

# FINAL REPORT

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## **Assessment of the adequacy of the Scottish MPA network for MPA search features: summary of the application of stage 5 of the MPA Selection Guidelines post consultation**

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# Assessment of the adequacy of the Scottish MPA network for MPA search features: summary of the application of stage 5 of the MPA Selection Guidelines post-consultation

## Introduction

The guidelines on the selection of Nature Conservation Marine Protected Areas (MPAs) (herein referred to as MPAs) in Scotland's Seas were published in February 2011 (Marine Scotland, 2011). Annex 1 of the guidelines sets out the five stage process that was followed to identify MPAs. Stages 1 to 4 are concerned with identifying search locations and prioritising between them. This report presents the results of the assessment of the MPA search features against the stage 5 guideline. This guideline was applied at a national level, and the focus was on determining the contribution that the Nature Conservation MPAs make to the ecological coherence of the network in Scotland's seas. More specifically it looks at whether the area makes a direct contribution to Scotland's MPA network through representation of features within the network, providing replication of these features and key linkages between features, reflecting the range and geographic variation of features, contributing to resilience and it is also the point where socio-economic considerations can be assessed. Further details of the stage 5 guideline are provided in Annex I of this document. The decision on whether the remaining four MPA proposals (Southern Trench, North-east Lewis, Shiant East Bank and Sea of the Hebrides - see SNH, 2014a) should go forward as possible MPAs is subject to Ministerial approval. However, this stage 5 assessment considers both the MPAs and the MPA proposals.

## Process

The stage 5 guideline is provided in Annex 1 and the feature-based assessment process is described in Annex 2. A stage 5 assessment has been completed for 36 of the 41 MPA search features. Insufficient data were available to identify any sites for four of the features: inshore deep mud with burrowing heart urchins; burrowing sea anemone aggregations; heart cockle aggregations, and European spiny lobster. White-beaked dolphin were removed from further consideration because the results of the habitat modelling work (outlined in SNH, 2014a) identified white-beaked dolphins are present at above average densities across a large proportion of Scottish territorial waters and it was therefore not possible to identify essential areas for the species. Stage 5 assessments have therefore not been completed for these five features. The results of the feature-based assessments are summarised in Annex 3. The results form part of the *Detailed Assessments Against the MPA Selection Guidelines* (DAAG) completed for each MPA. These detailed assessments are one of a suite of documents for each MPA (see [SNH](#) and [JNCC](#) MPA websites for further details and the site-specific assessment documents for territorial and offshore waters respectively).

There are five parts associated with stage 5 which in summary comprise:

- *Representation* - does representation of the feature within the MPA network reflect the OSPAR Regions considered to be important for the feature? This part of the assessment also includes consideration of the potential to represent features which are not listed as MPA search features but which could add to the broader representivity of the MPA network.
- *Replication* - is the feature included within more than one MPA/MPA proposal (or existing protected areas / area-based measures) where possible? If yes, is there replication across the OSPAR Regions in which the feature is recorded?
- *Linkages* - this part of the guideline will only be assessed in situations where there is a good understanding of the relationship between features in different areas to help build connectivity into the network. There is currently little evidence on which to base

linkage assessments for seabed habitats and low or limited mobility species in Scotland's seas. However, further research in this area will be considered in the future, including any development of the connectivity work by Marine Scotland Science.

- *Geographic range and variation* - do MPAs/MPA proposals (and existing protected areas / area-based measures) reflect the geographic range (e.g. examples of a feature found in sea lochs as well as examples of the feature in areas away from the coast and further offshore) and ecological variation (e.g. examples of the same habitat with different key and characterising species) of the feature in Scotland's seas?
- *Resilience* - is it considered necessary to include a greater proportion of some particularly threatened and/or declining features within the network?

These parts of the stage 5 guideline have been used to provide an assessment of the adequacy of the MPA network for the MPA search features.

## **Results**

Thirty-six MPA search features were assessed against the stage 5 guideline to determine adequacy of coverage in the network. Tables 1 to 4 in Annex 3 summarise the results and recommendations for the MPA search features, and Table 5 for features proposed to enhance coverage of features representative of Scotland's seas more generally. Summary results are provided below, presented by feature group (split into seabed habitats, low or limited mobility species, mobile species and large-scale features to reflect the MPA search feature listings) and against the different elements of the stage 5 guideline.

### **Summary by feature group**

#### ***Seabed habitats***

Assessment against the stage 5 guideline has been completed for 20 seabed habitats as shown in Table 1. Twenty-two MPAs are considered to make a significant contribution to the MPA network for these habitats. The network would be considered to be adequate for all the seabed habitats except for burrowed mud and inshore deep mud with burrowing heart urchins. For burrowed mud the protection which would be afforded to this feature if the Southern Trench MPA proposal was progressed would result in the network being considered adequate for this feature. Despite targeted sampling of the small number of previous records of inshore deep mud with burrowing heart urchins, we could not confirm the presence of this habitat in Loch Duich or Loch Sween. Therefore, it was removed as a proposed protected feature from these MPAs (SNH, 2014b). Future survey work will continue to look for other examples of this feature. Native oysters are considered to be adequate even though they have only been included within the Loch Sween MPA in OSPAR Region III (see Table 1 for further details). Similarly carbonate mound communities are also considered to be adequate even though one MPA (Hatton Bank cSAC) is considered to afford protection to the feature in OSPAR Region V (Carruthers *et al.*, 2011). On the basis of existing evidence it has not been possible to achieve replication within the network for these features. Should additional areas of importance for native oysters or carbonate mound communities be identified in future, then consideration should be given to including additional examples of these features within the MPA network to achieve replication and resilience.

### ***Low or limited mobility species***

Assessment against the stage 5 guideline has been completed for three<sup>1</sup> out of the five low or limited mobility species (see Table 2). Six MPAs make a significant contribution to the MPA network for these three species and the network is considered to be adequate for these low or limited mobility species. It was not possible to identify MPA search locations for heart cockle aggregations or burrowing sea anemone aggregations because of a lack of data on these features, and hence no stage 5 assessments have been undertaken.

### ***Mobile species***

Assessment against the stage 5 guideline has been completed on essential areas for eight out of the ten mobile species as shown in Table 3. As outlined previously, it was not possible to identify any MPA search locations for European spiny lobster because of a lack of data. White-beaked dolphin was removed from further consideration because it was not possible to identify areas that could be considered essential in Scottish territorial waters (SNH, 2014a). It has also been recommended that consideration of conservation policies and measures for white-beaked dolphin should be through either the species or wider seas pillars within Marine Scotland's Marine Nature Conservation Strategy (SNH, 2014a; Marine Scotland, 2011).

Eleven MPAs make a significant contribution to the MPA network for black guillemot, common skate, blue ling, orange roughy and sandeels. Of these features, the network is considered to be adequate for three of the mobile species (black guillemot, blue ling and orange roughy). Orange roughy is considered to be adequate even though one MPA (The Barra Fan and Hebrides Terrace Seamount) is considered to afford protection to the feature in OSPAR Region V. On the basis of existing evidence it has not been possible to achieve replication within the network for orange roughy because no additional evidence of areas critical to the life history of the species have been identified. Should additional areas of importance for orange roughy be identified in future, then consideration should be given to including additional examples of the feature within the MPA network to achieve replication and resilience.

If the Sea of the Hebrides and North-east Lewis MPA proposals were to be designated, basking shark, minke whale, Risso's dolphin and sandeels would also be considered to be adequately covered in the network. Of the remaining mobile species, common skate is not considered to be adequate (see Annex 3, Table 3 for further details). We have assessed both basking shark and Risso's dolphin as adequate, despite only identifying one MPA proposal for each species. This is because the MPA proposals are within OSPAR Region III which is considered to be important for these species and there are no locations considered to be essential areas for either species in territorial waters within OSPAR Region II. In addition, both species are highly mobile, ranging over large areas including those beyond Scotland's seas and therefore assessing replication at scales that are relatively small in comparison to their movements is likely to be less meaningful than, for example, for seabed habitats or low mobility species.

### ***Large-scale features***

Assessment against the stage 5 guideline has been completed for all five large-scale features as shown in Table 4. Seven MPAs are considered to make a significant contribution to the MPA network for these features. With these MPAs, the network is considered to be adequate for seamounts and areas of the continental slope. If the Sea of the Hebrides, Shiant East Bank and Southern Trench MPA proposals were to be designated, the network would be considered to be adequate for all large-scale features.

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<sup>1</sup> Fan mussel aggregations, northern feather star aggregations on mixed substrata, and ocean quahog aggregations.

### ***Broader representivity***

MPA search features have driven the identification of the possible Nature Conservation MPAs. However, to ensure that the MPA network is also representative of Scotland's seas more generally, and meets the legislative and OSPAR obligations for MPAs, other features may also be formally designated as protected features of these new sites to contribute to broader representivity. As part of the application of Stage 5 of the MPA Selection Guidelines, a parallel assessment was undertaken to identify seabed habitats within Scottish territorial waters that could be designated as protected features within the MPAs to achieve this wider habitat representation.

