the seabed (Behrens et al., 2007), it seems likely that surface abrasion to depths of 6 cm could impact a large proportion of the sediment suitable for sandeels. Furthermore, the FEAST tool states that 'there is some evidence that scallop dredges can kill sandeels buried in the sediment (Eleftheriou & Robertson, 1992) but, at present, insufficient information to quantify the level of mortality this fishery causes.' Sandeels are a key prey species of

predators, including seabirds and cetaceans, as well as important bioturbators of the sediment, they are also a Priority Marine Feature in their own right. In light of the UK Marine Strategy's recent assessment, conservation of sandeels could be one key way of supporting the recovery of seabird populations and contribute to wider ecosystem improvement. A more precautionary approach should be taken with respect to scallop dredging over sandeel habitat until it can be proven not to have a significant impact. We note that Risso's dolphin feed on octopus, cryptic animals that benefit from shelter provided in complex seabed habitats and note that the status and pressures on prey habitat does not appear to have been considered. Use of heavy bottom-contact fishing gear can simplify seabed habitats so we would recommend that site-condition monitoring includes consideration of the status and extent of prey habitat.

For static features, including northern seafan and sponge communities, burrowed mud and carbonate-producing habitats (such as maerl beds and horse mussel beds) as part of the marine geomorphology of the Scottish shelf seabed feature, management measures should appropriately restrict activities that cause physical abrasion to the seabed. This should include mobile demersal fishing gear, moorings and anchorages, and potentially static gear for sea fan and sponge communities.

See also question 5 for specific responses in relation to the management scenarios in the SEA.

Northeast Lewis possible NCMPA

Ecological coherence and linkages for these mobile species, their habitats and prey should be considered in the context of developing the entire MPA network and management measures for the sites being consulted on as well as other sites. For example, daytime feeding of Risso's dolphin probably occurs close to the seabed and is unlikely to be observed during visual boat surveys. However, the importance of the area for foraging Risso's dolphins is strongly implied by their year-round occurrence over multiple years, by the documented site fidelity of individual animals to the east coast of Lewis[7] and their observed foraging behaviours (groups of dolphins being spread out over a relatively large observable area and conducting longer dives of several minutes that are consistent with feeding). As a result, understanding the relationship of Risso's dolphin prey and habitat requirements should be added as a priority. Whilst there are no active fisheries directed at prey species, scallop dredging that is likely to impact the quality of the habitat for prey species, including octopus in particular, is happening in the NEL possible NCMPA area and surrounds, with an unknown impact on the ability of Risso's dolphins to forage.

LINK would like to make the following comments on the tables within Annex 1 of the North-East Lewis possible NCMPA 'Conservation and Management Advice' in relation to sandeel. On page 27 the site-specific advice in column 2 states: 'Conserve the sandeel aggregation in the site, particularly the locally high density of larvae to ensure its continued contribution towards the wider population.' We suggest this be changed to: 'Conserve the sandeel aggregation in the site, particularly *but not restricted to* the locally high density of larvae to ensure its continued contribution towards the wider population. This makes clear that all live stages of the feature are protected within the possible NCMPA.

We also suggest that on page 30, 'Conserve the distribution of sandeel within the site by retaining access to resources provided by the possible NCMPA, specifically that suitable habitat (coarse sand substrates) remains available and ensuring the processes supporting their prey (plankton) are not significantly altered.' Be changed to:

[7] https://www.cambridge.org/core/services/aop-cambridge-core/content/view/86B06016A5C5A8E8FCBE53205EFFA328/S0025315418000516a.pdf/rissos_dolphins_grampus_griseus_in_a_proposed_marine_protected_area_off_east_lewis_scotland_uk_20102017.pdf

'Conserve the distribution of sandeel within the site by retaining access to resources provided by the possible NCMPA, specifically *that at least an equivalent area of suitable habitat* (coarse sand substrates) remains available and ensuring the processes supporting their prey (plankton) are not significantly altered.' This is to ensure habitat loss does not occur due to human activities within the site.

