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Progress towards completion of the UK network of marine Special Areas of Conservation for Annex I qualifying features (v1.1)

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Joint Nature Conservation Committee

Progress towards completion of the UK network of marine Special Areas of Conservation for Annex I qualifying features

June 2013[1]

Paper by Dan Bayley and Amy Ridgeway

1 Introduction

1.1 This paper sets out the approach being taken to complete the UK contribution to the network of marine Special Areas of Conservation (SACs) for Annex I habitats. Information is provided about the principles and criteria taken into account when identifying marine SACs, both individually, and as part of the UK network of marine SACs for Annex I habitats.

1.2 While the UK has now been deemed 'sufficient'[2] for most Annex I habitats by the European Commission, four habitat types[3] are still considered as 'Insufficient Moderate'[4], and in the case of sea caves in NE and NW Scotland also under 'Scientific Reserve'[5] (EC, 2012). Designated and candidate sites for completing the network in relation to these remaining four habitat types are presented.

1.3 The current paper will focus on sites designated for 'Reef' and 'Sandbanks which are slightly covered by seawater all the time' as these are the two habitats that are most widespread in UK offshore waters and there are sites required to make a large remaining contribution to the Natura 2000 network. JNCC has been responsible for identifying appropriate sites in UK offshore waters for these two habitats over the past 10 years. However, for completeness, sites designated for 'Submerged or partially submerged sea caves' and 'Submarine structures made by leaking gases' will also be briefly covered in the present paper.

1.4 This paper is an update to the previous paper JNCC 08 P14a presented to the Joint Committee on the progress towards the completion of the marine Natura 2000 network of sites in the UK (JNCC, 2009).

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[1] Minor changes were made to the total area of UK Annex I Sandbanks following the initial publication of this paper due to new data becoming available. These changes were incorporated in October 2013, however the remainder of the paper is unaltered.

[2] **Sufficient** - The occurrence of this species /habitat type is sufficiently well covered by the current SCIs; no further sites are required.

[3] These four habitats are:

i. 1110 Sandbanks which are slightly covered by sea water all the time;
ii. 1170 Reefs;
iii. 1180 Submarine structures made by leaking gases; and
iv. 8330 Submerged or partially submerged sea caves.

[4] **Insufficient Moderate** - One or several additional SCIs (or extensions of sites) are required to achieve a sufficient coverage of the Natura 2000 network for this species/ habitat type.

[5] **Scientific Reserve** - Further research is required to identify the best sites for this species / habitat type (research on identifying sites, on clarifying the correspondence of a habitat present to the definition of Annex I habitats, to clarify if the species' occurrence is regular, etc.).

2 The approach to completion of the UK network of marine SACs

2.1 The Habitats Directive provides the following principles and criteria for selection of SACs:

i. Article 3 introduces principles for the selection of a coherent European ecological network of Special Areas of Conservation. These principles are:

a. natural range (Article 3.1) – described below from paragraph 3.2;

b. sufficiency (the site series must enable favourable conservation status) (Article 3.1) – described below from paragraph 3.5; and

c. proportionality (Article 3.2) – described below from paragraph 3.8.

ii. Article 4 introduces criteria, set out in Annex III (described below from paragraph 3.10), for the selection of individual sites as a contribution to this network.

2.2 The assessment of the Member States' contributions towards the network is carried out at a biogeographic level by the European Commission.

2.3 However, in order to effectively advise UK Government on a suitable number and range of sites to propose to the Commission, JNCC has considered the development of a network in a whole UK context, and, to a more limited extent, in a wider European context (McLeod *et al.* 2005).

3 Application of the principles and criteria in developing the network

3.1 Further detail about how the principles and criteria set out in paragraph 2.1 have been applied in developing, and assessing, the UK network and its contribution to the network for the Atlantic biogeographic region is set out below.

The principle of natural range

3.2 Article 3.1 states that the network of sites shall enable the natural habitat types to be maintained (and/or restored) at a favourable conservation status within their natural range.

3.3 The natural ranges for the Annex I habitat types within UK waters have been mapped from seabed sediment data for the UK produced by the British Geological Survey along with additional survey information from academia, industry and contracts let by JNCC and the UK conservation agencies. These sources did not map the Annex I habitats directly, rather their data were interpreted by JNCC to provide a best approximation of the natural range in UK waters.

3.4 In 2003, the Joint Committee agreed that for site selection in offshore waters, at least one example of each habitat sub-type (that meets the Annex III criteria) in each Regional Sea (JNCC, 2004) within the site series should be sufficient to ensure minimum representation for the habitat within its natural range in the UK. However, more than one site for a particular habitat sub-type may be needed within the network in certain Regional Seas for those habitat sub-types which have a high

proportion of their UK distribution within one or two Regional Seas (e.g. shallow sandbanks and *Sabellaria spinulosa* biogenic reef which are concentrated in the Southern North Sea and Irish Sea).

The principle of sufficiency

3.5 The European Commission provided guidance to inform the first biogeographical seminars on what proportion of the national representation for each habitat type might be considered sufficient according to the principle of *sufficiency*. The indication was that less than 20% of the national resource of a particular habitat represented within the site series would be likely to be considered insufficient, and that more than 60% of the national resource would be likely to be considered sufficient.

3.6 Although these percentages were not derived specifically with the marine environment in mind, and the figures are not specific targets for national contribution to the network (CEC, 2007), they provide broad guidance as to how much of the UK resource for each of the habitat types should be included within the UK contribution to the Natura network.

3.7 Proportionality (paragraph 3.8) is also likely to be an important factor to inform judgements on sufficiency, but the European Commission cannot judge this fully until a complete submission of site proposals by all Member States within the Atlantic biogeographic region has been made. This parameter is also influenced by the consideration of structure and function issues.

The principle of proportionality

3.8 Article 3.2 requires each Member State to contribute to the Natura network in proportion to the representation within its territory of the Annex I natural habitat types.

3.9 The only data available to assess the proportion of habitat within UK waters in relation to that for the rest of the Atlantic biogeographic region are those included in the Article 17 reports provided by Member States in 2007 (European Topic Centre on Biological Diversity, 2008). For the Article 17 reports, some Member States did not report habitat area, and others reported in different ways, so the figures are very approximate.

Criteria for the selection of individual sites under Article 4

3.10 Sites are proposed on the basis of selection criteria as listed in Annex III of the Habitats Directive. These criteria are:

i. degree of representativity of the natural habitat type on the site;

ii. area of the site covered by the natural habitat type in relation to the total area covered by that natural habitat type within the national territory;

iii. degree of conservation of the structure and functions of the natural habitat type concerned and restoration possibilities;

iv. global assessment.

3.11 These criteria have been applied to each area which has been considered for selection as a site suitable for recommendation to Government as an SAC.

4 Habitat types subject to a scientific reserve and recent progress in the submission of sites to the Commission

4.1 Four marine habitats have been subject to a scientific reserve in the EU Atlantic bio-geographic region by the European Commission, meaning that additional SACs may be required for their adequate protection in waters away from the coast. These are:

i. 1110 Sandbanks which are slightly covered by sea water all the time;
ii. 1170 Reefs;
iii. 1180 Submarine structures made by leaking gases; and
iv. 8330 Submerged or partially submerged sea caves.

4.2 Of these four habitats, significant areas of sandbank and reef occur in UK waters. This wide occurrence presented JNCC and UK conservation agencies with greater choice of where sites should be selected and necessitated further consideration of the network principles as well as the application of site selection criteria.

4.3 The UK SAC network has been assessed in relation to these habitat types by JNCC, in conjunction with the UK conservation agencies when identifying those sites which should be progressed as SACs. The conclusions on sites that were required to complete the network are set out below.

4.4 Since the last report to Joint Committee in December 2008, 15 further offshore sites (Table 1) and 12 inshore sites (Table 2) have been submitted to the European Commission. Marine sites are classified as SAC, Site of Community Importance (SCI), or Candidate SAC (cSAC) according to their current status in the approval and designation process.

4.5 Areas of Annex I habitat are initially put forward as Areas of Search (AoS) before they are assessed to see if they fulfil the Annex III SAC selection criteria of the Habitats Directive. If they fulfil these criteria they are recommended to Government as draft SACs. The criteria are as follows:

- The degree of representativity of the natural habitat type on the site.
- The area of the site covered by the natural habitat type in relation to the total area covered by that natural habitat type within the national territory.
- Degree of conservation of the structure and functions of the natural habitat type concerned and restoration possibilities.
- Global assessment.

4.6 Following approval and recommendation to government there are four stages: draft SAC (dSAC), possible SAC (pSAC), candidate SAC (cSAC) and Site of Community Importance (SCI) before a site finally becomes designated as a SAC. Please refer to: http://jncc.defra.gov.uk/pdf/MPA_OffshoreSACDesignationProcess_Aug2010.pdf for further information on the designation process.

Table 1. UK offshore SACs submitted since August 2008 with their submission dates and Annex I qualifying features.

Date submitted to European Commission	European Marine Site	Annex I feature
20th August 2010	Bassurelle Sandbank SCI	Sandbanks which are slightly covered by sea water all the time
	Haisborough, Hammond and Winterton SCI (site straddles the 12 nm inshore/offshore boundary)	Reefs and sandbanks which are slightly covered by sea water all the time
	Inner Dowsing, Race Bank and North Ridge SCI (site straddles the 12nm inshore/offshore boundary)	Reefs and sandbanks which are slightly covered by sea water all the time
	North Norfolk Sandbanks and Saturn Reef SCI	Reefs and sandbanks which are slightly covered by sea water all the time
	North West Rockall Bank SCI	Reefs
	Wyville Thomson Ridge SCI	Reefs
26th August 2011	Dogger Bank SCI	Sandbanks which are slightly covered by sea water all the time
30th August 2012	Pisces Reef Complex cSAC	Reefs
	Wight-Barfleur Reef cSAC	Reefs
	Croker Carbonate Slabs cSAC	Submarine structures made by leaking gas
30th October 2012	Hatton Bank cSAC	Reefs
	East Rockall Bank cSAC	Reefs
	Anton Dohrn Seamount cSAC	Reefs
	Pobie Bank Reef cSAC (site straddles the 12nm inshore/offshore boundary)	Reefs
	Solan Bank Reef cSAC (site straddles the 12nm inshore/offshore boundary)	Reefs