An initial review of designated / notified features associated with existing protected areas in the marine environment (i.e. SACs and SSSIs) and the MPA search feature list highlighted a lack of coverage of some broad sublittoral sediment habitat categories known to be present within Scottish territorial waters. The MPA search features were designed to address a number of the key 'gaps' in seabed habitat coverage and whilst they provide representation of sublittoral mud and a number of mixed substrates, they do not encompass the full spectrum of seabed sediment habitats in territorial waters.

To identify any remaining gaps in coverage, a broad assessment of the distribution and protection afforded<sup>2</sup> to seabed sediment habitats was undertaken at level 4 and 5 of the EUNIS classification<sup>3</sup>. As a result of the assessment a series of broad habitat classes were recommended and subsequently designated as protected features within six MPAs (see SNH, 2014b) and are a feature of the Shiant East Bank MPA proposal (see SNH, 2014a).

In addition to the broad sediment habitats, serpulid aggregations were added to the Loch Sunart MPA and white cluster anemones to the Small Isles MPA. Serpulid aggregations were included in Loch Sunart MPA because they are not currently afforded protected through the Annex I Reef feature of the Loch Sunart Special Area of Conservation. This is because they are not fully developed reef structures like those found in Loch Creran (Dodd *et al.*, 2009). The white cluster anemone is a Priority Marine Feature<sup>4</sup> but not an MPA search feature. However, it was added to the Small Isles MPA as a protected feature due to there being good examples of the feature in this area that were likely to be located in similar habitat to the northern sea fan and sponge communities, which are a protected feature of this site.

The focus of the stage 5 guideline is on the MPA search features and therefore no assessment against this guideline was undertaken for the representative features outlined above, although further information on the features is provided within the site specific Detailed Assessments Against the Guidelines available on the SNH website.

### **Summary by stage 5 guideline**

All references made to MPA search features below are based on the 36 features which underwent an assessment against the stage 5 guideline, and exclude the five which were not assessed (inshore deep mud with burrowing heart urchins, burrowing sea anemone aggregations, heart cockle aggregations, European spiny lobster and white-beaked dolphin).

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<sup>2</sup> Additional broad MPA search feature classes '*offshore subtidal sands and gravels*' and '*offshore deep sea muds*' in conjunction with other MPA search features, are considered to enable representation of the full range of sedimentary habitats in the offshore environment. Comparable features were not established in territorial waters.

<sup>3</sup> The European Nature Information System (EUNIS) habitat classification (Davies *et al.*, 2004) is the primary system for characterising the marine environment in the north-east Atlantic.

<sup>4</sup> Priority Marine Features are habitats and species which we consider to be marine nature conservation priorities in Scottish waters - <http://www.snh.gov.uk/protecting-scotlands-nature/priority-marine-features/>

### **Representation**

All of the MPA search features are considered to meet this part of the guideline. They are all represented within MPAs/MPA proposals and/or existing measures and the representation reflects the OSPAR Regions considered to be the most important for those features. Further consideration has been given to achieving broader representation of Scotland's marine environment (see *Broader representativity* above).

### **Replication**

This part of the guideline is considered to be met if there is more than one site for a feature within the MPA network. This has included an assessment of the extent to which replication between OSPAR Regions has been achieved. Following designation of 30 Nature Conservation MPAs in 2014 and subject to the progression of the four remaining MPA proposals, there would be more than one example of 29 of the 36 assessed MPA search features within the network.

However, to date it has not been possible to include more than one example of the following seven MPA search features within the network: carbonate mound communities; fan mussel aggregations; native oysters; basking shark; common skate; orange roughy; and, Risso's dolphin. Based on existing information, we have only been able to identify one MPA / MPA proposal for each of these features. For features other than common skate and native oysters, we consider it unlikely that additional areas will be identified (based on current knowledge). The specific reasons for this are outlined for each of the features in the tables presented in Annex 3. Therefore, we do not propose doing anything further for these features and have concluded that the replication guideline has been met. This conclusion will be subject to review as part of the 2018 network assessment update.

Based on our current understanding it is possible that there are essential areas for common skate around Orkney and along parts of the continental slope. The findings of any relevant studies will be assessed as part of the first review of the Scottish MPA network in 2018 (see SNH, 2014a for further details on studies proposed in relation to this species). Similarly, should additional areas of importance for native oysters be identified as a result of future survey work, these will also be reviewed in 2018. Further details of the work proposed are provided in Annex 3, Table 3.

### **Linkages**

The MPA Selection Guidelines highlight that consideration of linkages will focus on those relationships where there is a good understanding of connectivity. To date this assessment has focussed on the mobile species and large-scale features. For the mobile species the assessment has focussed on an understanding of the relationship with the species' use of the wider environment. For example, the North-West Orkney possible MPA is of importance for export of sandeel larvae to grounds in Shetland in the north and south to the Moray Firth. For the large-scale features, the focus has been on the relationships between the large-scale features and other habitats and species in terms of the support provided. This includes species that range over wider areas, such as top predators. Based on current evidence and knowledge the large scale features and mobile features have met this part of the guideline, but see comments on the further work recommended for mobile species with regard to replication.

There is currently little evidence on which to base assessments of linkages for seabed habitats and low or limited mobility species in Scotland's seas. Whilst there is information available for some species on dispersion distances, this cannot be readily applied to areas with complicated currents and tidal flows. Therefore, we will consider further work, including the development of work on connectivity by Marine Scotland Science (Gallego et al., 2013), in the future as this becomes available.

### **Geographic range and variation**

This part of the guideline is considered to have been met if the geographic range and ecological variation of MPA search features is reflected in the Scottish network. The MPAs/MPA proposals are largely considered to reflect the geographic range and the known ecological variation of the MPA search features. There are two features which are not currently considered to meet this part of the guideline: native oysters and common skate. The identification of additional sites to represent the geographic range of common skate should be a priority task and considered as part of the network review in 2018. As discussed previously, it is proposed that no further examples of native oysters are included within the network at the current time but we will also review this situation in 2018 (see Table 1 for further details).

### **Resilience**

The assessment of resilience was based on consideration of whether or not features were considered to be threatened and/or declining and therefore should have a greater proportion<sup>5</sup> included within the network. As a result of this assessment, it is recommended that a greater proportion of 14 MPA search features<sup>6</sup> be included within the MPA network.

For 8 of the 14 MPA search features (burrowed mud, deep-sea sponge aggregations, flame shell beds, maerl beds on the west coast of Scotland, seamount communities, northern feather star aggregations on mixed substrata, ocean quahog aggregations and black guillemot) we encompassed additional examples of these features to achieve resilience within the MPA network.

However, for the remaining six features, i.e. carbonate mound communities; fan mussel aggregations; native oysters; basking shark; common skate, it has not been possible to include more than one example within the network (see Table 1 for further details).

### **Discussion**

The application resulted in some significant changes to features within MPAs/MPA proposals. The stage 5 consideration focussed on ensuring inclusion within the network is adequate. For some features, this led to recommendations to increase the number of examples within the MPA network to meet, for example, the resilience part of the stage 5 guideline, but for others it involved some prioritisation between options.

The assessment of connectivity has focussed on the mobile species and large-scale features, which meet the linkages part of the stage 5 guideline. There is currently little evidence on which to base assessments of linkages for seabed habitats and low or limited mobility species in Scotland's seas. Whilst there is information available for some species on dispersion distances, this cannot be readily applied to areas with complicated currents and tidal flows. Connectivity will require further consideration in the future, including the development of work on this subject by Marine Scotland Science.

As further information on the distribution and extent of features becomes available, it will be possible to review our assessment of adequacy. For example, for common skate and native

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<sup>5</sup> Note that 'a greater proportion' has been interpreted as including one or more additional example of a feature within the MPA network, above the examples required to meet the replication part of the stage 5 guideline. The degree of the increase/ greater proportion varied between features and was based on how threatened and declining the features were known to be, their distribution and the proportional importance of Scottish waters.

<sup>6</sup> Common skate\*, black guillemot, basking shark\*, ocean quahog aggregations\*, northern feather star aggregations on mixed substrata, fan mussel aggregations, burrowed mud\*, carbonate mound communities\*, deep sea sponge aggregations\*, flame shell beds, maerl beds\*, native oysters\*, seamount communities\*, shallow tide swept coarse sands with burrowing bivalves (\* denotes OSPAR T&D).

oysters, further data may enable the selection of additional MPA proposals which in turn could enable replication of these features within the Scottish MPA network.

The results of the assessment presented in this report are based on the series of MPAs which were designated in 2014. Following the decisions relating to consultation and any potential designation of the four MPA proposals, it may be necessary to revise the assessment.

## Conclusions

If the MPA proposals are designated as Nature Conservation MPAs then 34 of the 37 MPA search features would be considered adequate.

The actions and timeframes associated with the three remaining features are summarised below:

- *Inshore deep mud with burrowing heart urchins* – future survey work will continue to look for examples of this feature. Should it be recorded, this feature will be re-assessed as part of the next six-yearly review of the network to be undertaken.
- *Common skate and native oyster* - further survey work is underway and the results will be considered as part of the review of the network in 2018.

The adequacy of the MPA network in Scotland's seas will continue to be reviewed as part of the six-yearly review cycle as set out in the UK Marine & Coastal Access Act (2009) and the Marine (Scotland) Act 2010.