Sea of the Hebrides possible NCMPA

LINK members also note that the advice suggests no management is required for fronts, despite this feature being listed as 'biodiversity'. Fronts in this region are clearly an important source of food for basking sharks and minke whales; Priede and Miller (2009)[8] and Miller et al. (2015)[9] demonstrates tagged basking sharks following the movement of a front on a seasonal basis. While the challenges of devising management measures to conserve a dynamic oceanic feature such as a front are considerable, we refer to Scales et al. who suggest that conservation measures for fronts could focus on their characteristic ecology (e.g. high plankton productivity and food web linkages).

We also note that "The geodiversity feature, marine geomorphology of the Scottish shelf seabed, is sensitive to physical change through sediment removal" and that "SNH advises that, in order to conserve this feature…the surface of the feature should be unobstructed." Further the "management advice to reduce these pressures recommends avoiding impacts on the most sensitive, carbonate-producing habitats (such as maerl beds and horse mussel beds) by considering siting of new developments and reducing intensity of static gear within the feature." We query why it is not also advised to reduce the intensity of mobile fishing gear within the marine geomorphology of the Scottish shelf seabed feature, including removal of mobile fishing gear pressure in those areas of the feature where fragile carbonate-producing maerl beds and horse mussel beds in particular are found. In existing NCMPAs where maerl and horse mussel beds are present the recommendation is for towed/active gear to be removed from the feature. This advice should also be applied in relation to known maerl bed and horse mussel bed features in the Sea of the Hebrides possible NCMPA.

Whilst we welcome the identification of data gaps for basking shark and Risso's dolphins for the Sea of the Hebrides and North East Lewis sites respectively, it is unsatisfactory that there are no such data gaps or survey requirements identified for minke whale in either the Sea of the Hebrides or Southern Trench sites.

LINK members are aware that specific research priorities for minke whales are being considered as part of the Dolphin and Porpoise Conservation Strategy (to also include minke whales), and that these priorities are likely to be defined at a national scale. The continued collection of data and observations of minke whale to further understand the species use of the Sea of the Hebrides or Southern Trench sites for key life cycle stages is essential and should be fully assessed and included in future documents. Further research into cumulative disturbance is also required in the Sea of the Hebrides given the levels of site faithfulness observed by minke whales through HWDT photo-identification research. The conservation benefits of the Sea of the Hebrides site must include the protection of important areas where minke whales feed, as well as protecting the high densities of minke whales between April and October as currently stated in the conservation and management advice for the site.

LINK members agree with the feature sensitivity assessment for minke whales in the Sea of the Hebrides site that identifies entanglement as the single largest known cause of direct mortality for minke whales in Scottish waters, with live animals also showing some evidence of previous non-lethal entanglement. The Scottish Entanglement

[8] Priede, I. G., & Miller, P. I. (2009). A basking shark (Cetorhinus maximus) tracked by satellite together with simultaneous remote sensing II: new analysis reveals orientation to a thermal front. Fisheries Research, 95(2-3), 370-372.

[9] Miller, P. I., Scales, K. L., Ingram, S. N., Southall, E. J., & Sims, D. W. (2015). Basking sharks and oceanographic fronts: quantifying associations in the north-east Atlantic. Functional Ecology, 29(8), 1099-1109.

Alliance (SEA), of which LINK members HWDT and WDC are partners, was established in June 2018 to provide a coordinated, comprehensive monitoring and engagement programme to better understand the scale and impacts of entanglements. The results of this project should be used to inform the adoption of best practice and management measures where required within the NCMPA to reduce the risk of entanglement. Initial analysis demonstrates that entanglement rates are higher than were previously known[10].

It is unclear how the conservation and management advice provided for the Sea of the Hebrides site relates to the lower, intermediate, upper management scenarios highlighted in the SEA for consideration. In the case of Acoustic Deterrent Devices (ADDs) which are known to disturb minke whales (McGarry et al., 2017)[11] the conservation and management advice at site level suggests minimising the risk of disturbance through the adoption of best practice guidelines (lower scenario in the SEA). This would be inadequate as devices would still be in operation with the potential to illegally disturb the protected features of the site. The inclusion in the SEA of an intermediate scenario to replace 50% of ADDs in aquaculture facilities with basking shark/cetacean appropriate devices at the end of life indicates that ADDs cannot follow best practice guidance and 100% would need to be replaced with alternatives to be effective in protecting the features.