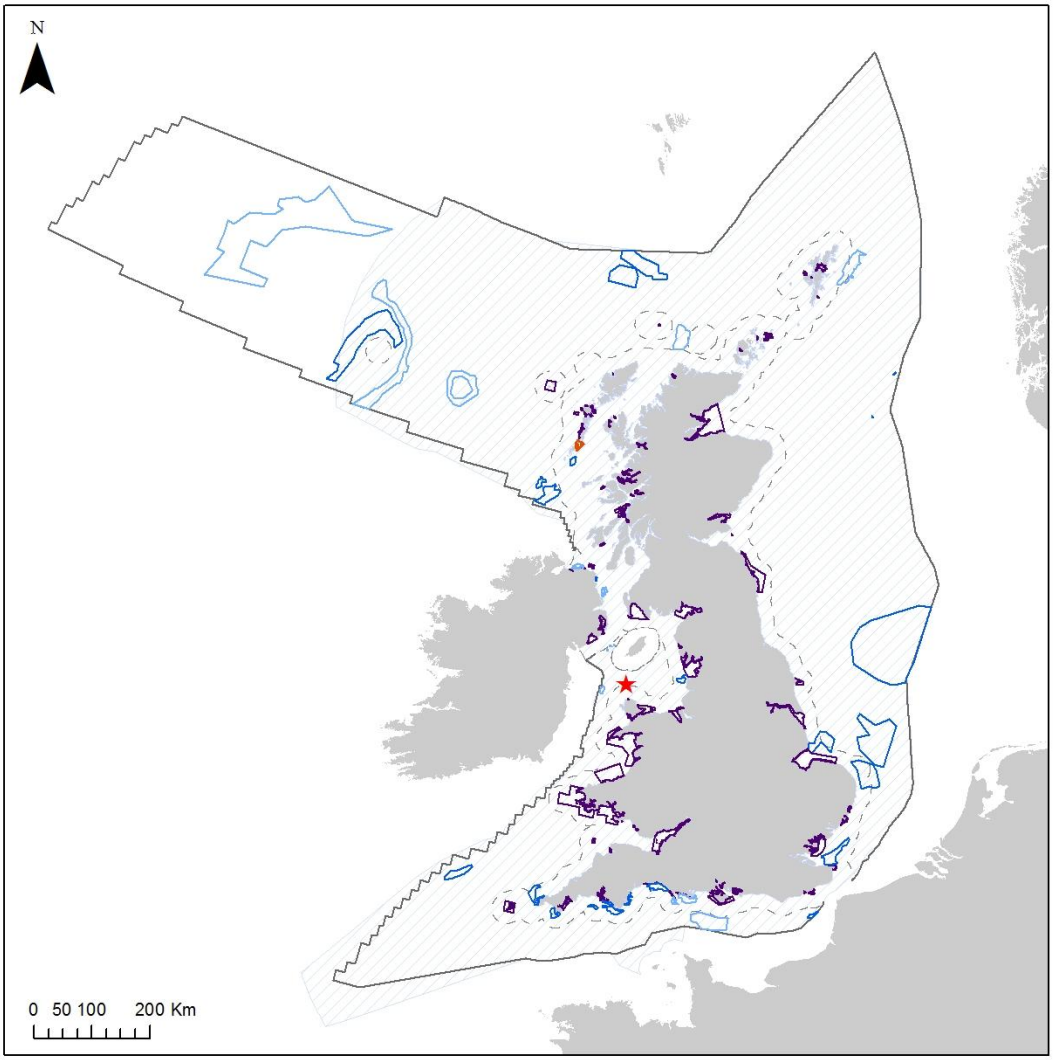
Table 2. UK inshore SACs submitted since August 2008[6] with their submission dates and Annex I qualifying features.

Date submitted to European Commission	European Marine Site	Annex I feature designated
20th August 2010	Land's End & Cape Bank SCI	Reefs
	Lizard Point SCI	Reefs
	Lyme Bay & Torbay SCI	Reefs and submerged or partially submerged sea caves
	Margate & Longsands SCI	Sandbanks which are slightly covered by sea water all the time
	Red Bay SCI	Sandbanks which are slightly covered by sea water all the time
5th September 2011	East Mingulay SCI	Reefs
	Shell Flat & Lune Deep SCI	Reefs and sandbanks which are slightly covered by sea water all the time
	Start Point to Plymouth Sound & Estuaries SCI	Reefs
30th August 2012	Studland to Portland cSAC	Reefs
	Skerries & Causeway cSAC	Reefs, submerged or partially submerged sea caves, and sandbanks which are slightly covered by sea water all the time
	The Maidens cSAC	Reefs and sandbanks which are slightly covered by sea water all the time

4.7 The network as it currently stands as of June 2013, including all SAC, SCI, cSAC, pSAC and AoS, is shown in Figure 1 below.

[6] The four sites that straddle the 12nm line (Haisborough, Hammond and Winterton SCI, Inner Dowsing, Race Bank and North Ridge SCI, Solan Bank Reef cSAC and Pobie Bank Reef cSAC) are included in Table 1 and so not repeated here.

Figure 1: Distribution of all SAC, SCI, cSAC, pSAC and AoS in the UK put forward for Annex I qualifying habitats (1110, 1170, 1180 & 8330) as of June 2013.[7]



Legend

- pSAC
- **Status**
- SAC
- SCI
- cSAC
- AoS (centroids)
- UK Continental Shelf designated area
- UK Territorial seas limit
- British Fishery Limit
- Land

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[7] ***Explanation of site status:***

- **Special Areas of Conservation (SACs)** are sites that have been adopted by the European Commission and formally designated by the government of each country in whose territory the site lies.
- **Sites of Community Importance (SCIs)** are sites that have been adopted by the European Commission but not yet formally designated by the government of each country.
- **Candidate SACs (cSACs)** are sites that have been submitted to the European Commission, but not yet formally adopted.
- **Possible SAC (pSAC)** is a site that has had Cabinet Committee approval to go to consultation. A site remains a pSAC until it is submitted to the European Commission.

5 Assessment of the contribution of SACs for sandbanks slightly covered by seawater all the time to the UK Natura 2000 network

5.1 All designated SACs, SCIs and candidate SACs which have been considered to fulfil the selection criteria for Annex I submerged sandbank features for UK waters have been considered for their contribution to the UK network of SACs for this habitat.

5.2 Those sites listed in Table 3 have now either been fully designated (SAC), or adopted by the European Commission as Sites of Community Importance (SCI). In the case of the Sound of Barra pSAC, the site has been consulted upon and is now being considered by Scottish ministers, and the Skerries & Causeway is still a candidate SAC.

5.3 The UK sandbanks resource layer (the current known/potential extent of this feature type) has been updated by JNCC since the last paper was produced on the progress towards the completion of the Natura 2000 network (JNCC, 2009) in preparation for Article 17 reporting in 2013[8]. These changes followed recent improvements in the bathymetric and seabed sediments data layers which underpin the UK sandbanks resource layer.

5.4 Calculations of the percentage of Annex I feature currently within UK SACs will be based on values of 'Range' and 'Area' from the Article 17 reporting in 2013[9]. Definitions for the terms of area and range (following Article 17 reporting guidance are shown below):

I. **Range**[10]: Range of the habitat within the biogeographical or marine region. This is the total surface area of the current range within the biogeographical area or marine region concerned in km^2. i.e. the outer limits of the overall area in which the habitat is or could be found at present.

II. **Area**: Area covered by the habitat type within the range in the biogeographical or marine region concerned. Area is the amount (in km^2) currently occupied by the habitat within the biogeographical area or marine region.

5.5 In the particular case of Annex I submerged sandbanks 'Area' is the extent of the habitat across the UK based on modelled data for sloping sandy sediment in less than 20 m of water, as well as areas delineated for eelgrass/maerl beds before 2007. 'Range' is the potential area of sloping sandy sediment habitat down to 60 m and connected to sandbank habitat in less than 20 m. The 60 m limit is equivalent to the deepest site contour (found at Dogger Bank SCI), and was previously set at 50m.

5.6 It is likely that Range will be an over estimate of total resource as it includes all possible extent within the UK, and Area may be an under-estimate of total resource as it is based on current best available evidence that includes modelled data with

[8] The sandbank data in Scotland have not yet been fully collated by SNH for areas outwith SACs.

[9] The Article 17 reports for habitats and species in the UK were consulted on in April and May 2013, and will shortly be submitted to the European Commission by the UK Government. The Article 17 reports will include information on the amount of each Annex I habitat found in the SAC network in the UK.

[10] Range is a slightly difficult concept and the term/definition comes directly from the Habitats Directive. Alternative explanations of the term range are "the total extent within which prevailing conditions indicate that the habitat is either present or could be present", and "natural range describes roughly the spatial limits within which the habitat is known to occur or may occur. It is not identical to the precise localities where a habitat permanently occurs. Such actual localities might for many habitats be patchy or disjointed within their natural range

lower confidence; new data and/or improved models would change the total resource estimate in the future.

5.7 Taking the area figure from the Article 17 reporting the total UK resource for Annex I sandbank would be 17,090 km^2, of which 89% is now contained within the SAC network. Taking the range figure from the Article 17 reporting the total UK resource figure for Annex I sandbank would be 103,944 km^2, of which 23% is now contained within the SAC network. It is worth noting that the current figure for area may currently seem very high due to most known data coming from SAC sites, therefore the majority of known sandbanks will be found within their boundaries. Similarly the range figure will have altered from previous assessments due to the maximum depth changing from 50 to 60 m and increased detail of recent bathymetric data.

Table 3. All sites (SAC, SCI cSAC and pSAC) with Annex I qualifying sandbank features (Habitat 1110)[11] within the UK SAC network.

Site	Sandbank feature sub-types	Percent of overall Area		Percent of overall Range	
		within regional sea	within SACs within regional seas	within regional sea	within SACs within regional sea
Northern North Sea Regional Sea					
Dornoch Firth and Morrich More SAC	Gravelly and clean sands; muddy sands; eelgrass (*Zostera marina*) beds.	0.15	0.15	18.58	1.27
Firth of Tay & Eden Estuary SAC	Gravelly and clean sands; muddy sands.				
Moray Firth SAC	Muddy sands.				
Southern North Sea Regional Sea					
Dogger Bank SCI	Gravelly and clean sands; muddy sands.	90.57	84.32	48.50	18.31
Essex Estuaries SAC	Gravelly and clean sands; muddy sands.				
Haisborough, Hammond and Winterton SCI	Gravelly and clean sands.				
Humber Estuary SAC	Muddy sands.				
Inner Dowsing, Race Bank and North Ridge SCI	Gravelly and clean sands.				
Margate & Longsands SCI	Gravelly and clean sands; muddy sands.				

[11] All of these sites were considered within the February 2009 Committee Paper and so for the justification of the inclusion of each site in the network, please refer to previous network paper (JNCC, 2009)

Site	Sandbank feature sub-types	Percent of overall Area		Percent of overall Range	
		within regional sea	within SACs within regional seas	within regional sea	within SACs within regional sea
North Norfolk Sandbanks & Saturn Reef SCI	Gravelly and clean sands.				
The Wash and North Norfolk Coast SAC	Gravelly and clean sands; muddy sands; eelgrass (*Zostera marina)* beds.				
Eastern English Channel Regional Sea					
Bassurelle Sandbank SCI	Gravelly and clean sands.	1.10	0.26	4.00	0.09
Solent Maritime SAC	Muddy sands.				
Western English Channel and Celtic Sea					
Bae Caerfyrddin ac Aberoedd/ Carmarthen Bay and Estuaries SAC	Gravelly and clean sands.	1.81	1.02	9.88	0.88
Fal and Helford SAC	Gravelly and clean sands; muddy sands; eelgrass (*Zostera marina)* beds; Maerl beds.				
Isles of Scilly SAC	Gravelly and clean sands; eelgrass (*Zostera marina)* beds.				
Lundy SAC	Gravelly and clean sands; eelgrass (*Zostera marina)* beds.				
Plymouth Sound and Estuaries SAC	Muddy sands.				
Severn Estuary / Môr Hafren SAC	Gravelly and clean sands; muddy sands.				
Irish Sea Regional Sea					
Bae Ceredigion / Cardigan Bay SAC	Muddy sands.	5.11	2.65	13.20	2.16
Luce Bay and Sands SAC	Gravelly and clean sands; muddy sands; Maerl beds.				
Morecambe Bay SAC	Gravelly and clean sands; muddy sands.				

Site	Sandbank feature sub-types	Percent of overall Area		Percent of overall Range	
		within regional sea	within SACs within regional seas	within regional sea	within SACs within regional sea
Murlough SAC	Gravelly and clean sands.				
Pembrokeshire Marine/ Sir Benfro Forol SAC	Gravelly and clean sands.				
Pen Llyn a`r Sarnau / Lleyn Peninsula and the Sarnau SAC	Gravelly and clean sands.				
Red Bay SCI	Gravelly and clean sands; Maerl beds.				
Shell Flat & Lune Deep SCI	Gravelly and clean sands; muddy sands.				
Solway Firth SAC	Gravelly and clean sands; muddy sands.				
The Maidens cSAC	Gravelly and clean sands; muddy sands; Maerl beds.				
Y Fenai a Bae Conwy / Menai Strait and Conwy Bay SAC	Gravelly and clean sands; muddy sands.				
Minches & West Scotland Regional Sea					
Loch nam Madadh SAC	Gravelly and clean sands; muddy sands; Maerl beds.				
Rathlin Island SAC	Gravelly and clean sands; Maerl beds.				
Sound of Arisaig SAC	Gravelly and clean sands; muddy sands; eelgrass (*Zostera marina)* beds; Maerl beds.	1.23	0.26	4.32	0.06
Sound of Barra pSAC[12]	Gravelly and clean sands; muddy sands; eelgrass (*Zostera marina)* beds; Maerl beds.				
The Skerries & Causeway cSAC	Gravelly and clean sands; eelgrass (*Zostera marina)* beds.				