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*Annex 1 Stage 5 guideline to assess ecological coherence to prioritise between different areas according to their contribution to the MPA network.*

Stage 5 should be undertaken at a network level. This stage is not simply about assessing the contribution that a potential area might make to the network. It involves weighing up the relative contributions of different potential areas and selecting those which collectively make the best contribution to achieving an ecologically coherent network. Where two or more areas could make an equivalent contribution to the network then socio-economics can be considered in deciding which to take forward.

It is at this stage that the inclusion of features which are representative of Scotland's seas more generally will be considered. This will be achieved through an assessment of the presence of representative marine habitats and species within potential areas. Consideration will be given to which MPA search features are represented and the case for including other features, the potential to do so within the areas identified (reassessing stage 3 and 4 as necessary) and whether there would be any significant gaps in terms of the coverage or representation. If existing locations are not sufficient further assessment of additional search locations to address these gaps would be required.

Several iterations, followed by re-assessments of elements of the process, may be necessary before the MPA network in waters adjacent to Scotland is considered complete. A limited number of iterations are likely to be done in the first cycle for identifying the network by 2012 to ensure that the first set of MPA proposals form a functioning and substantially complete network. The six-yearly reports to Parliament on the status of the network provide an opportunity to review experience and knowledge over time.

The importance of connectivity in supporting functioning marine ecosystems is recognised. In developing the network the focus is on linkages that are well understood and conserving features which would benefit from the protection afforded by a MPA, for example important life stages of highly mobile species.

<b>Guideline</b>		<b>Notes</b>
<i>Summary</i>	<i>More detailed definition</i>	
5. The potential area contributes significantly to the coherence of the MPA network in the seas around Scotland	<p>The area makes a direct contribution to the MPA network in terms of its overall coherence. This may include:</p> <ul style="list-style-type: none"> <li>• contributing to the representation <sup>v</sup> of features within the network;</li> <li>• providing replication of features within the network <sup>vi</sup></li> <li>• providing key linkages between relevant features within the network <sup>vii</sup>;</li> <li>• reflecting the range and geographic variation of features within the seas around Scotland, and/or</li> </ul>	<p>All parts of this guideline will take account of the contribution made by existing area-based management, including Natura sites.</p> <p>v. The representation of features within the MPA network will be assessed primarily at the scale of Scotland's seas with consideration of the contribution made to wider MPA networks e.g. at the UK level.</p> <p>For biodiversity, the contribution made by the potential areas in a region is expected to take account of the importance of the region for that feature. For geodiversity, it will be based on the contribution of the potential areas to the principal 'networks' of marine geodiversity interests present in Scottish waters. 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.</p> <p>vi. For biodiversity, OSPAR MPA Guidelines recommend that there should be replication of features within MPAs in each biogeographic area. These areas extend across the seas around Scotland and into adjacent waters and are therefore not being used directly for the assessment of replication. This part of the guideline will be considered to have been met if there is more than one example of each feature within the network in Scottish waters. For geodiversity there should be minimal duplication of features at a national level.</p>

<p>5. The potential area contributes significantly to the coherence of the MPA network in Scottish waters (contd.)</p>	<ul style="list-style-type: none"> <li>• contributing to the resilience of the network <sup>viii</sup></li> <li>• Socio-economic considerations will be assessed when 2 or more sites of equal ecological value have been identified <sup>ix</sup></li> </ul>	<p>vii. Linkages will be assessed only in those situations where there is a good understanding of the relationship between the features within different areas. It is expected that this will result in a focus on important locations in the life stages of highly mobile species. For example, this might include considering the relationship between areas used for courtship and those used for feeding by a particular species. The assessment must be undertaken within the wider management context i.e. not simply be restricted to considering linkages between MPAs but also taking account of initiatives that form part of the other pillars (e.g. species protection) and other area-based management.</p> <p>viii. It may in some cases be appropriate to include a greater proportion of some particularly threatened and/or declining features within the overall network.</p> <p>ix. Socio - economic evidence, advice and knowledge will be used to select the most appropriate area for designation as a Nature Conservation MPA, where more than one of the potential areas identified makes an equivalent contribution. Cultural and economic factors within areas will be identified in consultation with marine interests.</p>
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Annex 2 Approach used for applying the stage 5 selection guideline

Guideline part	Notes
<b>Representation</b>	<ul style="list-style-type: none"> <li>i. Refers to taking account of the importance of a region for a particular feature. This relates to the contribution of existing protected area and other area-based measures assessments, although considered in terms of OSPAR Regions rather than Scottish MPA regions.</li> <li>ii. The scale of assessment for MPA search features is focussed on Scotland's seas. The guidelines refer to taking account of wider networks as separate work. (NB Separate assessments will be conducted at a UK and OSPAR scale.) .</li> <li>iii. As for other parts of this guideline, the assessment incorporates more than just the MPA search features currently listed within MPAs / MPA proposals. The assessment of broader representativity is focussed on the broadscale habitats agreed at a European level, called EUNIS.</li> <li>iv. <b>Proposal for MPA search features: Is the MPA search feature represented? If yes, then does that representation reflect the region(s) which are considered to be important for the feature? The assessment should be informed by the recommendations of the 'contribution of existing protected areas' and 'other area-based measures' reviews, updated to reflect the OSPAR Regions.</b></li> <li>v. <b>Proposal for broader representivity (territorial waters only): Do we have examples of the range of broad scale habitats within the network (using the EUNIS classification as a guide)? Are there any good examples of other habitats and species that are not MPA search features that would provide for broader representation of Scotland's marine environment?</b></li> </ul>
<b>Replication</b>	<ul style="list-style-type: none"> <li>vi. Although OSPAR refers to replication within biogeographic regions, the guidelines refer to having more than one example of each feature within Scotland's seas. As for representation, it's not currently possible to take account of what's being done by other countries, but this may be something that is revisited in future.</li> <li>vii. Where possible at the Scottish scale there should be replication between different regions. In some instances this may not be possible, e.g. where a feature is only recorded within one OSPAR region. In others it may be the case that there is greater replication for some features to capture the geographic range and variation of a feature.</li> <li>viii. <b>Proposal: Is the feature (or its components) included within more than one existing measures, possible MPA or MPA proposal? If so, are these areas in more than one region?</b></li> </ul>

Guideline part	Notes
<b>Linkages</b>	<p>ix. The focus in the guidelines is on those features where we have a good understanding of the relationship/connectivity between features in different areas.</p> <p>x. There is currently little evidence on which to base assessments of linkages for seabed habitats and low or limited mobility species in Scotland's seas. Whilst there is information available for some species on dispersion distances, this cannot be readily applied to areas with complicated currents and tidal flows. We will consider further work, including the development of work on connectivity by Marine Scotland Science, in the future as this becomes available.</p> <p><b>xi. Proposal: For most features this will not yet be understood, but for others it should be made clear what our understanding is based on e.g. modelled dispersion distances or behavioural observations.</b></p>
<b>Geographic range and variation</b>	<p>xii. The network should encompass the geographic range of the feature and its known ecological variation across Scottish waters. This information is captured in the detailed ecological guidance (Lancaster <i>et al.</i>, 2014).</p> <p><b>xiii. Proposal: Do existing measures and the MPAs / MPA proposals reflect the geographic range and variation of the feature?</b></p>
<b>Resilience</b>	<p>xiv. The guidelines state that it may be necessary to include 'a greater proportion' of some particularly threatened and/or declining features within the network. One starting point is to use those features on the OSPAR T&amp;D list, but the assessment should also consider other information (e.g. direct evidence from survey/monitoring work of the status in Scotland's seas).</p> <p>xv. The proposed approach for considering 'a greater proportion' is to refer back to the other parts of this guideline. So if options have been identified under other parts of this guideline and the feature is considered to be T&amp;D etc., consideration of resilience might mean that you would include more than the minimum to build resilience into the network. For example, flame shell beds are considered to have declined and are still under threat in Scottish waters. The feature is also restricted to Region III so it is not possible to achieve replication between regions. Therefore, the recommendation is that we increase the number of examples of the feature within the network to provide resilience.</p> <p><b>xvi. Proposal: Summarise OSPAR T&amp;D status where relevant (and potentially also anything known about status from direct evidence in Scottish waters). Review recommendations and options from other parts of this guideline. Record whether more needs to be done for a particular feature to build resilience into the network.</b></p>

Guideline part	Notes
<b>Socio-economics and equivalent ecological value</b>	<p>xvii. SNH and JNCC's role is to identify what is of 'equal ecological value'. This can only be considered on a feature-by-feature basis unless two MPAs / MPA proposals are being considered for the same MPA search features. Here 'ecological value' is taken to mean contribution to the network and, as such, is a summary of the relevant parts of this guideline. Note Marine Scotland lead on the assessment of 'cultural and economic factors'.</p> <p>xviii. <b>Proposal: Summarise what the different MPAs / MPA proposals are likely to contribute to the MPA network in terms of the other parts of the stage 5 guideline. Draw a clear conclusion about whether any are considered to be of equal value.</b></p>

Annex 3 Summary results assessment of MPA search features against stage 5 of the MPA Selection Guidelines

Table 1. Seabed habitats: summary of assessment of MPA search features against stage 5 of the MPA Selection Guidelines.  
**NB** Where features have already been assessed as adequate in the report by Carruthers et al. (2011) this table just presents the conclusions of this report.