Given the particular sensitivity of cetaceans to noisy activities the conservation and management advice to reduce or limit pressures by following best practice is not adequate and further consideration should be given to the upper scenario within the SEA which suggests no noisy activities should take place during minke whale and Risso's dolphin high season in the Sea of the Hebrides, Southern Trench and North East Lewis sites.

Moreover, by definition ADDs produce noise pollution that cause disturbance over considerable distances. Thus where no such activities are suggested to occur between April and October in the Sea of the Hebrides site in the upper scenario in the SEA, but missing from the conservation and management advice document, this must also include sources of noisy activity outside of the boundary which may propagate over the boundary into the possible NCMPA. including ADDs that have not been replaced with appropriate devices i.e. anti-predator nets. In the case where the boundaries of the Sea of the Hebrides site do not extend into the seas lochs which are widely used by industry creating noisy activities, i.e. ADDs in aquaculture, the propagation of the sound should equally be managed as though those noisy activities were inside the possible NCMPA. Their audio impact can extend for several kilometres and is known to displace cetaceans (Findlay et al., 2018 ; Coram et al., 2014).

The importance of a range of prey species (sand eel, herring and sprat) for minke whale in the Sea of the Hebrides site is highlighted in the SEA. The advice to support management suggests avoiding sand eel habitats for coastal development, cables and pipelines, marine disposal sites, and fisheries which is welcome and necessary. However, little advice exists to protect other important prey species such as herring or sprat, other than a recommendation for pelagic fisheries. Consideration of the wide range of prey known to be important to minke whales in the Sea of the Hebrides (MacLeod et al. 2004[12]; Pierce et al., 2004[13]) should be fully assessed and included in future management discussions.

[10] MacLennan, E., Leaper, R. and Dolman, S. 2019. Interim report from the Scottish Entanglement Alliance (SEA) on previously undocumented fatal entanglements of minke whales (Balaenoptera acutorostrata) in Scottish inshore waters. Paper presented to the International Whaling Commission Scientific Committee, Nairobi, Africa. May 2019.

[11] McGarry, T., Boisseau, O., Stephenson, S., Compton, R. (2017) Understanding the Effectiveness of Acoustic Deterrent Devices (ADDs) on Minke Whale (Balaenoptera acutorostrata), a Low Frequency Cetacean. ORJIP Project 4, Phase 2. RPS Report EOR0692. Prepared on behalf of The Carbon Trust. November 2017.

[12] Macleod, K., Fairbairns, R., Gill, A., Fairbairns, B., Gordon, J., Blair-Myers, C., & Parsons, E. C. (2004). Seasonal distribution of minke whales Balaenoptera acutorostrata in relation to physiography and prey off the Isle of Mull, Scotland. Marine Ecology Progress Series, 277, 263-274.

[13] Pierce, G. J., Santos, M. B., Reid, R. J., Patterson, I. A. P., & Ross, H. M. (2004). Diet of minke whales Balaenoptera acutorostrata in Scottish (UK) waters with notes on strandings of this species in Scotland 1992–2002. Journal of the Marine Biological Association of the United Kingdom, 84(6), 1241-1244.

The inclusion of management advice for wildlife tour operators within the Sea of the Hebrides, North East Lewis and Southern Trench sites is welcome, recognising the risk of collision and disturbance impacts on the protected features of the sites. However, the advice for management of these pressures to follow best practice guidelines including Scottish Marine Wildlife Watching Code (SMWWC) and WiSe accreditation scheme may not be adequate to address cumulative pressure or repeated encounters for vulnerable species which are targeted by a growing commercial sector. The SMWWC guidance is designed to provide guidance for individual encounters only and is not suitable for managing cumulative impacts. LINK concludes that the conservation and management advice should go further and present options for the development of local wildlife management schemes, monitoring and licencing to effectively manage the individual and cumulative impacts of the increasing likelihood of animals undergoing multiple encounters.

Presently the advice to management for minke whales is based primarily on the presence and persistent modelled density of animals in the area. Although this information is highly relevant for finding the location of the areas to be proposed as NCMPAs this information alone doesn't represent the knowledge which exists of the use of the area by minke whales throughout the year and over the period of recorded research. Therefore, we would like to highlight the existence of other data sets that are suitable for this purpose (and excluded from the analysis to locate these sites at a national level). Such data sets include photo-identification catalogues showing the site fidelity of animals utilising the area, and effort corrected tour operator data collected at a repeatedly fine spatial and temporal scale. The inclusion of other varieties of evidence that describe life history and long-term use of the areas are therefore relevant for the effective development of future management measures and advice.