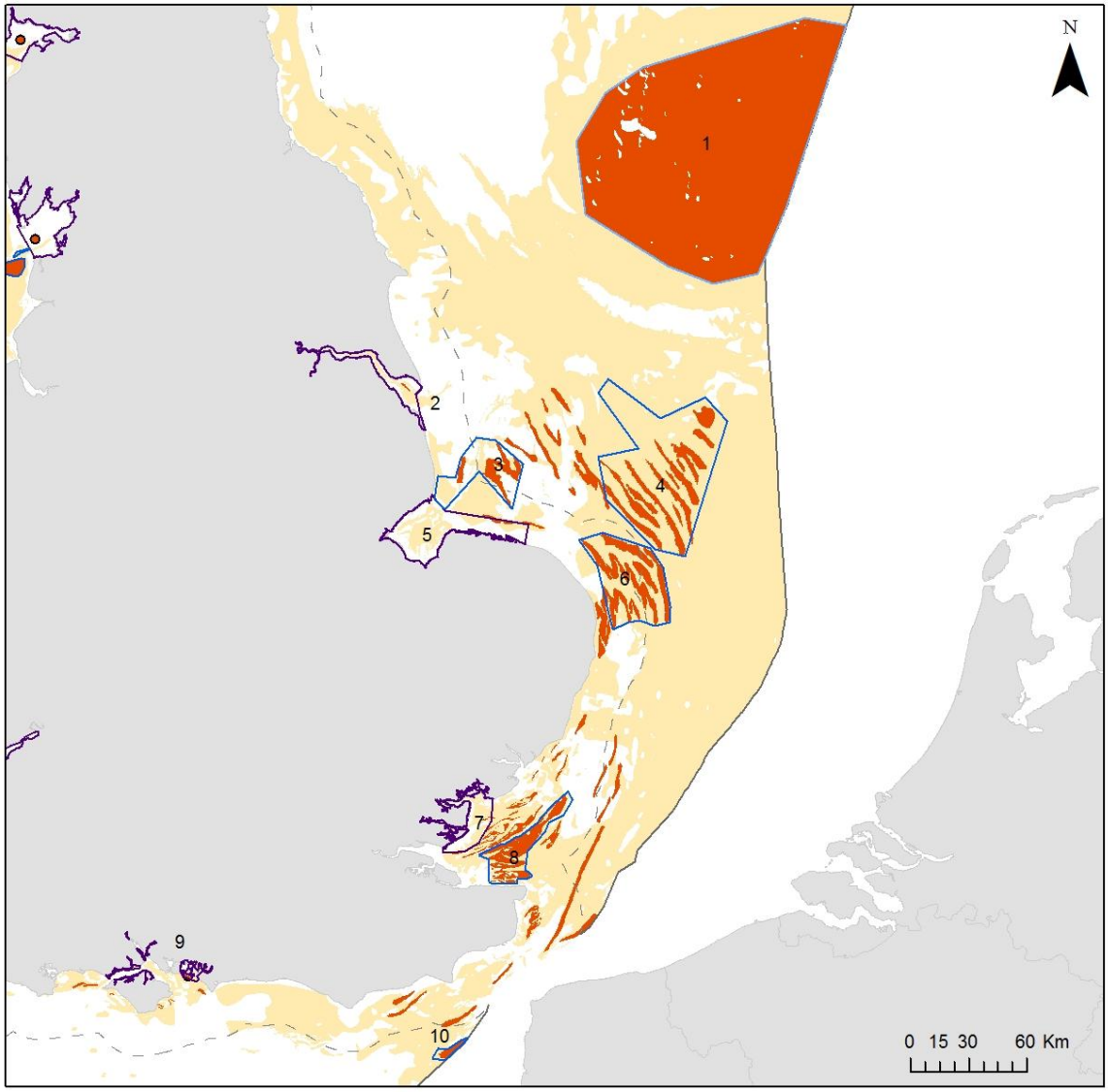
[12] The Sound of Barra pSAC is still under consideration by Scottish Ministers.

Site	Sandbank feature sub-types	Percent of overall Area		Percent of overall Range	
		within regional sea	within SACs within regional seas	within regional sea	within SACs within regional sea
Scottish Continental Shelf					
Sanday SAC	Gravelly and clean sands; muddy sands; eelgrass (*Zostera marina)* beds; Maerl beds.	0.02	0.01	1.52	0.01

5.8 The sites detailed in Table 3 above are shown in Figures 2, 3 and 4 below against the background of the 'range' (sloping sandy sediments in less than 60 m that are connected to sandy sediment in less than 20 m) and 'area' (sloping sandy sediments or beds of eelgrass/ maerl in less than 20 m) of the feature 'sandbanks which are slightly covered by sea water all the time' in the UK.[13]

[13] Polygons with only low confidence in presence of Annex I Sandbank were not used in the assessment of the 'area' parameter under the 2007-2013 Article 17 assessment of conservation status.

Figure 2: Distribution of SAC, SCI and cSAC for Annex I sandbank habitat (1110) in the Southern North Sea, Northern North Sea and Eastern English Channel, against a backdrop of UK Annex I sandbanks area and range.[14]



Legend

Status

- SAC
- SCI
- cSAC
- UK Continental Shelf designated area
- UK Territorial seas limit
- Land
- Sandbank Area identified but non-delineated
- Sandy sediment (Area)
- Sandy sediment (Range)

Key to SACs

1 Dogger Bank SCI
2 Humber Estuary SAC
3 Inner Dowsing, Race Bank and North Ridge (joint) SCI
4 North Norfolk Sandbanks and Saturn Reef SCI
5 The Wash and North Norfolk Coast SAC
6 Haisborough, Hammond and Winterton (joint) SCI
7 Essex Estuaries SAC
8 Margate and Longsands SCI
9 Solent Maritime SAC
10 Bassurelle SCI

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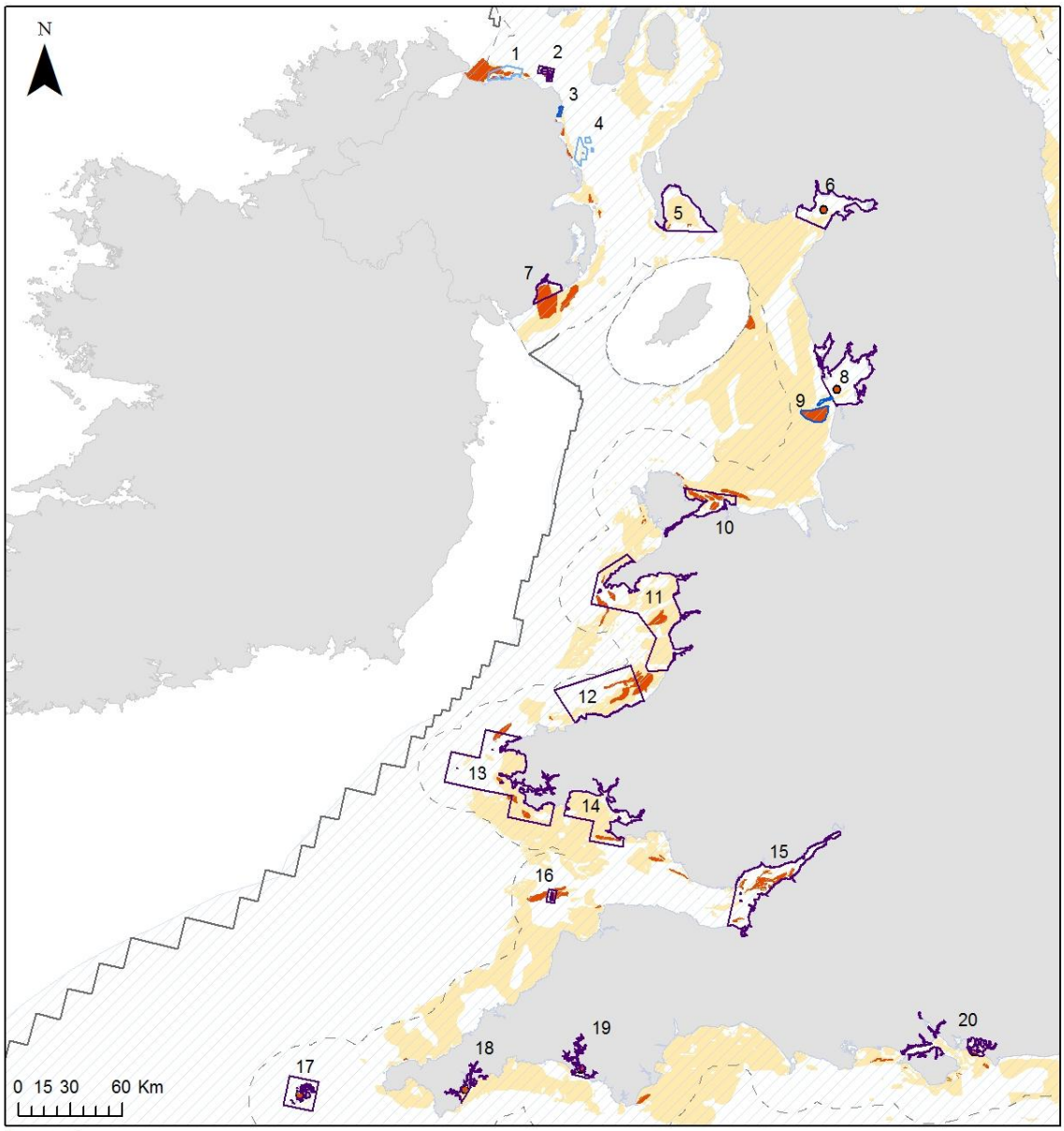
[14] Sites not numbered but shown have Annex I sandbank within the site, but not as a primary feature.

Figure 3: Distribution of SAC, SCI and cSAC for Annex I sandbank habitat (1110) in the Irish Sea, Western English Channel and Eastern English Channel, against a backdrop of UK Annex I sandbanks area and range.



Legend

- cSAC
- SCI
- SAC
- UK Continental Shelf designated area
- UK Territorial seas limit
- British Fishery Limit
- Land
- Sandbank Area identified but non-delineated
- Sandy sediment (Area)
- Sandy sediment (Range)

1 The Skerries & Causeway cSAC
2 Rathlin Island SAC
3 Red Bay cSAC
4 The Maidens cSAC
5 Luce Bay & Sands SAC
6 Solway Firth SAC
7 Murlough SAC
8 Morecambe Bay SAC
9 Shell Flat & Lune Deep SCI
10 Y Fenai a Bae Conwy SAC
11 Pen Llyn a'r Sarnau SAC
12 Bae Ceredigion SAC
13 Sir Benfro Forol SAC
14 Bae Cerefyrddin ac Aberoedd SAC
15 Severn Estuary / Mor Hafren SAC
16 Lundy SAC
17 Isles of Scilly Complex SAC
18 Fal & Helford SAC
19 Plymouth Sound & Estuaries SAC
20 Solent & Maritime SAC