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
<b>Blue mussel beds</b>	<p><b>Adequate</b></p> <p>Feature considered well represented within the existing protected area network (Carruthers <i>et al.</i>, 2011).</p> <p>Note that the listed SACs were not selected specifically for blue mussel beds, rather the feature is part of the Annex I qualifying habitat(s).</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• Dornoch Firth and Morrich More SAC*</li> <li>• Firth of Tay and Eden Estuary SAC*</li> <li>• Moray Firth SAC*</li> <li>• Sullom Voe SAC*</li> </ul> <p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Loch Creran SAC*</li> <li>• Loch Laxford SAC*</li> <li>• Lochs Duich, Long and Alsh Reefs SAC*</li> <li>• Luce Bay and Sands SAC*</li> <li>• Solway Firth SAC*</li> <li>• Sunart SAC*</li> </ul>	N/a
<b>Burrowed mud</b>	<p><b>Adequate</b> - pending designation of MPA proposal</p> <p>MPAs / MPA proposals have been identified in OSPAR Regions II, III and V and comprise both biotopes and both component species. The burrowing megafauna and the mud volcano worm biotope and fireworks anemone are only included in Region III because their restricted distribution prevents replication between regions but they are replicated within this Region. Therefore the representation and replication parts of the guideline are met.</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• Central Fladen MPA</li> <li>• Southern Trench MPA proposal</li> </ul> <p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Wester Ross MPA</li> <li>• Small Isles MPA</li> <li>• Lochs Duich, Long and</li> </ul>	N/a

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
	<p>The MPAs / MPA proposals also reflect the geographic range and variation of burrowed mud and its components by including a range of environments from sea lochs to areas beyond the continental slope. In OSPAR Region II, The Central Fladen MPA and Southern Trench MPA proposal reflect the geographic range of seapens and burrowing megafauna in offshore waters and away from the coast, respectively. Additionally, the Central Fladen MPA includes the main area of verified records of the tall seapen in offshore waters in the Region. In OSPAR Region III Wester Ross MPA and Small Isles MPA provide examples of the tall seapen, and Lochs Duich Long and Alsh MPA and Upper Loch Fyne and Loch Goil MPA include records of the fireworks anemone. Seapens and burrowing megafauna is a component of the burrowed mud feature in the Small Isles MPA and South Arran MPA in a coastal environment. Burrowing megafauna and mud volcano worm is a component of burrowed mud within sea lochs in Upper Loch Fyne and Loch Goil MPA and Loch Sween MPA. In OSPAR Region V Geikie Slide and Hebridean slope and The Barra Fan and Hebrides Terrace Seamount MPAs provide representation and replication for the only component of burrowed mud in the Region - seapens and burrowing megafauna.</p> <p>Seapens and burrowing megafauna are included on the OSPAR T&amp;D list and there is evidence of damage/decline in Scotland's seas. Additionally Scotland's seas are proportionally important for this feature. Therefore, a greater proportion of the seapens and burrowing megafauna biotope has been included within the network to achieve resilience. For the other components of burrowed mud the number of examples within the network is considered adequate with regard to resilience.</p> <p>Ten MPAs/MPA proposals are included within the MPA network to represent the different components of this feature, its geographic range and variation across Scotland's seas and to achieve resilience.</p>	<p>Alsh MPA</p> <ul style="list-style-type: none"> <li>• Upper Loch Fyne and Loch Goil MPA</li> <li>• South Arran MPA</li> <li>• Loch Sween MPA</li> </ul> <p>OSPAR Region V</p> <ul style="list-style-type: none"> <li>• Geikie Slide and Hebridean slope MPA</li> <li>• The Barra Fan and Hebrides Terrace Seamount MPA</li> </ul>	
<b>Carbonate mound</b>	<b>Adequate</b> - The only record currently known to occur in Scotland's seas is protected.	OSPAR Region V	N/a

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
<b>communities</b>		NEAFC fisheries closure*	
<b>Coral gardens</b>	<p><b>Adequate</b> - Occurs only in OSPAR Region V.</p> <p>Three examples of the feature are protected by existing protected areas in Scotland's seas (Anton Dhorn SCI, East Rockall Bank SCI, and Hatton Bank cSAC) and therefore replication has already been met. Protection within existing protected areas captures the known ecological variation of the feature within Scotland's seas (Henry &amp; Roberts, 2014a).</p> <p>These three examples within the network also mean that resilience, with regard to this feature being an OSPAR Threatened and/or Declining habitat, has already been met.</p>	<p>OSPAR Region V</p> <ul style="list-style-type: none"> <li>• Anton Dhorn SCI and ICES fisheries closure*</li> <li>• East Rockall Bank SCI *</li> <li>• Hatton Bank cSAC &amp; NEAFC fisheries closure*</li> </ul>	N/a
<b>Deep sea sponge aggregations</b>	<p><b>Adequate</b></p> <p>Deep-sea sponge aggregation records occur in OSPAR Regions II and V.</p> <p>There is replication of the feature within OSPAR Regions II and V. As an OSPAR Threatened and/or Declining habitat, there is justification for a greater number of examples of the feature within the MPA network. Protection within existing protected areas and MPAs captures the known ecological variation of the feature within Scotland's seas (Henry &amp; Roberts, 2014b). Examples of the different ecological types of the habitat are considered well represented and adequately replicated within the MPA network.</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• Faroe-Shetland sponge belt MPA</li> <li>• North-east Faroe-Shetland channel MPA</li> </ul> <p>OSPAR Region V</p> <ul style="list-style-type: none"> <li>• East Rockall Bank SCI and*</li> <li>• Hatton Bank cSAC &amp; NEAFC fisheries closure*</li> <li>• Hatton-Rockall Basin MPA</li> <li>• Rosemary Bank Seamount MPA</li> </ul>	N/a
<b>Flame shell beds</b>	<p><b>Adequate</b></p> <p>Five MPAs for flame shell beds have been identified. All Scottish records of flame shell beds are from OSPAR Region III. Although it is not</p>	<p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Loch Sunart MPA</li> <li>• Loch Creran MPA</li> </ul>	N/a

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
	<p>possible to achieve replication between regions, replication has been achieved within the only region within which flame shell beds are recorded. Therefore representation and replication are considered to be met.</p> <p>The beds in the Wester Ross MPA and Upper Loch Fyne and Loch Goil MPA extend the geographic coverage of flame shell beds to the north and south respectively, representing the geographic range of the feature. There is no known ecological variation amongst different flame shell beds in Scotland.</p> <p>Although flame shell beds are not included on the OSPAR Threatened &amp; Declining list there is evidence of damage and decline in Scotland's seas. For this reason, and because it is not possible to achieve replication between regions additional examples of flame shell beds have been included within five MPAs to achieve resilience.</p>	<ul style="list-style-type: none"> <li>• Lochs Duich, Long and Aish MPA</li> <li>• Wester Ross MPA</li> <li>• Upper Loch Fyne and Loch Goil MPA</li> </ul>	
<b>Horse mussel beds</b>	<p><b>Adequate</b></p> <p>There are a number of examples covered by existing measures, however, an additional four have been included to complement these. Horse mussel beds are included in more than one existing measure/MPA in OSPAR Regions II and III where all Scottish records are located; therefore the replication and representation parts of the guideline are met.</p> <p>Scotland is of proportional importance for horse mussel beds in the UK. Whilst additional examples of horse mussel beds are not required to meet replication or resilience, we have included examples of this feature within MPAs for several reasons. The examples in Noss Head MPA and the Small Isles MPA were added because they provide unique examples of this feature. Noss Head MPA has the largest horse mussel bed in Scotland's seas, whilst the Small Isles MPA contains the deepest known bed and it is also unique in that it is in part interspersed with the fan mussel aggregation, and was not readily attributable to any of the existing horse mussel bed biotopes. Horse mussel beds in the Upper Loch Fyne and Loch Goil MPA and Fetlar to Haroldswick MPA add to the integrity of the</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• Fetlar to Haroldswick MPA</li> <li>• Noss Head MPA</li> <li>• Moray Firth SAC*</li> <li>• Sanday SAC*</li> <li>• Sullom Voe SAC*</li> </ul> <p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Small Isles MPA</li> <li>• Upper Loch Fyne and Loch Goil MPA</li> <li>• Loch Creran SAC*</li> <li>• Lochs Duich, Long and Aish Reefs SAC*</li> <li>• Loch Laxford SAC*</li> <li>• Loch Sunart SAC*</li> </ul>	N/a

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
	<p>MPAs and complement existing coverage within the region. .</p> <p>The beds in Fetlar to Haroldswick MPA and Upper Loch Fyne and Loch Goil MPA extend the geographic coverage of horse mussel beds to the north and south respectively. The Noss Head MPA extends the geographic range to the east beyond the Moray Firth SAC. The MPAs /existing protected areas cover all of the component habitats (biotopes) of horse mussel beds identified in Scottish waters.</p>		
<p><b>Inshore deep mud with burrowing heart urchins</b></p>	<p><b>Not assessed</b></p> <p>No sites are proposed for this feature.</p> <p>All Scottish records of inshore deep mud with burrowing heart urchins are from OSPAR Region III. The examples within Lochs Duich, Long and Alsh and Loch Sween were dropped from inclusion because the feature was not recorded in recent surveys of these areas.</p>	<p>None identified</p>	<p>Future survey work will continue to look for examples of this feature. Should it be recorded, this feature will be re-assessed as part of the review of the network in 2018.</p>