Given that basking sharks are acknowledged to be "sensitive to collision with vessels, and somewhat sensitive to entanglement in fishing gear" we support advice to exclude drift and set net fishing gear but would also expect management advice to suggest reducing pressure from other fishing gear that poses a risk of entanglement, such as creel lines. Effort-based basking shark surveys identified the waters of Gunna Sound and around Oigh Sgeir as particular hotposts[14], consolidated by subsequent tagging studies and surveys that in turn may also have identified other areas where there is confidence that basking sharks aggregate in particularly large numbers at particular times of year. In such areas it would be reasonable to suggest spatial and effort management of creel deployment to provide maximum confidence that entanglement will not happen, particularly within identified basking shark hotspots, in addition to potential seasonal and zonal measures for other activities such as wildlife watching.

Shiant East Bank

We support the designation of Shiant East Bank possible NCMPA to protect the features listed and note that there is potential for measures at this site to provide wider benefits for other Priority Marine Features, including cod.

West of Scotland cod stocks have been depleted for a number of years[15]. The most recent ICES advice for the Greater North Sea region also indicated a huge decline in the North Sea cod stock[16] which, against the backdrop

[14] https://ore.exeter.ac.uk/repository/bitstream/handle/10871/20213/SNH%20Report%20339.%20Basking%20sharks.%20Speedie%20et%20al.%202009.pdf?sequence=1&isAllowed=y (Appendix III)

[15] ICES Advice on fishing opportunities, catch, and effort [West of Scotland cod] Celtic Seas ecoregion Published 28 June 2019 http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2019/2019/cod.27.6a.pdf

[16] ICES Advice on fishing opportunities, catch, and effort [cod] Greater North Sea Ecoregion Published 28 June 2019 http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2019/2019/cod.27.47d20.pdf

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of the recently published IPBES reports[17] conclusion that nature is declining at rates unprecedented in human history, is particularly worrying.

One management tool that should be used in conjunction with wider fisheries management measures to effectively support the recovery of Atlantic cod across Scottish and wider UK/EU waters is the designation of NCMPAs to protect important areas for key spawning and juvenile life stages. Spawning and Juvenile cod are known to be reliant on complex, coarse gravel and mixed sand habitats[1819]. High densities of juvenile cod have also been recorded in the Minches[20], as well as a few other hotspots in Scottish waters. Shiant East Bank possible NCMPA (located in the Minch) has circalittoral sands and mixed sediment communities listed as one of the potential protected features. Given the potential for this habitat to contribute to the recovery of the West of Scotland cod stock and the fact that Atlantic Cod are a Priority Marine Feature, we recommned this wider sea benefit of protecting Shiant East Bank NCMPA be considered.

Such an approach would be consistent with international action to recover Atlantic cod stocks. Several year-round closures have been designated in the Gulf of Maine by NOAA Fisheries working on behalf of the US Government. These came into effect in January 2018 to protect important juvenile cod habitats[21]

Southern Trench

For the protection of minke whale in the Southern Trench possible NCMPA, LINK members suggest that the same considerations for the Sea of the Hebrides possible NCMPA are relevant here. This site is a known minke whale feeding ground, and ecological linkages (protection of prey species) is also a key consideration. Responsible vessel behaviour in the presence of minke whales (as outlined in the SMWWC) should be followed and enforced.

LINK members recognise the extensive burrowed mud habitat as a feature within this proposed site and agree that "burrowed mud is highly sensitive to physical disturbance and can be sensitive to pollution" and that the extent and distribution of the habitat, the structure and functions it provides, and the diversity, abundance and distribution of typical species should be conserved in the Southern Trench possible NCMPA. Burrowed mud is a habitat identified in Scotland as a PMF and internationally as an OSPAR Threatened and declining habitat, therefore we agree that there should be a limitation of demersal mobile gear effort from the habitat. We note that there is a presumption of "sustainable use" in Scotland's MPAs, when for many widespread, sedimentary habitats and their associated species, including burrowed mud communities, we still do not understand what is or is not truly "sustainable"[22]. It is well-documented that using bottom-towed fishing gear "is one of the most widespread sources of physical disturbance to the continental shelf seas throughout the world"[23] shifting benthic communities into a new but less complex stable state, degrading "topographic complexity", with the "most severe impact…in biogenic habitats in response to scallop-dredging" and that, of most relevance to the Southern Trench possible NCMPA "soft sediment habitats, in particular muddy sands,…surprisingly vulnerable, with predicted recovery times measured in years"[24]. We acknowledge that the extent to which demersal mobile gear should be limited from the feature is a discussion to be had at the management stage should the site be designated, as the