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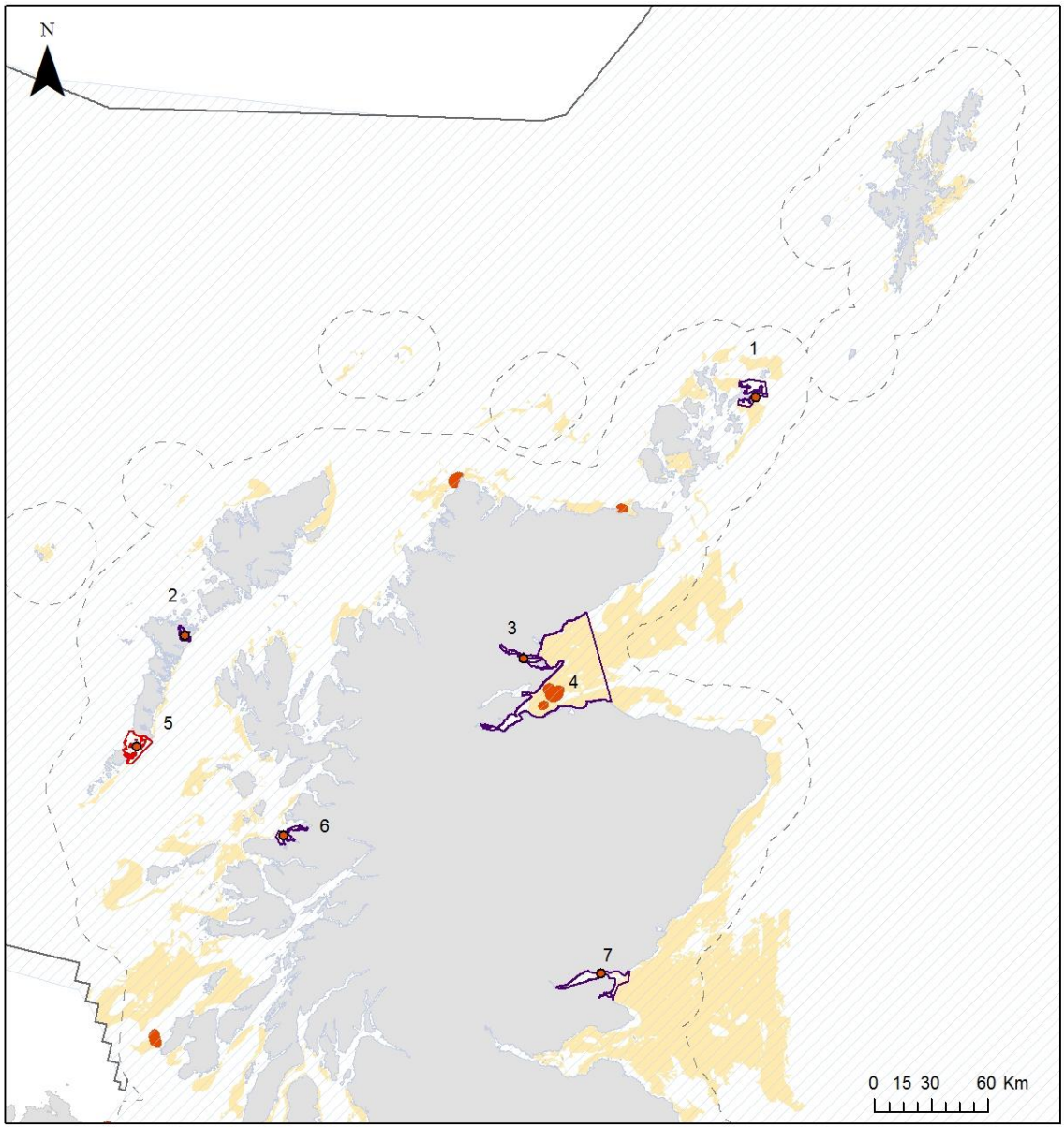
Figure 4: Distribution of SAC and pSAC for Annex I sandbank habitat (1110) in northern UK waters[15], against a backdrop of UK Annex I sandbanks area and range.[16]



Legend

Status
- SAC
- SCI
- cSAC
- pSAC

- Sandy sediment (Area)
- Sandy sediment (Range)
- Sandbank Area identified but non-delineated
- UK Continental Shelf designated area
- UK Territorial seas limit
- British Fishery Limit
- Land

1 Sanday SAC
2 Loch Nam Madadh SAC
3 Dornoch Firth & Morrich More SAC
4 Moray Firth SAC
5 Sound of Barra pSAC
6 Sound of Arisaig (Loch Ailort to Loch Ceann Taigh) SAC
7 Firth of Tay & Eden Estuary SAC

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[15] The sandbank data in Scotland have not yet been fully collated by SNH for areas outwith SACs.

[16] The Sound of Barra pSAC is still under consideration by Scottish Ministers.

6 Assessment of the contribution of SACs for reefs to the UK Natura 2000 network

6.1 All designated SACs, SCIs and cSACs which have been considered to fulfil the qualifying selection criteria for Annex I reef features for UK waters have been considered for their contribution to the UK network of SACs for this habitat.

6.2 Those sites listed in Table 4 have now either been submitted to the European Commission following consultation, or in the case of the Sound of Barra pSAC, has been consulted upon and is being considered by Scottish Ministers. The North West Anglesey Reef is still an area of search.

6.3 The UK reef resource layer has been updated in preparation for UK's report under Article 17 of the Habitats Directive in 2013 since the last paper was produced on the progress towards the completion of the Natura 2000 network (JNCC, 2009).

6.4 In the particular case of Annex I reefs, 'Area' includes all known reef (based on multibeam sonar and ground truth data) and potential reef (based on modelled data) extent. Range includes all potential and known reef, together with the areas with iceberg ploughmarks where Annex I stony reef has been recorded. However, the actual extent of stony reef is currently unknown within these ploughmark zones.

6.5 For estimations of the proportion of Annex I qualifying reef feature currently within UK SACs, values of 'Area' and 'Range' for the reef resource will be used from Article 17 reporting in 2013 (for definitions please refer to paragraph 5.4 above). It is likely that 'Range' will be an over estimate of total resource as it includes all potential extent within the UK, while the 'Area' value of total resource also may vary in the future as it is based on current best available evidence. [17]

6.6 The estimate of area for the total UK resource for Annex I reef, in line with values for Article 17 in 2013, is currently 115,394 km^2, of which 25% is now contained within the SAC network. The estimate of range for the total UK resource of Annex I reef is currently 135,597 km^2, of which 22% is now contained within the SAC network.

6.7 Those sites listed in Table 4 have been progressed since the previous 2009 paper have been submitted to the European Commission, except the Sound of Barra and the North West Anglesey Reef.

[17] Since the last paper was produced the BGS data product, DigHardSubstrate 1:250k has been created and incorporated into the Annex I Reefs layer. Prior to this there was no national dataset for bedrock. The BGS seabed sediment dataset (DigSBS 1:250k, which is used in both the older and newer versions of the reef layer) primarily focussed on sediments, so rock was previously under-represented. With the production of DigHardSubstrate 1:250k the aim was to collect all the available data together to try and produce a comprehensive map of bedrock at the seabed. Some of this data cannot resolve the difference between exposed rock and rock that is buried in up to 50cm of sediment (such as sub-surface seismic data). This, combined with interpolation of point data over large distances in some areas, has resulted in what we now have, which represents an over-estimate of rock at the seabed.

Table 4. Justification for all sites progressed for Annex I reef features (Habitat 1170) since the previous paper (JNCC, 2009) on the completion of the network of SACs.

SCI, cSAC, pSAC or AoS	Justification for progressing
Northern North Sea Regional Sea	
Pobie Bank Reef cSAC	Representation of bedrock / stony reef in regional sea.
Southern North Sea Regional Sea	
Inner Dowsing, Race Bank and North Ridge SCI	Representation of biogenic reef in regional sea. Weighting given to *S. spinulosa* reefs due to rarity.
North Norfolk Sandbanks and Saturn Reef SCI	Representation of biogenic in regional sea. Weighting given to *S. spinulosa* reefs due to rarity.
Eastern English Channel Regional Sea	
Wight-Barfleur Reef cSAC	Representation of bedrock / stony reef in regional sea.
Western English Channel & Celtic Sea Regional Sea	
Lyme Bay & Torbay SCI	Representation of bedrock / stony / biogenic reef in regional sea. Weighting given to *S.spinulosa* and *S.alveolata* reefs due to rarity.
Start Point to Plymouth Sound & Estuaries SCI	Representation of bedrock / stony reef in regional sea.
Lizard Point SCI	Representation of bedrock reef in regional sea.
Land's End & Cape Bank SCI	Representation of bedrock / stony reef in regional sea.
Irish Sea Regional Sea	
The Maidens cSAC	Representation of bedrock / stony reef in regional sea.
Shell Flat & Lune Deep SCI	Representation of bedrock / stony reef in regional sea.
Pisces Reef Complex cSAC	Representation of bedrock / stony reef in regional sea.
North West Anglesey Reef AoS	Representation of bedrock / stony / *M.modiolus* reef in regional sea. Weighting given to biogenic reefs due to rarity.
Minches and West Scotland Regional Sea	
The Skerries & Causeway cSAC	Representation of bedrock / stony reef in regional sea.
East Mingulay SCI	Representation of bedrock / stony / cold water coral reef in regional sea. Weighting given to biogenic reefs due to restricted distribution.
Sound of Barra pSAC	Representation of bedrock / stony reef in regional sea, multiple interest (sandbanks & harbour (common) seals).
Scottish Continental Shelf Regional Sea	
Solan Bank Reef cSAC	Representation of bedrock / stony reef in regional sea.
Wyville Thomson Ridge SCI	Representation of bedrock / stony reef in regional sea.
Rockall Trough and Bank Regional Sea	
Anton Dohrn Seamount cSAC	Representation of bedrock / stony / cold water coral reef in regional sea. Weighting given to biogenic reefs due to restricted distribution.
North West Rockall Bank SCI	Representation of bedrock / stony / cold water coral reef in regional sea. Weighting given to biogenic reefs due restricted distribution.

SCI, cSAC, pSAC or AoS	Justification for progressing
East Rockall Bank cSAC	Representation of bedrock / stony / cold water coral reef in regional sea. Weighting given to biogenic reefs due to restricted distribution.
Atlantic North West Approaches Regional Sea	
Hatton Bank cSAC	Representation of bedrock / stony / cold water coral reef in regional sea. Weighting given to biogenic reefs due to restricted distribution.

6.8 Table 5 below shows all sites currently within the UK SAC network designated or put forward for Annex I reef features, along with the feature sub-type.

Table 5. All SAC, SCI, cSAC, pSAC and AoS for Annex I qualifying reef features (Habitat 1170) within the UK SAC network.

SAC, SCI, cSAC, pSAC or AoS	Reef feature sub-type	Percent of overall Area		Percent of overall Range	
		within regional sea	within SACs within regional sea	within regional sea	within SACs within regional sea
Northern North Sea Regional Sea					
Berwickshire and North Northumberland Coast SAC	Bedrock (hard and soft rock types) reef.	10.72	1.16	9.14	0.99
Isle of May SAC	Bedrock (hard rock types) and stony reef.				
Dornoch Firth and Morrich More SAC	Bedrock (Moderate and soft rock types), stony and biogenic (*Mytilus edulis*) reef.				
Mousa SAC	Bedrock (hard rock types) and stony reef.				
Pobie Bank Reef cSAC	Bedrock (hard rock types) and stony reef.				
Southern North Sea Regional Sea					
Flamborough Head SAC	Bedrock (hard and soft rock types) and stony reef.	1.18	0.24	1.00	0.20
Haisborough, Hammond and Winterton SCI	Biogenic reef (*Sabellaria spinulosa).*				
Inner Dowsing, Race Bank and North Ridge SCI	Biogenic reef (*Sabellaria spinulosa).*				
North Norfolk Sandbanks and Saturn Reef SCI	Biogenic reef (*Sabellaria spinulosa).*				
Thanet Coast SAC	Bedrock (Moderate and soft rock types) reef.				