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
<b>Kelp and seaweed communities on sublittoral sediment</b>	<p><b>Adequate</b></p> <p>Feature considered well represented (in terms of encompassing the range of component biotopes and the elements of the stage 5 guideline i.e., representation, replication, geographic range and variation and resilience) within the existing protected area network (Carruthers <i>et al.</i>, 2011).</p> <p>Whilst additional examples of kelp and seaweed communities on sublittoral sediments were not required to achieve adequacy, four examples across OSPAR Regions II and III were included as protected features of Nature Conservation MPAs because of the quality of the examples and to add to the integrity of the respective sites.</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• Fetlar to Haroldswick MPA</li> <li>• Wyre and Rousay Sounds MPA</li> <li>• Moray Firth SAC*</li> <li>• Sanday SAC*</li> <li>• Sullom Voe SAC*</li> <li>• The Vadills SAC*</li> </ul> <p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Wester Ross MPA</li> <li>• South Arran MPA (encompasses Lamlash Bay FRA*)</li> <li>• Loch Laxford SAC*</li> <li>• Loch nam Madadh SAC*</li> <li>• Luce Bay and Sands SAC*</li> <li>• Sound of Arisaig (Loch Ailort to Loch Ceann Traigh) SAC*</li> </ul>	<p>N/A</p>
<b>Low or variable salinity habitats</b>	<p><b>Adequate</b></p> <p>The feature is replicated between OSPAR Regions II and III with multiple existing measures providing coverage in Region III. No additional MPAs are proposed as it is felt that the existing sites meet the adequacy requirements.</p> <p>This feature was removed from Upper Loch Fyne and Loch Goil MPA as it was not recorded in the 2013 survey. The feature is now considered to be largely restricted to small areas around the margins of the MPA</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• Sanday SAC</li> </ul> <p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Loch Creran SAC</li> <li>• Lochs Duich, Long and Alsh Reefs SAC</li> <li>• Loch Laxford SAC</li> </ul>	<p>N/a</p>

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
	subject to freshwater influence.	<ul style="list-style-type: none"> <li>• Loch nam Madadh SAC</li> <li>• Obain Loch Euphoirt SAC</li> <li>• Sunart SAC</li> <li>• Ulva, Danna and the McCormaig Isles SSSI</li> </ul>	
<b>Maerl beds</b>	<p><b>Adequate</b></p> <p>Maerl beds are included in more than one MPA and also within existing SACs in OSPAR Regions II &amp; III, the only regions where maerl beds are recorded in Scotland's seas. This meets the representation and replications parts of the guideline.</p> <p>Maerl beds are included on the OSPAR Threatened and/or Declining list and there is direct evidence of damage in Scottish waters. This feature has limited ability to recover from damage, with limited dispersal potential and therefore a greater proportion of this habitat was included within the MPA network. The MPA examples on the west coast (OSPAR Region III) have been included as additional examples to improve the resilience of the feature within this Region. Maerl beds have been included within MPAs in OSPAR Region II to better reflect the geographic range of this feature in Scottish waters. Additionally, these examples complement the inclusion of maerl beds in SACs by better reflecting the ecological variants of the feature. The recommended MPAs reflect the different physical settings and the ecological variants of the feature in Scottish waters (e.g. the most northerly beds in the Fetlar to Haroldswick MPA; examples from the largest discontinuous area of maerl beds in the UK in Wyre and Rousay Sounds MPA; the shallowest examples in Loch Sween with both species (<i>Lithothamnion glaciale</i> and <i>Phymatolithon calcareum</i>) and representation of the 'grand banks' of <i>Lithothamnium</i> in the Clyde Sea [from Chumley, 1918] off South Arran).</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• Fetlar to Haroldswick MPA</li> <li>• Wyre and Rousay Sounds MPA</li> </ul> <p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Loch Sween MPA</li> <li>• Wester Ross MPA</li> <li>• South Arran MPA (encompasses Lamlash Bay FRA*)</li> <li>• Loch Laxford SAC*</li> <li>• Loch nam Madadh SAC*</li> <li>• Sound of Arisaig (Loch Ailort to Loch Ceann Traigh) SAC*</li> <li>• Sound of Barra cSAC*</li> </ul>	N/a

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
<b>Maerl or coarse shell gravel with burrowing sea cucumbers</b>	<p><b>Adequate</b></p> <p>MPAs and SACs are present within OSPAR Region III. Whilst there are records in Region II these are widely and sparsely distributed and it has not been possible to identify any sites within this region and therefore the replication part of the guideline is considered to be met. This feature was previously recorded in Loch Laxford SAC (in 1991) but has not been recorded in more recent monitoring work (see Moore <i>et al.</i>, 2010). The two records within Loch nam Madadh SAC are from 1990. The situation is the similar for the Wester Ross MPA where the continued presence of this feature requires validation but is considered highly likely (see Moore <i>et al.</i>, 2011; Moore, 2014).</p> <p>MPAs have been identified to complement the inclusion of maerl and coarse shell gravel with burrowing sea cucumbers, in the two SACs and to reflect the known range within Scottish seas. There is a lack of information on the ecological variation of this feature and therefore this has not been considered with regard to this part of the guideline.</p> <p>A greater proportion of this habitat within the network has been proposed through additional examples within OSPAR Region III to address lack of replication between OSPAR regions and the sensitivity of the feature.</p>	<p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Wester Ross MPA</li> <li>• South Arran MPA</li> <li>• Loch nam Madadh SAC*</li> <li>• Sound of Arisaig (Loch Ailort to Loch Ceann Traigh) SAC*</li> </ul>	<p>N/a</p>
<b>Native oysters</b>	<p><b>Adequate</b> - pending further evidence</p> <p>Native oysters were not considered a suitable species to underpin the identification of individual MPAs because of insufficient data. However, given their status (they are included on the OSPAR T&amp;D list and their numbers and distribution are known to have declined significantly in Scotland's seas), they were included within one MPA . Native oysters were dropped as a feature from a second MPA (Wester Ross) prior to the 2013 MPA consultation (see page 3 of the <a href="#">Detailed assessment against the MPA Selection Guidelines</a> for this site for further details). No alternative to this site was proposed in 2013.</p> <p>Native oysters are therefore currently only represented within the Loch Sween MPA, in OSPAR Region III. This representation encompasses</p>	<p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Loch Sween MPA</li> </ul>	<p>The results of ongoing marine survey work will be considered as part of the review of the network in 2018.</p>

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
	<p>good examples of beds of the species, which are now thought likely to be present at only a handful of locations around Scotland. Records of native oysters in OSPAR Region II are widely and sparsely distributed and there are no longer considered to be any extant beds of the species in Scottish waters in this region.</p> <p>On the basis of existing evidence it has not been possible to achieve replication within the network (either within or between regions - see SNH and JNCC, 2012 for further details). However, the managed fishery within Loch Ryan is considered to make a contribution to the conservation of this species (see Cunningham <i>et al.</i>, 2011) and wider conservation measures will also be delivered through the species protection pillar of the Scottish Marine Nature Conservation strategy (Marine Scotland, 2011). Coverage within the network is therefore considered adequate at this time but if additional areas of importance for native oysters are identified in future, then consideration should be given to including additional examples of this feature within the MPA network to achieve replication and resilience as part of the review of the network in 2018.</p>		
<b>Northern sea fan and sponge communities</b>	<p><b>Adequate</b></p> <p>Feature considered well represented within the existing protected area network (Carruthers <i>et al.</i>, 2011).</p> <p>A MPA and an MPA proposal for northern sea fan and sponge communities have been identified in OSPAR Regions II, along with the existing SACs offering protection. The additional MPA and proposal are not required to achieve adequacy because of the protection already provided by existing measures. However, the examples within the Small Isles MPA and the Shiant East Bank MPA proposal are being recommended because, they are good quality examples, add to the integrity of these proposals and complement the existing protection in Region III.</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• Pobie Bank SCI*</li> </ul> <p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Shiant East Bank MPA proposal</li> <li>• Small Isles MPA</li> <li>• Firth of Lorn SAC*</li> <li>• Loch nam Madadh SAC*</li> <li>• St Kilda SAC*</li> <li>• Sunart SAC*</li> </ul>	N/a
<b>Offshore deep sea muds</b>	<p><b>Adequate</b></p> <p>There is adequate representation and replication as far as possible for</p>	<p>OSPAR Regions I and II</p> <ul style="list-style-type: none"> <li>• North-east Faroe-</li> </ul>	N/a