[17] IPBES, Global Assessment Report on Biodiversity and Ecosystem Services, 2019. https://www.ipbes.net/global-assessment-report-biodiversity-ecosystem-services

[18] Gonzalez-Irusta, J, M,. & Wright, P, J,. (2015). Spawning grounds of Atlantic cod (Gadus morhua) in the North Sea. ICES Journal of Marine Science (2016), 73(2), 304–315.

[19] NOAA, Omnibus Essential Fish Habitat Amendment 2, 2017. https://www.habitat.noaa.gov/protection/efh/efhmapper/oa2_efh_hapc.pdf

[20] Gibb, F. M, Gibb, I. M, Wright, P, J,.2006. Isolation of Atlantic cod (Gadus morhua) nursery areas. Marine Biology DOI 10.1007/s00227-006-0565-0

[21] NOAA Fisheries, New Habitat Protections for Young Cod 2018 https://www.fisheries.noaa.gov/feature-story/new-habitat-protections-young-cod

[22] http://www.scotlink.org/wp/files/documents/SEL_SeafloorIntegrity_Report_A4_March19-1.pdf

[23] Kaiser, M. J., Ramsay, K., Richardson, C. A., Spence, F. E., & Brand, A. R. (2000). Chronic fishing disturbance has changed shelf sea benthic community structure. Journal of Animal Ecology, 69(3), 494-503.

[24] Kaiser, M. J., Clarke, K. R., Hinz, H., Austen, M. C., Somerfield, P. J., & Karakassis, I. (2006). Global analysis of response and recovery of benthic biota to fishing. Marine Ecology Progress Series, 311, 1- 14.

evidence supports, and we look forward to engaging constructively in any future consultation on management measures for this site.

LINK would also like to take this opportunity to reiterate the need for a wider strategy to manage the burrowed mud PMF in the Scottish marine area, as included in the LINK response to the Future of Fisheries Management discussion document. Burrowed mud is widespread in Scottish waters and is the main habitat over which Nephrops trawling takes place. SNH has identified Nephrops trawling as "likely to cause severe physical disturbance and a decline in species richness within this habitat, with large slow growing species such as seapens particularly at risk". The fishing-related pressures to which Burrowed Mud is susceptible are shown in Annex 1 of FeAST[25]. Not only is it highly susceptible to damage from trawling, but a high proportion of it is impacted by trawling on multiple occasions each year. It is probably the single habitat type that is most highly impacted by fisheries (as a percentage of its extent) and it is undoubtedly the most heavily impacted PMF.

The huge majority of the habitat is unprotected – either outside MPAs or inside the MPAs but outside no-trawl zones. The Scottish Government review of 11 priority PMFs includes an assessment of the percentage of the national resource that receives protection, but no such review of Burrowed mud has occurred. As well as the broad habitat type, Burrowed mud, there are a number of characteristic species of emergent macrofauna, such as tall seapens, fan mussels, burrowing anemones, etc. that are particularly susceptible to damage from trawling. As a result of their sensitivity, the distribution of these species is greatly reduced from their preindustrial levels, though the evidence for this is patchy. Furthermore, information on the distribution of relict populations is also sparse. The contribution of these macrofauna to the functioning of the burrowed mud ecosystem is not known, but it must be assumed that it is significant, and any plan for the conservation of burrowed mud should include scope for the conservation or recovery of the emergent macrofauna. Removal of Nephrops from targeted fishery, both creel and trawl, is also likely to affect ecosystem functioning as a result of reduction in the number of burrows as well as disruption of the trophic structure.