SAC, SCI, cSAC, pSAC or AoS	Reef feature sub-type	Percent of overall Area		Percent of overall Range	
		within regional sea	within SACs within regional sea	within regional sea	within SACs within regional sea
The Wash and North Norfolk Coast SAC	Biogenic reef (*Sabellaria spinulosa).*				
Eastern English Channel Regional Sea					
South Wight Maritime SAC	Bedrock (hard and soft rock types) and stony reef.	8.94	1.88	7.62	1.30
Wight-Barfleur Reef cSAC	Bedrock (hard and soft rock types) and stony reef.				
Western English Channel & Celtic Sea Regional Sea					
Fal and Helford SAC	Bedrock (hard rock types) reef.	18.89	1.42	16.10	1.21
Haig Fras SCI	Bedrock (hard rock types) reef.				
Isles of Scilly Complex SAC	Bedrock (hard rock types) reef.				
Lands End and Cape Bank SCI	Bedrock (hard rock types) and stony reef.				
Lizard Point SCI	Bedrock (hard rock types) reef.				
Lundy SAC	Bedrock (hard rock types) reef.				
Lyme Bay & Torbay SCI	Bedrock (hard and soft rock types), stony and biogenic (*S. spinulosa*, *S. alveolata* and *Mytilus edulis*) reef.				
Plymouth Sound and Estuaries SAC	Bedrock (Moderate and soft rock types) reef.				
Severn Estuary / Mor Hafren SAC	Bedrock (hard and soft rock types), stony and biogenic (*Mytilus edulis and S. alveolata*) reef.				
Start Point to Plymouth Sound & Eddystone SCI	Bedrock (hard and soft rock types) and stony reef.				
Studland to Portland cSAC	Bedrock (hard rock types), stony and biogenic (*Mytilus edulis*) reef.				
Irish Sea Regional Sea					
Cardigan Bay SAC	Bedrock (hard rock types), stony and biogenic (*S. alveolata* and *Mytilus edulis*) reef.	3.72	1.24	3.17	1.06

SAC, SCI, cSAC, pSAC or AoS	Reef feature sub-type	Percent of overall Area		Percent of overall Range	
		within regional sea	within SACs within regional sea	within regional sea	within SACs within regional sea
Luce Bay and Sands SAC	Bedrock (hard rock types), stony and biogenic (*S. spinulosa*) reef.				
Morecambe Bay SAC	Biogenic reef (*Sabellaria alveolata).*				
North West Anglesey inshore and offshore AoS	Bedrock (hard rock types), stony and biogenic (*Modiolus modiolus*) reef.				
Pen Llyn a`r Sarnau SAC	Bedrock (hard and soft rock types), stony and biogenic (*Modiolus modiolus*, *S. alveolata* and *Mytilus edulis*) reef.				
Pisces Reef complex cSAC	Bedrock (hard rock types) and stony reef.				
Shell Flat and Lune Deep Inshore SCI	Bedrock (hard rock types) and stony reef.				
Sir Benfro Forol (Pembrokeshire Marine) SAC	Bedrock (hard and soft rock types), stony and biogenic (*Mytilus edulis*) reef.				
Solway Firth SAC	Biogenic (*S. alveolata* and *Mytilus edulis*) reef.				
Strangford Lough SAC	Bedrock (Moderate and soft rock types), stony and biogenic (*Modiolus modiolus*) reef.				
The Maidens cSAC	Bedrock (hard rock types) and stony reef.				
Y Fenai a Bae Conwy (Menai Strait and Conwy Bay) SAC	Bedrock (hard and soft rock types), stony and biogenic (*Mytilus edulis*) reef.				
Minches and West Scotland Regional Sea					
East Mingulay SCI	Bedrock (hard rock types), stony and biogenic (Cold water coral) reef.				
Firth of Lorn SAC	Bedrock (hard rock types) and stony reef.	6.13	0.24	5.22	0.21
Loch Creran SAC	Bedrock (hard rock types), stony and biogenic (*Serpula vermicularis, Modiolus modiolus*) reef.				

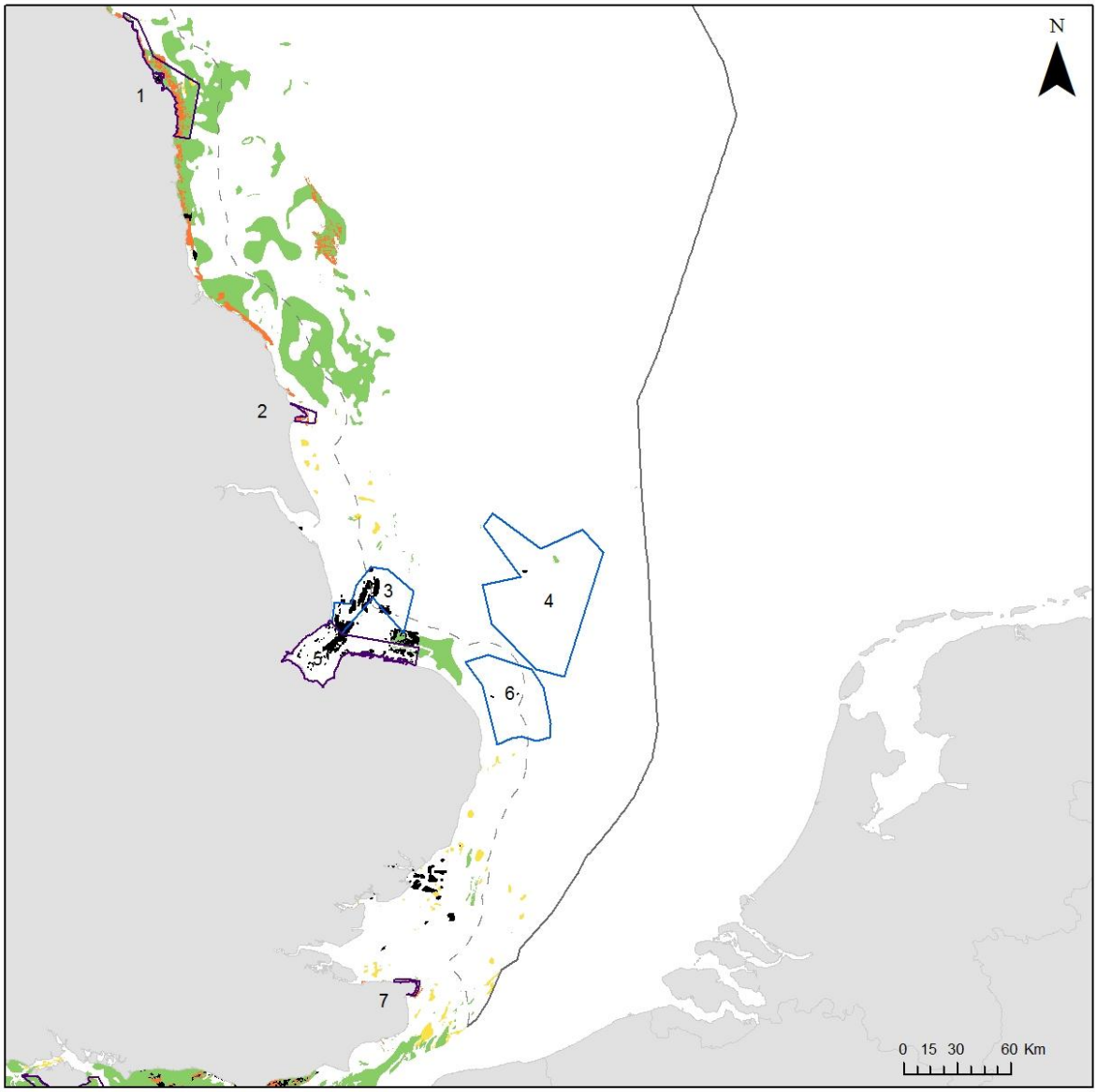
SAC, SCI, cSAC, pSAC or AoS	Reef feature sub-type	Percent of overall Area		Percent of overall Range	
		within regional sea	within SACs within regional sea	within regional sea	within SACs within regional sea
Loch Laxford SAC	Bedrock (hard rock types) and stony reef.				
Loch nam Madadh SAC	Bedrock (hard rock types) and stony reef.				
Lochs Duich, Long and Alsh Reefs SAC	Bedrock (hard rock types), stony and biogenic (*Modiolus modiolus*) reef.				
Rathlin Island SAC	Bedrock (hard and soft rock types) and stony reef.				
Sound of Barra pSAC[18]	Bedrock (hard rock types) and stony reef.				
Stanton Banks SCI	Bedrock (hard rock types) and stony reef.				
Sunart SAC	Bedrock (hard rock types) and stony reef.				
The Skerries & Causeway cSAC	Bedrock (hard and soft rock types) and stony reef.				
Treshnish Isles SAC	Bedrock (hard rock types) and stony reef.				
Scottish Continental Shelf Regional Sea					
North Rona SAC	Bedrock (hard rock types) reef.	16.88	0.94	28.56	1.45
Papa Stour SAC	Bedrock (hard rock types) and stony reef.				
Sanday SAC	Bedrock (Moderate and soft rock types) and biogenic (*Modiolus modiolus*) reef.				
Solan Bank Reef cSAC	Bedrock (hard rock types) and stony reef.				
St Kilda SAC	Bedrock (hard rock types) and stony reef.				
Stanton Banks SCI	Bedrock (hard rock types) and stony reef.				
Sullom Voe SAC	Bedrock (hard rock types), stony reef and biogenic (*Modiolus modiolus*) reef.				
Wyville Thomson Ridge SCI	Bedrock (hard rock types) and stony reef.				
Rockall Trough and Bank Regional Sea					
Anton Dohrn Seamount cSAC	Bedrock (hard rock types) and biogenic (Cold water coral) reef.	16.98	4.84	14.59	4.25

[18] The Sound of Barra pSAC is still under consideration by Scottish Ministers.

SAC, SCI, cSAC, pSAC or AoS	Reef feature sub-type	Percent of overall Area		Percent of overall Range	
		within regional sea	within SACs within regional sea	within regional sea	within SACs within regional sea
Darwin Mounds SCI	Biogenic (Cold water coral) reef.				
East Rockall Bank cSAC	Bedrock (hard rock types), stony and biogenic (Cold water coral) reef.				
North West Rockall Bank SCI	Bedrock (hard rock types), stony and biogenic (Cold water coral) reef.				
Atlantic North West Approaches Regional Sea					
Hatton Bank cSAC	Bedrock (hard rock types), stony and biogenic (Cold water coral) reef.	16.54	13.45	14.09	11.49

6.9 These sites are shown in Figures 5, 6, 7, 8 and 9 against the background of the estimated total UK resource of Annex I reef habitat.

Figure 5: Distribution of SAC, SCI and cSAC for Annex I reef habitat (1170) in the Southern North Sea, Northern North Sea and Eastern English Channel against a backdrop of Annex I reef range.



Legend

Status

- SAC
- SCI
- cSAC
- UK Continental Shelf designated area
- UK Territorial seas limit

UK Reefs Range 2012

SUBTYPE

- Bedrock
- Stony
- Biogenic
- Mixed
- Land

1 Berwickshire & North Northumberland Coast SAC
2 Flamborough Head SAC
3 Inner Dowsing & Race Bank SCI
4 North Norfolk Sandbanks & Saturn Reef SCI
5 The Wash & North Norfolk Coast SAC
6 Haisborough, Hammond & Winterton SCI
7 Thanet Coast SAC