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
	<p>offshore deep sea muds across each of the physical settings it occurs (on the continental shelf, slope and deep-sea), across its geographic range (in OSPAR Regions I, II &amp; V) and in areas under different water body influence (Atlantic and Arctic influenced examples).</p> <p>In OSPAR Regions I and II on the continental slope and deep-sea, the large extent of Atlantic and Arctic influenced offshore deep-sea muds is included within the North-east Faroe-Shetland Channel MPA. East of Gannet and Montrose fields MPA is representative of one of the very few areas of Atlantic influenced offshore deep sea muds on the shelf in OSPAR Region II.</p> <p>In OSPAR Region V, Geikie Slide and Hebridean Slope and The Barra Fan and Hebrides Terrace Seamount represent examples of offshore deep-sea mud on the continental slope. In this Region off shelf Atlantic influenced offshore deep sea muds are considered sufficiently replicated in existing protected areas but it is also protected within the Hatton-Rockall Basin MPA on the grounds of increasing coverage of the geographic range for the feature in the west of the Region.</p>	<p>Shetland channel MPA</p> <ul style="list-style-type: none"> <li>• East of Gannet and Montrose fields MPA</li> </ul> <p>OSPAR Region V</p> <ul style="list-style-type: none"> <li>• Geikie slide and Hebridean slope MPA</li> <li>• The Barra Fan and Hebrides Terrace Seamount MPA</li> <li>• Hatton-Rockall Basin MPA</li> <li>• Darwin Mounds Fisheries Area*</li> <li>• North-west Rockall Mound Fisheries Area*</li> </ul>	
<p><b>Offshore subtidal sands and gravels</b></p>	<p><b>Adequate</b></p> <p>There is adequate representation and replication as far as possible for offshore subtidal sands and gravels across each of the physical settings it occurs (on the continental shelf, slope and deep-sea), across its geographic range (in OSPAR Regions I, II, III &amp; V) and in areas under different water body influence (Atlantic and Arctic influenced examples).</p> <p>In OSPAR Regions I and II, the Faroe-Shetland sponge belt and North-east Faroe-Shetland Channel MPAs represent and replicate Arctic and Atlantic influenced examples of the feature on the continental slope and in the deep-sea.</p> <p>In OSPAR Region II, the Firth of Forth Banks Complex MPA and the West Shetland Shelf MPA provide replication for the feature on the continental shelf in OSPAR Region II.</p> <p>In OSPAR Region III, Geikie Slide and Hebridean Slope and West</p>	<p>OSPAR Region I</p> <ul style="list-style-type: none"> <li>• Faroe-Shetland sponge belt MPA</li> <li>• North-east Faroe-Shetland channel MPA.</li> </ul> <p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• Faroe-Shetland sponge belt MPA</li> <li>• North-east Faroe-Shetland Channel MPA</li> <li>• Firth of Forth Banks Complex MPA</li> <li>• West Shetland Shelf</li> </ul>	<p>N/a</p>

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
	<p>Shetland Shelf MPAs provide replication for the feature on the continental shelf and in OSPAR Region V Geikie Slide and Hebridean Slope and The Barra Fan and Hebrides Terrace Seamount MPAs provide replication for the feature on the continental slope.</p> <p>In OSPAR Region V, off-shelf examples of offshore subtidal sands and gravels are considered adequately protected by existing protected areas.</p>	<p>MPA</p> <p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• West Shetland Shelf MPA</li> <li>• Geikie Slide and Hebridean Slope MPA</li> </ul> <p>OSPAR Region V</p> <ul style="list-style-type: none"> <li>• Geikie Slide and Hebridean Slope MPA</li> <li>• The Barra Fan and Hebrides Terrace Seamount MPA</li> <li>• Darwin Mounds Fisheries Measure*</li> <li>• Hatton Bank NEAFC Fisheries Closure*</li> <li>• North-west Rockall Mound Fisheries Area*</li> </ul>	

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
<b>Seagrass beds</b>	<p><b>Adequate</b></p> <p>Feature considered well represented within the existing protected area network (Carruthers <i>et al.</i>, 2011).</p> <p>The seagrass beds within South Arran are not required to achieve adequacy because of the protection already provided by existing measures. However, the bed within Whiting Bay is believed to be the largest seagrass bed within the Firth of Clyde and adds to the integrity of the South Arran MPA.</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• Dornoch Firth and Morrich More SAC (&amp; SSSI)*</li> <li>• Firth of Tay and Eden Estuary SAC*</li> <li>• Loch Fleet SSSI*</li> <li>• Loch of Stenness SAC*</li> <li>• Longman and Castle Stuart Bays SSSI*</li> <li>• Moray Firth SAC*</li> <li>• Sanday SAC*</li> <li>• The Vadills SAC*</li> </ul> <p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• South Arran MPA</li> <li>• Loch nam Madadh SAC*</li> <li>• Loch Roag Lagoons SAC*</li> <li>• Moine Mhor SAC*</li> <li>• Obain Loch Euphoirt SAC*</li> <li>• Sound of Arisaig (Loch Ailort to Loch Ceann Traigh) SAC*</li> <li>• Sound of Barra pSAC*</li> <li>• Sunart SSSI*</li> <li>• Ulva, Danna and the McCormaig Isles SSSI*</li> </ul>	<p>N/a</p>

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
<b>Sea loch egg wrack beds</b>	<p><b>Adequate</b></p> <p>Feature considered well represented within the existing protected area network (Carruthers <i>et al.</i>, 2011).</p> <p>No possible Nature Conservation MPAs have been identified for this feature.</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• The Vadills SSSI*</li> </ul> <p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Loch Laxford SAC*</li> <li>• Loch Moidart and Loch Shiel Woods SAC*</li> <li>• Sunart SSSI*</li> </ul>	N/a
<b>Seamount communities</b>	<p><b>Adequate</b></p> <p>There are three seamounts recorded from Scotland's seas (Anton Dohrn, Rosemary Bank and Hebrides Terrace) that are all in OSPAR Region V.</p> <p>Seamount communities on Anton Dohrn are already considered to be adequately protected by an existing protected area. Both the Rosemary Bank and Hebrides Terrace Seamounts have been included in the network on the grounds of increasing resilience for seamount communities which are recognised under OSPAR as Threatened and/or Declining.</p>	<p>OSPAR Region V</p> <ul style="list-style-type: none"> <li>• Anton Dohrn SCI and ICES fisheries closure*</li> <li>• Rosemary Bank Seamount MPA</li> <li>• The Barra Fan and Hebrides Terrace Seamount MPA</li> </ul>	N/a
<b>Shallow tide-swept coarse sands with burrowing bivalves</b>	<p><b>Adequate</b></p> <p>This feature is included in more than one MPA in each of the OSPAR regions where it is known to occur in Scotland's seas, meeting representation and replication parts of the guideline. There is no known ecological variation of this feature in Scotland's seas and the two MPAs and existing sites reflect its known geographic range. This feature is not included on the OSPAR Threatened and/or Declining List but is considered to be threatened and declining in Scottish waters (Howson <i>et al.</i>, 2012) and hence additional examples have been put forward to achieve resilience.</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• Fetlar to Haroldswick MPA</li> </ul> <p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• South Arran (encompasses Lamlash Bay FRA*)</li> <li>• Sound of Barra pSAC*</li> </ul>	N/a

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
<b>Tide-swept algal communities</b>	<p><b>Adequate</b></p> <p>Feature considered well represented within the existing protected area network (Carruthers <i>et al.</i>, 2011).</p> <p>No Nature Conservation MPA proposals have been identified for this feature.</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• Sanday SAC*</li> <li>• Sullom Voe SAC*</li> <li>• The Vadills SAC*</li> </ul> <p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Firth of Lorn SAC*</li> <li>• Loch Laxford SAC*</li> <li>• Loch nam Madadh*</li> <li>• Loch Roag Lagoons SAC*</li> <li>• Lochs Duich, Long and Alsh Reefs SAC*</li> <li>• Luce Bay and Sands SAC*</li> <li>• Sunart SAC*</li> <li>• Treshnish Isles SAC*</li> <li>• Ulva, Danna and the McCormaig Isles SSSI*</li> </ul>	<p>N/a</p>

Table 2. *Low or limited mobility species: summary of assessment of MPA search features against stage 5 of the MPA Selection Guidelines*

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
<b>Burrowing sea anemone aggregations</b>	<b>Not assessed</b> Throughout the process we have reviewed data on burrowing sea anemones and have not found any examples of aggregations - only scattered individuals. No stage 5 assessments have therefore been undertaken for this feature. This is because there were considered to be insufficient data to use these species to underpin the selection of Nature Conservation MPAs.	N/a	N/a
<b>Fan mussel aggregations</b>	<b>Adequate</b> The MPA has been identified in Region III where the only known fan mussel aggregation in Scotland's seas is located. It is considered to be the largest in UK waters. It has not been possible to achieve replication of this feature because there is only this known example. There is no known geographic range or ecological variation to assess this part of the guideline. Fan mussels are considered to be threatened and declining within Scotland's seas but currently it is not possible to increase the proportion of this feature within the network. Therefore, in future if additional aggregations are recorded, consideration should be given to including at least one more example of a fan mussel aggregation within the network to ensure that the replication and resilience parts of this guideline can be met.	OSPAR Region III • Small Isles MPA	N/a
<b>Heart cockle aggregations</b>	<b>Not assessed</b> No stage 5 assessment has been undertaken for heart cockle aggregations. This is because there were considered to be insufficient data to use these species to underpin the selection of NC MPAs.	N/a	N/a