The National Marine Plan requires that PMFs are protected so that any significant impact on their national status is avoided. There is no definition of what constitutes national status – either on a Scotland basis or within smaller geographical sub-units. Given the near-perfect congruence of Nephrops trawling areas with burrowed mud, any plan for the management of the Nephrops fishery should equate to a plan for the management of the burrowed mud habitat. It is essential that a national plan for the conservation and recovery of the burrowed mud habitat be produced in order to inform plans for the Nephrops fishery.

4. Do you have any comments on the Business and Regulatory Impact Assessment for each site?

Yes

Please enter your comments about this question below. Please ensure you indicate which site(s) your comments refer to.

Comments (optional)

General comments

[25] https://www.marine.scotland.gov.uk/FEAST/

LINK refers back to its comments in question 3 in respect to the conservation objectives for the four mobile features within these proposed sites, as context for its response to this question.

LINK members note that the BRIA methodology is substantially incomplete as it fails to account for many of the ecosystem services that stand to benefit from the establishment of these possible NCMPAs. The document commissioned by the Scottish Government (Management Of The Scottish Inshore Fisheries; Assessing The Options For Change, January 2015) establishes a methodology for accounting for these services that should be followed in this case. For example, wildlife-watching tourism is not included in the list of sectors that may be affected by the designation, unless the Scottish Government is considering this sector under 'recreational boating'. We suggest that, given the different modus operandi of commercially organised boat tours compared to opportunistic recreational and pleasure craft, this sector should be considered separately.

More importantly, there has been no attempt to quantify the General Public Non-Use Value, which is likely to be substantial in the case of cetaceans and basking sharks. We also note that the BRIA doesn't consider military activities. Both these activities occur in the possible NCMPAs and both of which are identified in the conservation and management advice as potentially impacting the cetacean and shark features. Military exercises involving intense noise pollution, including active sonar must be excluded from the possible NCMPAs. Management of commercial wildlife watching is required, including possible regulatory measures such as licensing, to include training of crew in the law and appropriate behaviour around wildlife and impact monitoring requirements.

'Best practice' is stated multiple times in the context of a number of activities (e.g. commercial fishing, marine tourism), but it is not identified clearly what this means, how it will help achieve the conservation objectives, how it will be encouraged or how it will be monitored and enforced.

The Commercial Fisheries section does not include scallop dredging, that has actively been occurring in the Northeast Lewis region for at least the last 10 years that WDC has been undertaking surveys of the site. It is likely that scallop dredging has an impact on prey species, as the bottom-towed gear works over octopus habitat, having an unknown impact on Risso's dolphins.

The BRIA is not explicit about what is 'best practice' to prevent entanglement in static gear. Removal is suggested in the conservation and management advice, but only in the intermediate estimate in the BRIA. Set nets must be excluded from the possible NCMPA. Risso's dolphins use the site year-round and static gear should be excluded year-round for the prevention of entanglement and to conserve their primary prey species (cephalopods). Entanglement is also a known risk for minke whale and basking shark.

Regarding the alternative management scenarios for each of the proposed sites, LINK suggests that upper scenario should be taken as a reflection on its previous comments on the 'unknown' conservation status of minke whale, Risso's dolphin and sandeel, and the endangered status of basking shark. In addition to working with all domestic stakeholders in the development of management measures, discussions should be held with the Ministry of Defence to include them in the measures. LINK also notes that measures in the upper scenario for boat use and wildlife tour operators have only been applied in the Sea of the Hebrides possible NCMPA – this should include North-east Lewis too.

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

Yes

Please enter your comments about this question below. Please ensure you indicate which site(s) your comments refer to.

Comments (optional)

LINK Members have reviewed the Sustainability Appraisal, and its constituent documents, and have a number of concerns and clarifications in relation to the SEA. LINK members recognise that the alternative management scenarios (Table 4, P34 of SEA) have been developed for the purpose of this assessment and are not necessarily indicative of management measures that may be proposed for these sites in the future. However, we have a number of comments in relation to this table that we wish to outline here for future reference:

- Use of the word 'minimise' implies that some level of impact is acceptable; LINK members suggest that the target should be to reduce or remove pressure from the features within the MPA, depending on their management needs and the nature of the pressures that pose the highest risk to not achieving the conservation objectives.
- Upper scenario for bottom-contact fishing gear: how was the 40% mobile gear exclusion threshold defined? Is there evidence that this is sufficient restriction to achieve the conservation objectives?
- All commercial fishing activities suggest "reduce risks by using best practice" but it is unclear what 'best practice' means as no references to specific guides or schemes are included. LINK would like more information on how the Scottish Government propose to encourage, monitor and enforce best practice where it is stipulated in future management measures.
- Scenarios largely fail to acknowledge the presence of some mobile features year-round and focus on summer season only - Risso's dolphin and minke whales have been recorded throughout the year. For example, set nets should be excluded all year round, as some mobile species (and other mammals) are present all year – a reduction in gear use may be needed to avoid displacement, being mindful of other protected features, such as Harbour Porpoise, bottlenose dolphin and seal SACs.
- What are the current levels of herring and sprat fishing? Note that the IUCN Regional Assessment of Minke whale states: "The overlap of the diet of this species with the targets of commercial fisheries poses difficult questions in ecosystem management." LINK members consider that management of activities that impact the key prey species for the mobile features should be implemented, particularly where there is a reliance on particular prey items (e.g. Risso's dolphin and cephalopods).
- Section 4.2.30 - while we note that Risso's dolphins are not listed in this section it is worth highlighting that their populations are not considered 'favourable', but unknown. Additionally, it should be noted that Orca populations are not at 'favourable conservation status'.
- Section 5.4 - we disagree with the monitoring and mitigation conclusions;
- Section 5.5.5 - Assessment should consider cumulative impacts of a reduction in fishing effort, so as to prevent displacement outside of MPAs. This is particularly important when managing impacts for mobile species.
- Table 8 should consider military exercises, which are likely to be the major impact for Risso's dolphins and minke whales, as well as static gear, as there is evidence of entanglement of Risso's dolphins in UK waters.
- Section 5.5 doesn't consider displacement impacts on the porpoise SAC.

In many cases it is unclear how the conservation and management advice provided in the site level documents relates to the lower, intermediate, upper management scenarios highlighted in the SEA. For instances where information presented in the SEA has not been adequately referred to in the context of the site-specific management measures.

LINK members suggest a number of further considerations for the management of activities within these sites:

Commercial fishing

- Mobile fishing - where sites are managed to protect seabed features from bottom-towed fishing gear, there would be knock-on benefits for prey species of mobile species using the sites. Particularly where sandeels (a designated feature of Northeast Lewis possible NCMPA) are protected. Monitoring should be mandatory on any mobile gear operating within MPAs in order to determine effort and pressure, and assess cumulative impacts
- Static gear - measures proposed are inadequate for cetaceans (see e.g. Reeves et al., 2013[26] etc). LINK members agree that set nets should be prohibited all year round in MPAs for mobile species to reduce entanglement risk. Entanglement risk by creel ropes should be managed based on the research results and recommendations from the Scottish Entanglement Alliance. Spatial separation of mobile gear from static gear would mean that the risk of gear loss would be reduced and might facilitate the introduction of other mitigation measures, such as curtailment of surface buoyage.
- Provision for proper disposal of decommissioned fishing gear and mechanisms for reporting/collection of lost fishing gear should be facilitated, to reduce the risk of cetacean entanglement in 'ghost gear'.

Renewable energy

Construction of offshore wind farms (including the use of pile driving and Acoustic deterrent devices) and tidal energy generation may cause negative impacts on cetaceans that are not fully understood. Prevention of potential impacts should be a priority within MPAs.

Marine tourism

Commercial wildlife-watching industry has the potential to impact cetaceans and basking sharks in particular through disturbance, although we acknowledge the contribution of this industry to raising awareness of species and collecting data. WiSe accreditation should be mandatory for operating within the MPAs, indeed LINK members believe WiSe training should be mandatory as standard nationally. However, it is not adequate as a measure in isolation because it provides no oversight on levels of activity. Therefore, options around a licensing system (local or national) should be explored to ensure all operators are accountable to the same level, in line with the conservation objectives of the sites.

Aquaculture

ADDs within the possible NCMPAs and at fish farms outwith the possible NCMPA where the audible range extends within the MPA should be prohibited to prevent disturbance to cetaceans. Measures to avoid entanglement of mobile species in fish farm nets, ropes and other gear should also be implemented.

[26] Reeves RR, McClellan K, Werner TB (2013) Marine mammal bycatch in gillnet and other entangling net fisheries, 1990 to 2011. Endang Species Res 20:71–97

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