Seabed habitat derived from BGS 1:250,000 seabed sediment maps ©
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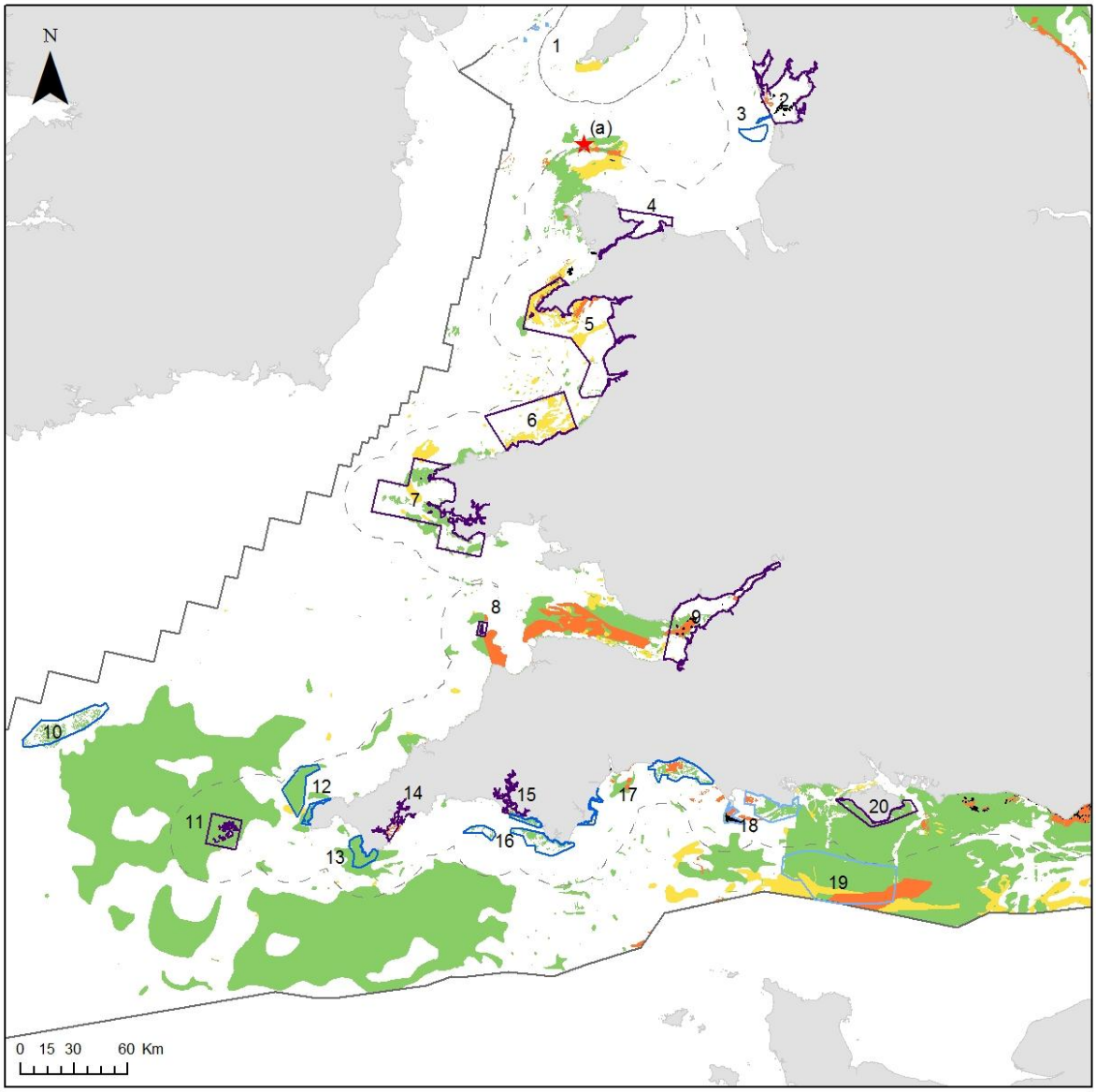
Figure 6: Distribution of SAC, SCI, cSAC and AoS for Annex I reef habitat (1170) in the South West Approaches and Irish Sea, against a backdrop of Annex I reef range.



Legend

UK Reefs Range 2012

SUBTYPE

- Bedrock
- Stony
- Biogenic
- Mixed
- SAC
- SCI
- cSAC
- AoS (centroids)

- UK Continental Shelf designated area
- UK Territorial seas limit
- Land

1 Pisces Reef Complex cSAC
2 Morecambe Bay SAC
3 Shell Flat & Lune Deep SCI
4 Y Fenai a Bae Conwy SAC
5 Pen Llyn a'r Sarnau SAC
6 Bae Ceredigion SAC
7 Sir Benfro Forol SAC
8 Lundy SAC
9 Severn Estuary / Mor Hafren SAC
10 Haig Fras SCI
11 Isles of Scilly Complex SAC
12 Lands End & Cape Bank SCI
13 Lizard Point SCI
14 Fal & Helford SAC
15 Plymouth Sound & Estuaries SAC
16 Start Point to Plymouth Sound & Eddystone SCI
17 Lyme Bay & Torbay SCI
18 Studland to Portland pSAC
19 Wight-Barfleur Reef cSAC
20 South Wight Maritime SAC
(a) NW Anglesey AoS

Seabed habitat derived from BGS 1:250,000 seabed sediment maps ©
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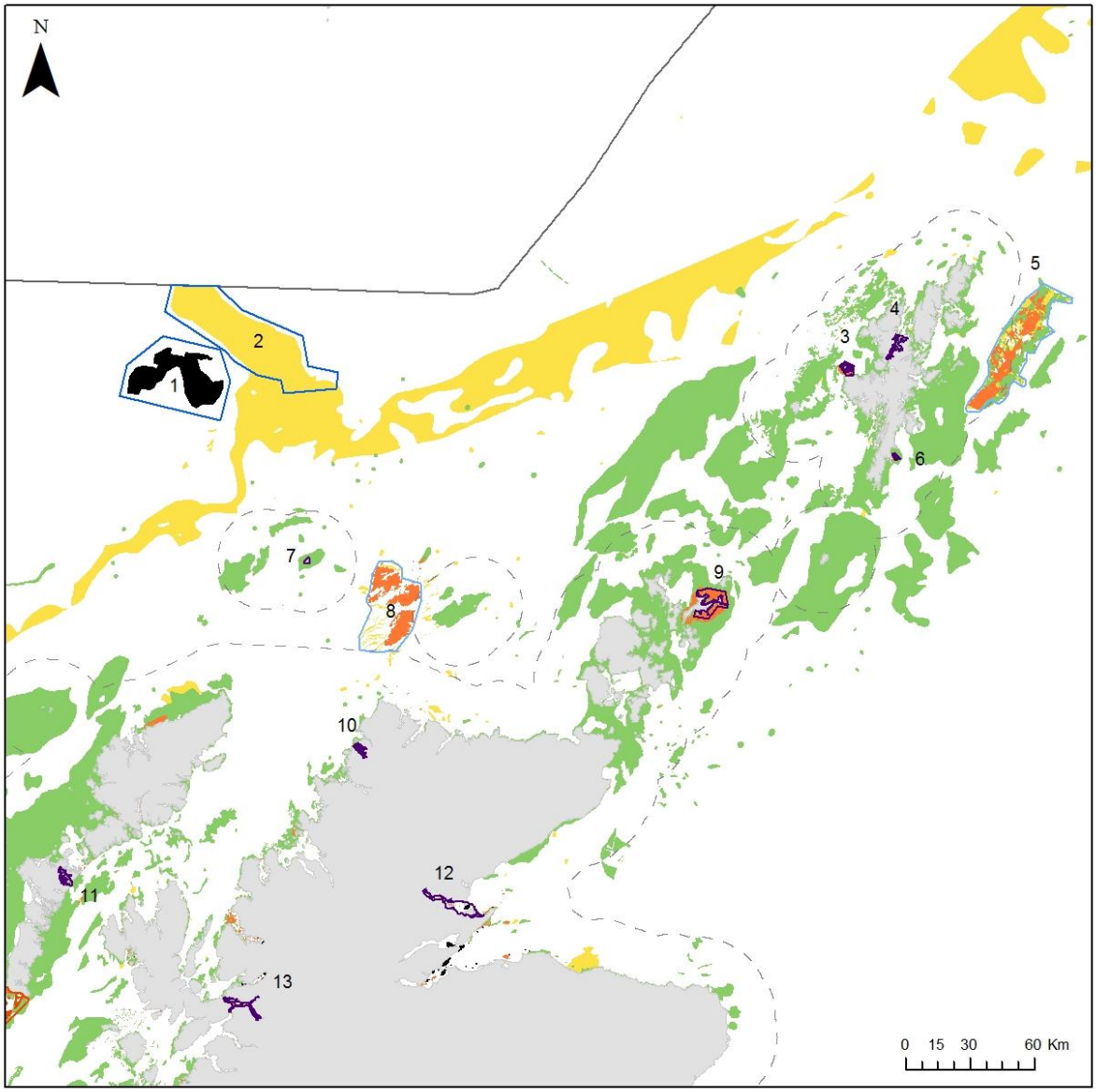
Figure 7: Distribution SAC, SCI and cSAC for Annex I reef habitat (1170) in the Scottish Continental Shelf and northern North Sea, against a backdrop of potential and known Annex I reef habitat range.



Legend

Status

- SAC
- SCI
- cSAC
- pSAC
- UK Continental Shelf designated area
- UK Territorial seas limit
- Land

UK Reefs Range 2012

SUBTYPE

- Bedrock
- Stony
- Biogenic
- Mixed

1 Darwin Mounds SCI
2 Wyville Thomson Ridge SCI
3 Papa Stour SAC
4 Sullom Voe SAC
5 Pobie Bank cSAC
6 Mousa SAC
7 North Rona SAC
8 Solan Bank Reef cSAC
9 Sanday SAC
10 Loch Laxford SAC
11 Loch nam Madadh SAC
12 Dornoch Firth & Morrich More SAC
13 Lochs Duich, Long and Alsh Reefs SAC

Seabed habitat derived from BGS 1:250,000 seabed sediment maps ©
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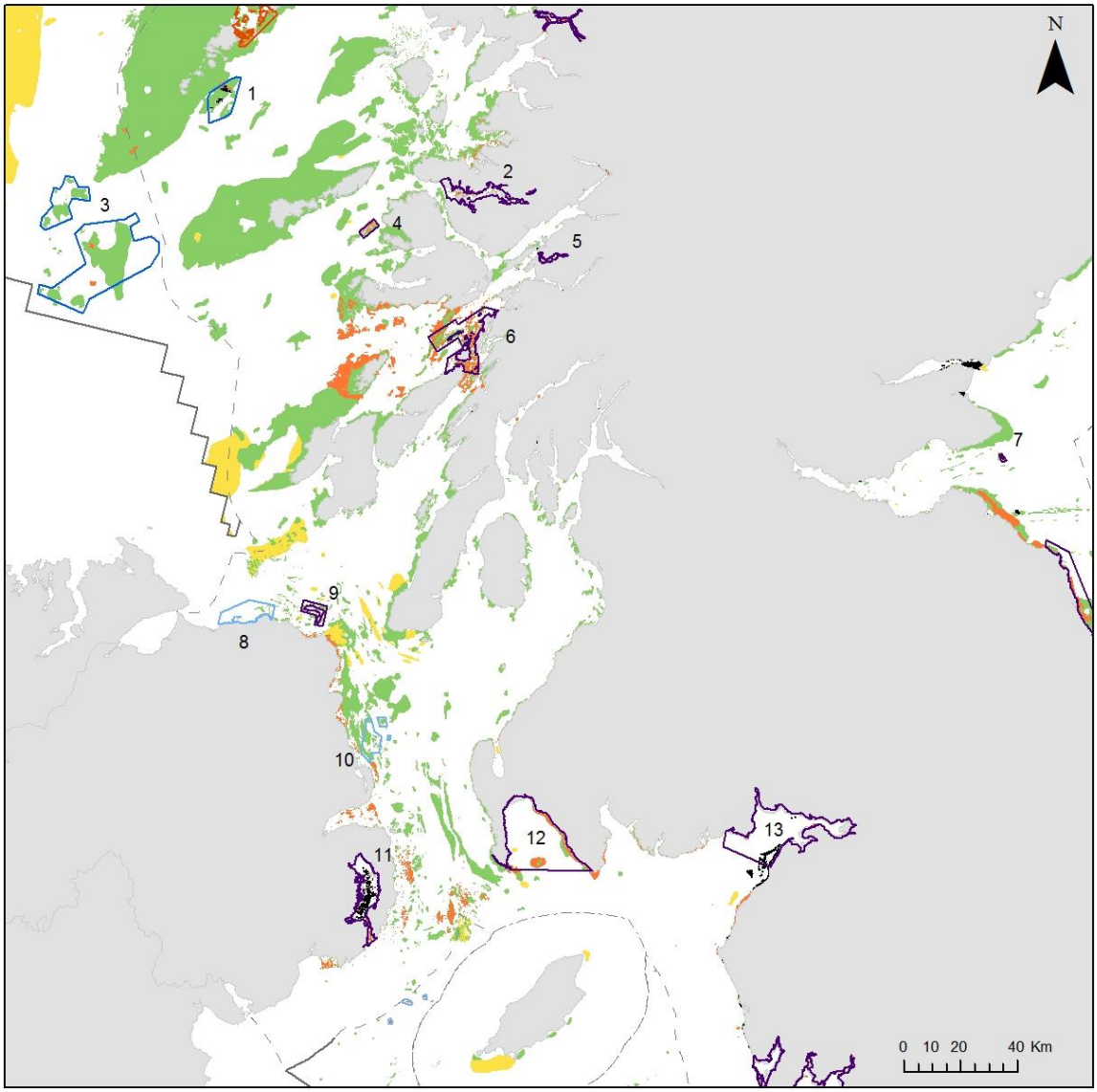
Figure 8: Distribution SAC, SCI, cSAC and pSAC for Annex I reef habitat (1170) in the Scottish Continental Shelf, Minches and West Scotland and Irish Sea, against a backdrop of potential and known Annex I reef habitat range.