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
<b>Northern feather star aggregations on mixed substrata</b>	<p><b>Adequate</b></p> <p>This feature is included within three MPAs in OSPAR Region III. It is not possible to achieve replication between Regions because whilst there are records in OSPAR Region II they are widely and sparsely distributed. Therefore it is considered that this meets the representation and replication parts of the guideline. The MPAs and existing measures cover the known geographic range of the feature and there is no known ecological variation although the MPAs and existing measures reflect the various environments where the feature occurs.</p> <p>However, it is recommended that a greater proportion of this feature is included within the MPA network for resilience because of the sensitivity of the feature and because it is not possible to achieve replication between regions.</p>	<p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Loch Laxford SAC*</li> <li>• Loch Sunart MPA</li> <li>• Small Isles MPA</li> <li>• Wester Ross MPA</li> </ul>	<p>N/a</p>
<b>Ocean quahog aggregations</b>	<p><b>Adequate</b></p> <p>There is adequate representation and replication for ocean quahog aggregations offshore in OSPAR Region II with MPAs focussed on extending the coverage of its geographic range in the Region. There is no known ecological variation for this feature in Scotland's seas. In OSPAR Region II the Faroe-Shetland sponge belt MPA represents the feature at the north-west of its geographic range and the Firth of Forth Banks Complex and Norwegian Boundary Sediment Plain MPAs at the south of its geographic range in Scotland's seas. As an OSPAR Threatened and/or Declining feature it is considered appropriate to increase the number of examples of the feature to meet resilience.</p>	<p>OSPAR Region II<sup>7</sup></p> <ul style="list-style-type: none"> <li>• Faroe-Shetland sponge belt MPA</li> <li>• Firth of Forth Banks Complex MPA</li> <li>• Norwegian Boundary sediment plain MPA</li> <li>• East of Gannet and Montrose Fields MPA</li> <li>• Sullom Voe SAC*</li> </ul> <p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Loch Laxford SAC*</li> <li>• Sound of Arisaig (Loch</li> </ul>	<p>Data are largely derived from oil and gas industry holdings and there is little information pertaining to numbers of individuals present within the records held.</p>

<sup>7</sup> Carruthers *et al.* (2011) note uncertainties / assumptions made regarding assignment of the MPA search feature category to records in these three SACs.

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
		Ailort to Loch Ceann Traigh) SAC*	

Table 3. *Mobile species: summary of assessment of MPA search features against stage 5 of the MPA Selection Guidelines*

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
<p><b>Basking shark</b></p>	<p><b>Adequate</b> – pending designation of MPA proposal</p> <p>One MPA proposal has been identified for basking shark, in OSPAR Region III which reflects the relative importance of this Region. Within this area there is evidence of consistent (seasonal) large numbers of sharks based on effort-corrected data; the presence of large groups or aggregations of basking sharks; and the presence of social and courtship-like behaviour. These aggregations and behaviours have only been observed in this area despite surveys covering large areas around the west of Scotland. Tagging work and habitat modelling to identify essential areas were completed before formal advice on this area was provided.</p> <p>Although only one location has been identified, due to the wide ranging nature of this species there are the potential for linkages with areas being considered for protection outwith Scotland’s seas. OSPAR Region III is of relatively greater importance compared to Region II because data indicate that this region and the MPA proposal is an essential area for the species, and no data on essential areas are known from Region II. Therefore, it is considered that the inclusion of basking sharks within the Scottish MPA network is adequate.</p> <p>Whilst the Sea of Hebrides proposal does not reflect known geographic range of basking shark in Scottish waters, it does reflect areas considered to be essential for this species and therefore this geographic range is considered to be met. Ecological variation has not been assessed as this is a wide ranging, large mobile species.</p>	<p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>Sea of the Hebrides MPA proposal is the only example of basking shark being considered for inclusion within the network.</li> </ul>	<p>Additional tagging work has been completed within the Sea of the Hebrides MPA proposal in summer 2013 to improve our understanding about the fine-scale use of the proposal by basking sharks. Habitat modelling work has also been completed. The results of both are being used to feed into a more detailed application against the MPA Selection Guidelines.</p>

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
	<p>Basking sharks are included on the OSPAR T&amp;D list and have declined historically in Scottish waters due to fishing activities. Therefore a greater proportion could be considered for inclusion within the MPA network. However, we consider that on the basis of our current understanding, all parts of the stage 5 assessment have been met. Should future information suggest places that could be considered as essential areas, consideration should be given to identifying additional MPA search locations for assessment against the MPA selection guidelines.</p>		
<p><b>Black guillemot</b></p>	<p><b>Adequate</b></p> <p>Possible MPAs for black guillemot have been identified in OSPAR Regions II and III, where all Scottish records are located. They are largely focussed in the Northern Isles and the west coast where the population is concentrated. The MPAs reflect the geographic range and variation of black guillemot and the different environments in which black guillemot are present. East Caithness Cliffs MPA provides the only example of this feature in the MPA network on the east coast of Scotland. Fetlar to Haroldswick MPA is within the most northerly part of the range of this species in the UK and is the most northerly example of the feature within the MPA network. Papa Westray MPA is within the core range of black guillemot in Scotland. Small Isles MPA is a moderately sheltered example within the southern part of the range of black guillemot in Scotland. Monach Islands MPA is an example of an exposed colony and extends coverage of the geographic range to the west. Clyde Sea Sill MPA is close to the southern limit of the species' range in the UK and provides a link with the population in Northern Ireland.</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• East Caithness Cliffs MPA</li> <li>• Fetlar to Haroldswick MPA</li> <li>• Papa Westray MPA</li> <li>• Small Isles MPA</li> <li>• Monach Islands MPA</li> <li>• Clyde Sea Sill MPA</li> </ul>	

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
	A greater proportion of black guillemots should be included within the MPA network because whilst black guillemots are not on the OSPAR T&D list, there is evidence of threat in Scotland's seas.		
<b>Blue ling</b>	<b>Adequate</b> There is replication for the protection of important areas for the life history of the species in the only OSPAR Region (V) where important areas for the species have been recorded.	OSPAR Region V <ul style="list-style-type: none"> <li>Blue ling protection area - edge of Rosemary Bank*</li> <li>Blue ling protection area - edge of continental slope*</li> </ul>	
<b>Common skate</b>	<b>Not adequate</b> - pending further research Only one MPA has been designated for common skate, in OSPAR Region III, where there is strong evidence for the presence of resident, mature individuals and egg cases have also been found. Replication cannot be achieved within the network or between regions without further evidence of fidelity in other areas. The MPA does not reflect the known geographic range in Scottish waters, as common skate have been recorded in trawl data across shelf seas and the continental slope. Common skate is included on the OSPAR T&D list and is known to have declined in Scottish waters, with it only being rarely recorded now in the North Sea. Therefore a greater proportion should be considered for inclusion within the MPA network if future data suggest other locations that could be considered as essential areas for common skate.	OSPAR Region III <ul style="list-style-type: none"> <li>Loch Sunart to the Sound of Jura MPA</li> </ul>	Further survey work is planned for common skate (e.g. around Orkney and along the continental slope) to help identify any essential areas. The results of this work should be used to assess whether additional MPA search locations should be identified for assessment against the MPA Selection Guidelines.
<b>European spiny lobster</b>	<b>Not assessed</b> There were insufficient data to identify any Nature Conservation MPAs for this species. Some protection is likely to be afforded by existing measures for Annex I reefs although it is recognised that this protection is only for part	OSPAR Region II <ul style="list-style-type: none"> <li>Berwickshire and North Northumberland Coast SAC*</li> </ul>	N/a

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
	<p>of their life cycle and that the sites were not identified specifically for European spiny lobster.</p>	<p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Firth of Lorn SAC*</li> <li>• Loch Laxford SAC*</li> <li>• St Kilda SAC*</li> <li>• Sunart SAC*</li> </ul>	
<p><b>Minke whale</b></p>	<p><b>Adequate</b> - pending designation of MPA proposals</p> <p>Two MPA proposals for minke whale have been identified in OSPAR Regions II and III, which reflect the main regions where this species is recorded in Scotland. Habitat modelling has been undertaken for this species to improve the evidence for links between the MPA proposals and essential areas for the species. This habitat modelling suggested there are four areas with higher than average predicted densities of minke whale, which could be considered as essential areas (see Paxton <i>et al.</i>, 2014)., The predicted regions of high density north of Aberdeenshire and in the Sea of the Hebrides are both supported by effort data. Both the proposals appear to show the consistent presence (albeit seasonal) of individuals as well as habitats of preferred prey species (e.g. sandeels) and locations with topographic structures (shelf banks and mounds and shelf deeps) which support high productivity and availability of prey species. Therefore only these two essential areas were progressed as MPA proposals. If these MPA proposals were designated the representation and replication parts of the guideline would be met.</p> <p>Minke whales are widely distributed throughout Scottish shelf waters. There are two broad swathes of relatively high abundance which occur down the east coast from the</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• Southern Trench MPA proposal</li> </ul> <p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Sea of the Hebrides MPA proposal</li> </ul>	

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
	<p>outer Moray Firth south to England and off the west coast of Scotland in The Minch, The Little Minch and the Sea of the Hebrides (Reid <i>et al.</i>, 2003). The relative abundance of minke whales within these two broad areas appears to be higher than elsewhere in the UK or North-west Europe. The MPA proposals cover significant parts of these two wider areas as described under representation and also cover the only two essential areas for the species in Scottish waters, which were predicted by habitat modelling and supported by observations of individuals, as described above. Therefore they are considered to meet the geographic range part of the guideline. Ecological variation has not been assessed as this is a wide ranging, large mobile species.</p> <p>Minke whale is not included on the OSPAR Threatened and/or Declining List and therefore it is not considered that a greater proportion needs to be included within the MPA network.</p>		
<b>Orange roughy</b>	<p><b>Adequate</b></p> <p>There is only one spatially definable area considered to be of importance to the life history of orange roughy in Scotland's seas; the Hebrides Terrace Seamount. This is included as a protected feature in The Barra Fan and Hebrides Terrace Seamount MPA.</p>	<p>OSPAR Region V</p> <ul style="list-style-type: none"> <li>• The Barra Fan and Hebrides Terrace Seamount MPA</li> </ul>	N/a
<b>Risso's dolphin</b>	<p><b>Adequate</b> - pending designation of MPA proposal</p> <p>One MPA proposal for Risso's dolphin has been identified in OSPAR Region III. The proposal is the only location in Scotland's seas where photo-ID has re-sighted Risso's dolphins between years. There is evidence of the proposal being an area where adults are regularly observed with calves, and possibly also a location with slope habitat that</p>	<p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• North-east Lewis MPA proposal</li> </ul>	N/a

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
	<p>supports high productivity/availability of prey species. Additional survey work and habitat modelling has been undertaken to improve the evidence for this proposal. There would only be one example of Risso's dolphin within the network. There are no other areas considered to be essential for Risso's dolphin within Scottish territorial waters. Therefore, the feature has been deemed to be adequate against the stage 5 guideline.</p> <p>Scottish waters are a stronghold for Risso's dolphin in a UK context. They are most common to the west of Scotland from the west coast to the edge of the continental shelf but are also recorded from the outer Moray Firth, the Aberdeenshire coast and the Shetland Islands (Reid <i>et al.</i>, 2003). The MPA proposal covers an important part of their range on the west coast of Scotland in the Outer Hebrides. Risso's dolphin is not included on the OSPAR Threatened and/or Declining List and therefore it is not considered that a greater proportion needs to be included within the MPA network.</p>		
<b>Sandeels</b>	<p><b>Adequate – pending designation of MPA proposal</b></p> <p>Areas considered to be of importance to the life history of sandeels (source areas for the net export of larvae or preferred areas for young) are included in OSPAR Regions II and III, meeting representation and replication parts of the guideline. In OSPAR Region II Mousa to Boddam MPA is a preferred area for young in the Shetland area. The North-west Orkney MPA is believed to provide larval export to Shetland in the north and Moray Firth in the south, and Turbot Bank MPA potentially provides larval export to the</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• Mousa to Boddam MPA</li> <li>• North-west Orkney MPA</li> <li>• Turbot Bank MPA</li> <li>• Sandeel fisheries measure (EC Reg 227/2013)*<sup>8</sup></li> </ul> <p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• North-east Lewis MPA proposal</li> </ul>	

<sup>8</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:078:0001:0022:EN:PDF>

MPA search feature	Summary of stage 5 assessment	Existing measures* and MPAs/MPA proposals	Further work required
	<p>south. In OSPAR Region III the North-east Lewis MA proposal provides an export of larvae to north-west Scotland sandeel grounds. Therefore the MPAs/MPA proposal provide linkages with sandeels across the continental shelf around Scotland.</p> <p>Sandeels are not being considered as a feature of the Firth of Forth Banks Complex MPA because they are considered to be adequately protected by an existing measure (EC Reg 227/2013)</p> <p>Modelling work indicates that the four MPAs/MPA proposals all lie within different dispersion areas and so have been or are recommended for inclusion within the network. As sandeels within Scotland's seas have declined and are considered to be vulnerable, there is justification for greater replication of important areas for sandeels in the network.</p>		
<p><b>White-beaked dolphin</b></p>	<p><b>Not assessed</b></p> <p>Following debate about the effects of climate change on the distribution of white-beaked dolphins on the west coast, this species was removed from further consideration in OSPAR Region III. However, it was included in habitat modelling work carried out for SNH (Paxton <i>et al.</i>, 2014a). The results of this work confirmed that white-beaked dolphins were widely distributed across the continental shelf around Scotland, being present at above average densities over a relatively large proportion of Scottish territorial waters. It was therefore not possible to identify essential areas for this species and so it was dropped from further consideration as part of the Scottish MPA Project.</p>		

Table 4. *Large-scale features: summary of assessment of MPA search features against stage 5 of the MPA Selection Guidelines*

MPA search feature	Summary of stage 5 assessment	Existing measures* and possible MPAs/MPA proposals	Further work required to support development of MPA proposals
<b>Continental slope</b>	<p><b>Adequate</b></p> <p>There is at least one area of the continental slope represented in each OSPAR region the feature has been recorded and the feature is considered to be of functional significance in both regions. Concerning linkages, the Faroe-Shetland Channel MPA is thought to be a migratory corridor for overwintering cetaceans.</p>	<p>OSPAR Regions I &amp; II</p> <ul style="list-style-type: none"> <li>• North-east Faroe-Shetland Channel MPA</li> <li>• The Faroe-Shetland sponge belt MPA</li> </ul> <p>OSPAR Region V</p> <ul style="list-style-type: none"> <li>• Geikie Slide and Hebridean slope MPA</li> <li>• The Barra Fan and Hebrides Terrace Seamount MPA</li> </ul>	N/a
<b>Fronts</b>	<p><b>Adequate</b></p> <p>MPAs/MPA proposals have been included in both OSPAR Regions II and III covering shelf seas. Therefore replication would be provided within the network. These are considered to be functionally significant examples.</p> <p>These examples reflect different types of shelf fronts in a range of settings, driven by a variety of environmental factors such as topography, tides and salinity. For example the Clyde Sea Sill MPA provides an example of a topographic and density-driven (freshwater) front, and the Sea of the Hebrides MPA proposal is a tidal / topographical driven front.</p> <p>Fronts are not considered to be threatened and/or declining and therefore a greater proportion does not</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• Southern Trench MPA proposal</li> </ul> <p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Clyde Sea Sill MPA</li> <li>• Sea of the Hebrides MPA proposal</li> </ul>	N/a

MPA search feature	Summary of stage 5 assessment	Existing measures* and possible MPAs/MPA proposals	Further work required to support development of MPA proposals
	need to be included within the network.		
<b>Seamounts</b>	<p><b>Adequate</b></p> <p>Seamounts are thought to play an important role with regards to key linkages and connectivity in the network and all seamounts in Scotland's seas are considered to be of functional significance. It is on these grounds that these MPAs have been recommended for inclusion in the network. Seamounts themselves are not considered to be threatened and/or declining (although see assessment for 'seamount communities').</p>	<p>OSPAR Region V</p> <ul style="list-style-type: none"> <li>• The Barra Fan and Hebrides Terrace Seamount MPA</li> <li>• Rosemary Bank Seamount MPA</li> </ul>	N/a
<b>Shelf banks and mounds</b>	<p><b>Adequate – pending designation of MPA proposal</b></p> <p>There is at least one example in each OSPAR Region in which the feature has been recorded. These are considered to be functionally significant examples, with the Firth of Forth Banks Complex MPA containing the most extensive bank and mound features on the Scottish continental shelf. This meets the representation and replication requirements of the guideline. They also reflect the known geographic range of the feature within the regions and there is no known ecological variation.</p> <p>Shelf banks and mounds are not considered to be threatened and/or declining and therefore a greater proportion is not recommended for inclusion within the network.</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• Firth of Forth Banks Complex MPA</li> </ul> <p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Shiant East Bank MPA proposal</li> </ul>	N/a
<b>Shelf deeps</b>	<p><b>Adequate – pending designation of MPA proposal</b></p> <p>If the Southern Trench MPA proposal is taken through</p>	<p>OSPAR Region II</p> <ul style="list-style-type: none"> <li>• Southern Trench MPA proposal</li> </ul>	N/a

MPA search feature	Summary of stage 5 assessment	Existing measures* and possible MPAs/MPA proposals	Further work required to support development of MPA proposals
	<p>to designation, there would be at least one example in each OSPAR Region in which the feature has been recorded, meeting representation and replication parts of the guideline. These are considered to be functionally significant examples. They reflect the known geographic range of the feature within the Regions. The Southern Trench MPA proposal is the deepest feature on the Scottish continental shelf. The shelf deeps within the Small Isles MPA represent a glacially scoured, open coast example of the feature. The existing example within the Firth of Lorn is the only known tidally-scoured example in Scottish waters.</p> <p>Shelf deeps are not considered to be threatened and/or declining and therefore a greater proportion does not need to be included within the network.</p>	<p>OSPAR Region III</p> <ul style="list-style-type: none"> <li>• Small Isles MPA</li> <li>• Firth of Lorn SAC*</li> </ul>	