Legend

UK Reefs Range 2012

SUBTYPE

- Bedrock
- Stony
- Biogenic
- Mixed

Status

- SAC
- SCI
- cSAC
- pSAC
- UK Continental Shelf designated area
- UK Territorial seas limit
- Land

1 East Mingulay SCI
2 Sunart SAC
3 Stanton Banks SCI
4 Treshnish Isles SAC
5 Loch Creran SAC
6 Firth of Lorn SAC
7 Isle of May SAC
8 The Skerries & Causeway cSAC
9 Rathlin Island SAC
10 The Maidens cSAC
11 Stangford Lough SAC
12 Luce Bay & Sands SAC
13 Solway Firth SAC

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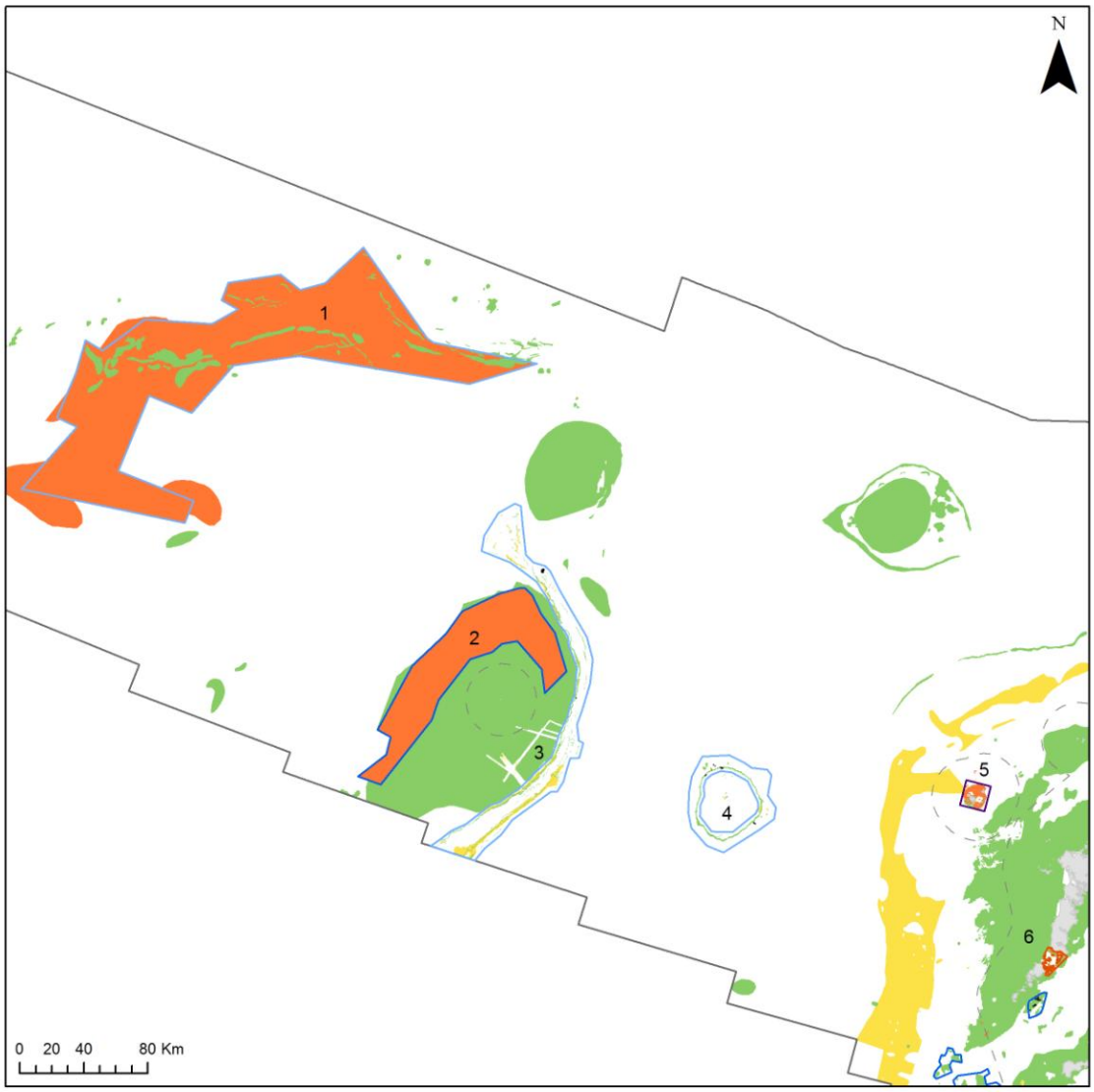
Figure 9: Distribution SAC, SCI, cSAC and pSAC for Annex I reef habitat (1170) in the Scottish Continental Shelf, Rockall Trough and Bank, Minches and West Scotland & Atlantic North West Approaches, against a backdrop of potential and known Annex I reef habitat range. [19]



Legend

UK Reefs Range 2012

SUBTYPE

- Bedrock
- Stony
- Biogenic
- Mixed

Status

- SAC
- SCI
- cSAC
- pSAC
- UK Continental Shelf designated area
- UK Territorial seas limit
- Land

1 Hatton Bank cSAC
2 North West Rockall Bank SCI
3 East Rockall Bank cSAC
4 Anton Dohrn Seamount cSAC
5 St Kilda SAC
6 Sound of Barra pSAC

Seabed habitat derived from BGS 1:250,000 seabed sediment maps ©
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[19] The Sound of Barra pSAC is still under consideration by Scottish Ministers.

6.10 Taking into account gradings for the different criteria (paragraph 3.10), consideration of the principles of natural range (paragraph 3.2), sufficiency (paragraph 3.5) and proportionality (paragraph 3.8), two AoS in UK offshore waters will not be recommended as SACs to Government based on the information which is currently available (Table 6).

6.11 The areas not being considered further are in addition to the areas already advised to the Joint Committee in 2008 (JNCC, 2009). JNCC and Natural Resources Wales (NRW[20]) still need to jointly determine whether the remaining AoS for reef (North West Anglesey Reef) should be recommended to Government as a draft SAC or not. While this site was previously not going to be considered further for selection, new data possibly indicating the presence of *M.modiolus* biogenic reef needs to now be considered for the Irish Sea regional sea.

Table 6. Areas for Annex I reef habitat not being considered further in the SAC selection process.

Area	Reason for not progressing
Rockall Trough and Bank	
George Bligh Bank AoS	With the inclusion of Anton Dohrn Seamount cSAC, Darwin Mounds SCI, East Rockall Bank cSAC and North West Rockall Bank SCI within the network, the interest feature (Reefs) was already sufficiently represented in the Rockall Trough and Bank Regional Sea
Irish Sea	
North West Irish Sea Mounds AoS	With the inclusion of Pisces Reef Complex cSAC within the network, this interest feature (Reefs) was already sufficiently represented with higher qualifying bedrock / stony reef in the Irish Sea Regional Sea.

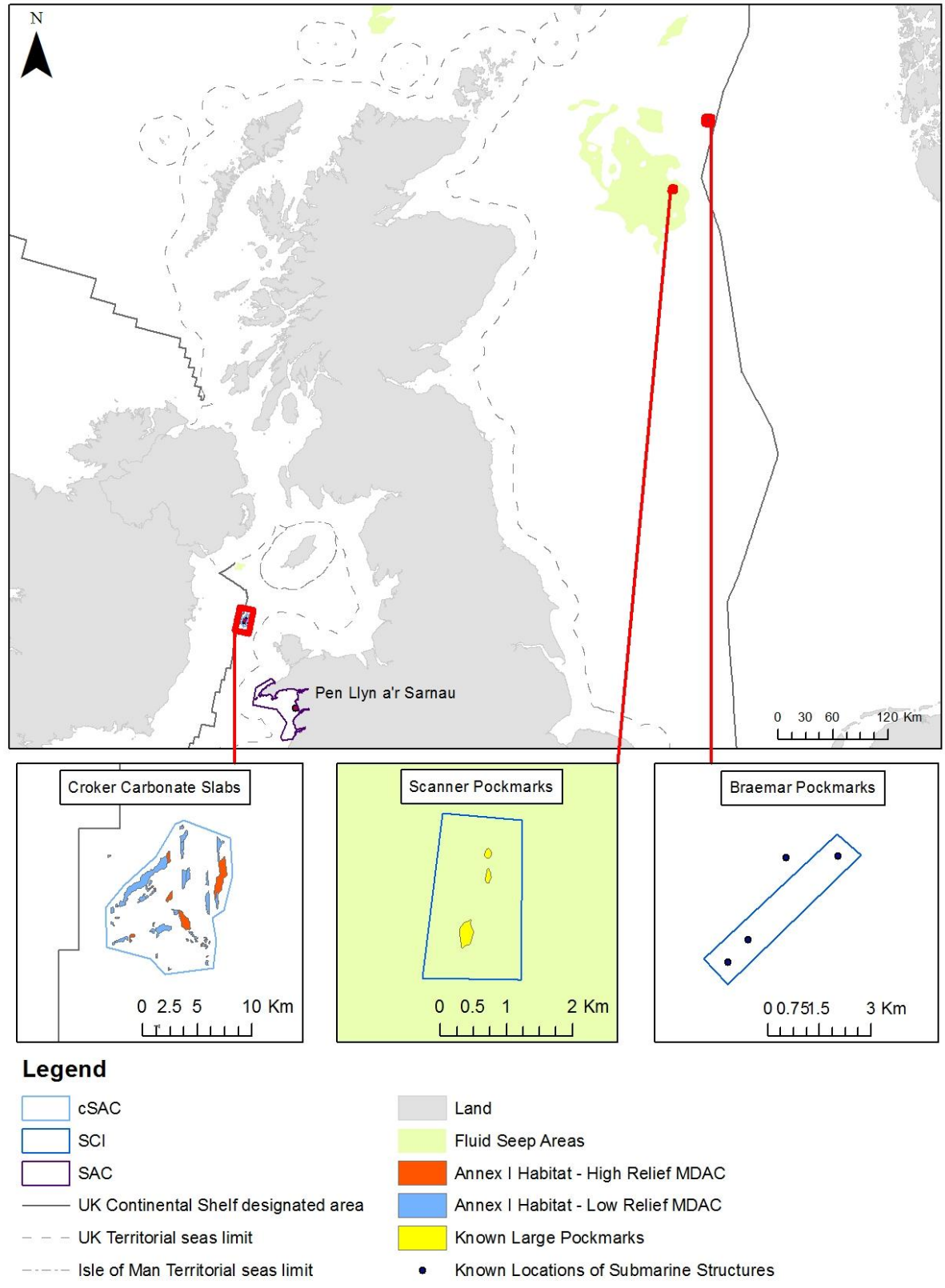
7 Assessment of the contribution of SACs for submarine structures made by leaking gases to the UK Natura 2000 network

7.1 There are three sites in UK waters that were submitted to the European Commission for the feature 'submarine structures made by leaking gases'. These sites are located in the Irish Sea and Northern North Sea and constitute both sub-types of this feature ('bubbling reef', as seen in Croker Carbonate Slabs and Pen Llyn a'r Sarnau sites and; 'pockmarks', as seen in the Braemar and Scanner pockmark sites).

7.2 Figure 10 illustrates the location of these sites and is shown against the backdrop of seabed fluid seep areas in the UK as this extent was used in conjunction with known locations of Methane-Derived Authigenic Carbonate (MDAC) to calculate 2013 Article 17 Range for this feature within the UK.

[20] From 1st April 2013 NRW has absorbed the functions of the former CCW

Figure 10. Distribution of SAC, SCI and cSAC for Annex I Submarine structures made by leaking gases habitat (1180) in the UK.



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7.3 The total area of the habitat in UK waters is unknown due to the practical difficulties of detecting MDAC remotely. The 2013 value for known occurrences of the habitat in UK waters cover an area under 100 km^2

7.4 The current 2013 estimated surface area range for this feature is 13,164 km^2. There is insufficient data on the habitat to determine its true range, due to the practical difficulties in detecting MDAC remotely. Nevertheless, it is possible to identify sites at which MDAC is likely to occur by identifying 'shallow gas' (gas in the sediments close to the seabed), gas seeps, and seabed features associated with gas seepage (pockmarks, mud volcanoes etc.) (Judd, 2005; Judd et al., 2007). The range illustrated above represents areas of known occurrence of the habitat to date and areas that have the potential for the habitat to occur. Consequently, it likely constitutes a low accuracy representation of the actual range of Submarine structures made by leaking gases in UK waters.

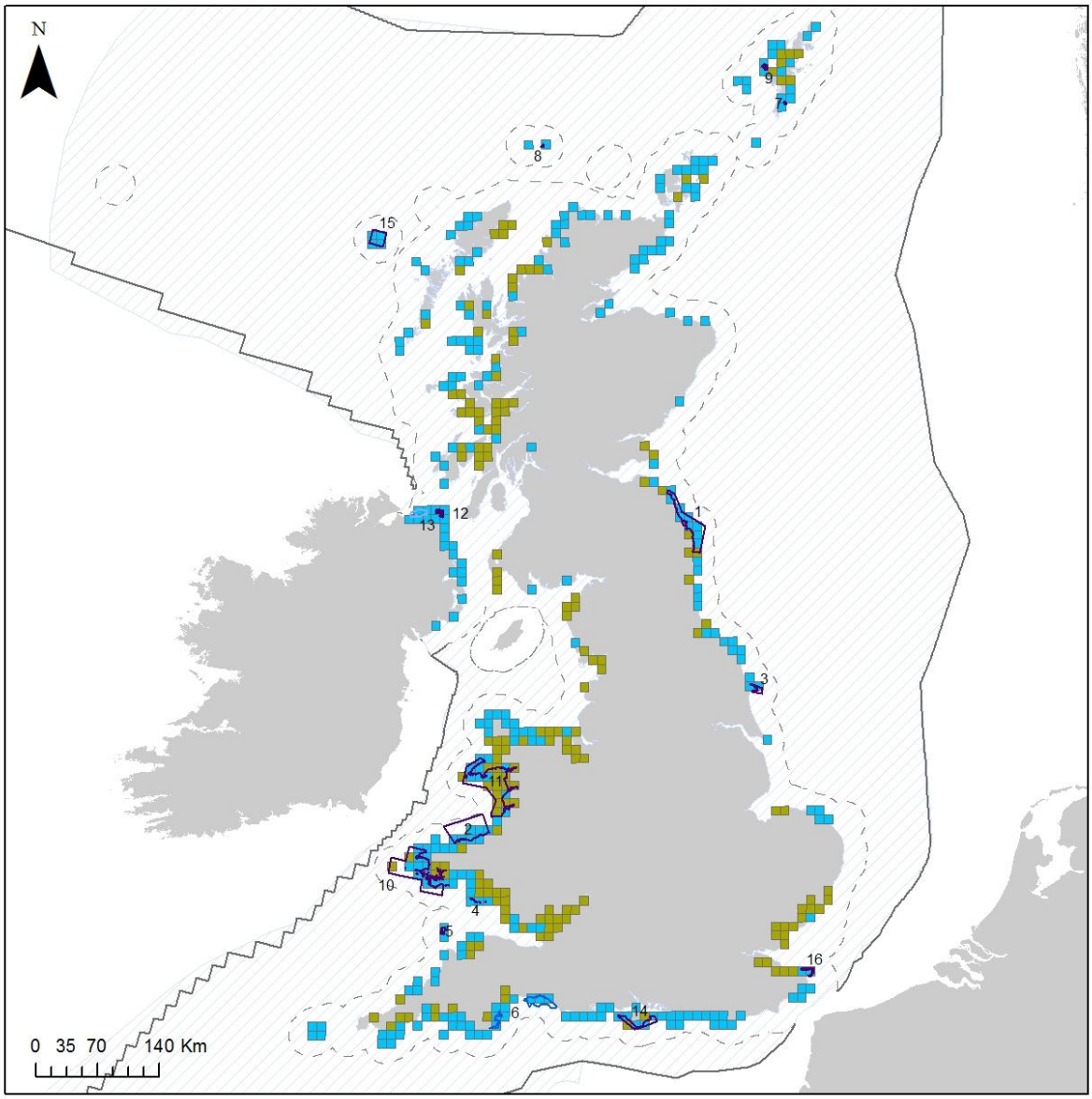
7.5 At present, these four sites are considered appropriate to complete the contribution to the network for this Annex I feature within the UK unless further data are secured to show the presence of the habitat in other locations.

8 Assessment of the contribution of SACs for sea caves to the UK Natura 2000 network

8.1 There are two UK sites which have recently been submitted to the European Commission for submerged or partially submerged sea caves: Lyme Bay & Torbay SCI in the Western English Channel & Celtic sea regional Sea; and Skerries & Causeway cSAC in the Minches and West Scotland regional sea. While the current EC status of sea caves within Northern Scotland is still under 'Scientific Reserve', none of the D grade sea cave sites in Scotland can be recommended for upgrading to a C grade, therefore no further assessment or survey of sea caves is intended within Scottish waters. In the South West region of England, the EC state that further sites may be required to achieve sufficient coverage of sea caves, if such qualifying caves exist there.

8.2 Figure 11 indicates the current full extent of sea cave SAC / SCI within the UK.

Figure 11. Distribution of SACs, SCIs and cSACs for Annex I submerged or partially submerged sea caves habitat (8330) in the UK.



Legend

- Seacave Area
- Seacave Range

SAC with Annex I habitat as a feature

Status

- SAC
- SCI
- cSAC
- UK Continental Shelf designated area
- UK Territorial seas limit
- British Fishery Limit
- Land

1 Berwickshire & North Northumberland Coast SAC
2 Cardigan Bay / Bae Ceredigion SAC
3 Flamborough Head SAC
4 Limestone Coast of SW Wales / Anfordir Calchfaen de Orllewin Cymru SAC
5 Lundy SAC
6 Lyme Bay & Torbay SCI
7 Mousa SAC
8 North Rona SAC
9 Papa Stour SAC
10 Pembrokeshire Marine / Sir Benfro Forol SAC
11 Pen Llyn a r Sarnau / Llyn Peninsula & the Sarnau SAC
12 Rathlin Island SAC
13 Skerries & Causeway cSAC
14 South Wight Maritime SAC
15 St Kilda SAC
16 Thanet Coast SAC

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9 Summary of progress towards completion of the UK network of Marine SACs for Annex 1 qualifying features

9.1 In summary, significant progress has been made towards completion of the marine SAC network for Annex I habitats since the last report to Joint Committee in December 2008. 15 offshore sites and 12 inshore sites have been submitted to the European Commission.

9.2 With specific reference to Annex I sandbanks and Annex I reefs (which were the primary focus of this paper due to the high contribution of these habitats required from SACs in offshore waters):

- These habitats are now represented within the network throughout their known natural range within UK waters; and

- Using area and range figures from Article 17 reporting 89% of the area and 23% of the range of Annex I sandbank and 25% of the area and 22% of the range of Annex I reef are now contained within the UK SAC network;

- The scientific case for an additional reef and subtidal sandbank site in Scotland is still being considered by Scottish Ministers and there remains one Area of Search for reef off North-West Anglesey.

10 Ongoing work on SACs for Annex I habitat in UK offshore waters

Assessment of additional areas

10.1 There is one remaining AoS (North West Anglesey Reef) being considered against the selection criteria as a joint inshore/offshore SAC for potential *M. modiolus* reef habitat. The site is still to be fully assessed for reef presence and quality and therefore cannot be decided upon at this stage. This site, if successful, will link in to the network by fulfilling representativity for the principle of natural range within the Irish Sea. If this site is considered to be appropriate for progressing forward it will not replace any existing site, and would instead add additional representation within this regional sea for biogenic reef, which currently has low representation due to limited known range.

10.2 While the North West Anglesey site is currently the only remaining AoS within UK waters, there may in the future be further sites investigated for their additional contribution to the network as our knowledge of the marine environment increases.

11 References

COMMISSION OF THE EUROPEAN COMMUNITY (CEC). 2007. The Interpretation Manual of European Union Habitats - EUR27 [online]. Brussels: European Commission DG Environment. Available from: http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm

DURAN MUNOZ ET AL. 2008. Suggestion of a new additional closure in Hatton Bank (ICES XIIb & VIb1). WGDEC Meeting. 10-14 March 2008. Copenhagen.

EUROPEAN COMMISSION. 2012. Sites of Community Interest (SCIs) in the United Kingdom: reserve list of habitat types listed in annex I and species listed in annex II of the EU Habitats Directive 92/43/EEC. Available from EC's CircaBC site on Natura 2000: https://circabc.europa.eu/sd/d/b6ec8e31-8fab-4b9d-8f34-11016313e31a/Updated%20Conclusions%20UK%202012.pdf [Accessed January 2013]

EUROPEAN TOPIC CENTRE ON BIOLOGICAL DIVERSITY. 2008. Article 17 Consultation Tool – Coastal Habitats – Sandbanks which are slightly covered by seawater all the time and Reefs. Available from: http://biodiversity.eionet.europa.eu/article17/habitatsummary/?group=Y29hc3RhbCBoYWJpdGF0cw==&habitat=1170&region=MATL [Accessed December 2012]

HITCHEN, K., CAVILL, J.E. & BRETT, C.P. 2001. Rockall Continental Margin Project. Preliminary interpretation of high-resolution seismic data across Rockall Plateau, UK. BGS Technical Report CR/01/19.

HOWELL, K.L., DAVIES, J.S., HUGHES, D.J. AND NARAYANASWAMY, B.E. 2007. Strategic Environmental Assessment-Special Area for Conservation photographic analysis report. UK: Department of Trade and Industry (DTI) and the Department of Food and Rural Affairs (DEFRA).

JNCC. 2003 Joint Nature Conservation Committee Paper: Marine Natura 2000 (JNCC 03 P01), March 2003 [online] Peterborough: JNCC. Available from: http://www.jncc.gov.uk/PDF/comm03P01pt1.pdf [Accessed December 2012]

JNCC. 2004. UK regional seas. Available from: http://jncc.defra.gov.uk/page-1612 [Accessed December 2012].

JNCC. 2006. Towards achieving a representative suite of marine habitat SACs for UK waters: Update on progress (JNCC 06 N09), December 2006. JNCC, Peterborough. Available from: http://www.jncc.gov.uk/pdf/comm06N09.pdf [Accessed December 2012]

JNCC. 2009. Progress towards completing the UK network of marine Special Areas of Conservation (SACs) for Annex I habitats and site proposals for Hatton Bank and Bassurelle Bank. Available from: http://jncc.defra.gov.uk/pdf/comm_08P14a.pdf [Accessed December 2012]

JNCC. 2012. UK Guidance on defining boundaries for marine SACs for Annex I habitat sites fully detached from the coast. Peterborough: JNCC. Available from: http://jncc.defra.gov.uk/pdf/SACHabBoundaryGuidance_2012Update.pdf [Accessed December 2012]

JUDD, A.G. 2005. The distribution and extent of methane-derived authigenic carbonate. DTI Strategic Environmental Assessment, Area 6. Report to the DTI. 69 pp.

JUDD A., CROKER P., TIZZARD L., VOISEY C., 2007. Extensive methane-derived authigenic carbonates in the Irish Sea. *Geo-Marine Letters.* 27: 259-267.

MCLEOD, CR, YEO, M, BROWN, AE, BURN, AJ, HOPKINS, JJ, & WAY, SF. (eds.) 2005 *The Habitats Directive: selection of Special Areas of Conservation in the UK*. 2nd edn. Joint Nature Conservation Committee, Peterborough. Available from: www.jncc.gov.uk/SACselection [Accessed January 2013]