Marine Conservation Zones

Natural England's advice to Defra on Marine Conservation Zones for designation in 2019

Annex 2: Advice on New Site Options

31st May 2019

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1 Introduction

1.1 Background to development of new site options

The UK Government and Devolved Administrations are committed to creating an ecologically coherent network of Marine Protected Areas (MPAs) in UK waters. To define what would be required to create this network, the Joint Nature Conservation Committee (JNCC) and Natural England used design principles set out in guidance published by the Oslo/Paris Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR 2006) to create the 'Ecological Network Guidance' (ENG) (Natural England and JNCC 2010). A variety of types of MPAs (e.g. Marine Conservation Zones, Special Areas of Conservation and Special Protection Areas) contribute to this network in UK waters, which will deliver benefits more effectively than individual MPAs can achieve alone.

Marine Conservation Zones (MCZs) are a form of MPA created under the Marine and Coastal Access Act 2009 (HM Government 2009). Through four regional projects, sea users and interest groups were given the opportunity to identify potential MCZs using the ENG as a basis for identifying sites. These projects recommended 127 MCZs in September 2011.

Following the second tranche of MCZ designations, JNCC reviewed the UK's progress toward an ecologically coherent network of MPAs against the criteria set out in the ENG (JNCC 2016) on behalf of Defra. This review concluded that, even with all of the remaining options put forward by the regional projects which remain under consideration in the third and final tranche of MCZ designation, a fully complete network will not be achieved. Defra therefore requested that JNCC and Natural England identify new potential site and feature options to fill remaining ecological gaps in the network.

For full details of the process followed in order to identify potential new site options please see 'Identifying potential site options to help complete the Marine Protected Area network in the waters around England' (JNCC and Natural England 2016). For an overview of the inshore and offshore new site options identified by JNCC and Natural England in response to Defra's request, and their potential contributions to filling the remaining gaps identified in the MPA network, please see Appendix 1 of this advice document*:* **Overview of the contribution to the MPA network of inshore and offshore site options being considered as potential MCZs in 2017**. This appendix was jointly produced by Natural England and JNCC.

The Minister made decisions over which of the Tranche 3 sites under initial consideration were included in Defra's Tranche 3 public consultation. This included sites originally recommended by the Regional Projects and the potential new site options more recently developed by JNCC and Natural England. These decisions took into account the scientific advice provided by JNCC and Natural England as well as socio-economic considerations. Full, updated advice has been provided in this document only for those new site options included in Defra's Tranche 3 public consultation – see annex 1 for updated advice on regional project sites.

1.2 About this advice document

This advice, **Annex 2** of Natural England's Tranche 3 confirmed post-consultation advice on new site options, outlines the processes by which Natural England developed the inshore new site options and summarises the results for each of the individual inshore new site options in turn. This covers six new site options, two of which are NGO-recommended sites for Highly Mobile Species only.

This advice annex should be read alongside 'Identifying potential site options to help complete the Marine Protected Area network in the waters around England' (JNCC and Natural England 2016), which will be referred to throughout this advice, for full details of the processes undertaken to identify the new site options.

This advice annex contains a summary of the results of our assessments for the features associated with each of the new site options and indicates where/if these have changed as a result of new evidence received since our pre-application advice. The full assessment results for each site option can be found in **Annex 3: Results tables for advice on Regional Project recommended sites (pMCZs) and New site options**.

The tables in **Annex 3** provide the following details of our advice for the new site options:

- **Confidence Assessment:** assessment of confidence in the evidence for presence and extent of features (Table 1)
- **Data sufficiency – Feature level:** analysis of whether sufficient evidence is present to support the designation of each feature of a site i.e. it provides the results of the feature-level 'sufficiency assessment' process (Table 2)
- **General Management Approach (GMA) (and Risk):** advice on the *likely* feature condition and our confidence in that condition, the GMA and risk[1] (where applicable), along with narratives to explain the advice (Table 3)
- **Triggering activities:** contains information on the socio-economic activities, or direct evidence of feature condition, that have triggered a recommendation of a Recover GMA (Table 4)
- **Highly Mobile Species results:** summary of the assessment of Highly Mobile Species features against the four principles and the resultant GMA advice (Table 5).
- **T1 and T2 Site Features:** Confidence in presence and extent and GMA advice for additional features to previously designated sites (Table 6).
- **Evidence:** evidence sources used and not used (Table 7 and Table 8, respectively)

Section 3 of the **Advice overview document** contains full introductions to each of these results tables.

The following sections of this advice annex will describe the inshore new site options developed by Natural England:

Table 1 lists the inshore new site options, along with the biogeographic region in which they are located and the features included within each new site option which could address identified network shortfalls (network critical features). The table also lists any other features for which we are providing advice (network beneficial features).

The remaining sections then introduce each new site option in greater detail. The purpose of each site is set out including details of the network shortfall(s) that each new site option addresses. The site descriptions include more detailed introductions to the general location of the sites and site boundaries, the data supporting the features (using the most up to date evidence as of the Tranche 3 public consultation) and the processes by which the new site option was selected (referring to JNCC and Natural England 2016). The best available evidence for the features within the new site options is mapped (see Section 1.4 of this document which introduces the feature maps) and a summary table of results is provided.

Defra's public consultation provided the formal opportunity for stakeholders to express their opinions on, or submit any evidence relating to the site options included in the consultation by the Minister. Defra hold the current stakeholder information.

For the background to all MCZ features, including the new site option features we are providing advice on, please see Annex 2 of the ENG 'Features of the MPA network' (Natural England and JNCC 2010).

[1] Advice on risk is not provided for the new site options; see Section 2 of Natural England's confirmed advice to Defra on Marine Conservation Zones to be considered for consultation in 2017 – Advice overview document for further details

For specific details and descriptions of individual features please see the JNCC MCZ features information pages: http://jncc.defra.gov.uk/page-4527.

Finally, **Appendix 1: Overview of the contribution to the MPA network of inshore and offshore site options being considered as potential MCZs in 2017**, was jointly produced by Natural England and JNCC and provides a summary of all the new site options put forward by JNCC and Natural England in 2017 including the potential contributions of each site to filling the identified shortfalls in the MPA network (JNCC 2016). Not all of these options were taken forward to consultation, but the contribution figures for those that were are still accurate in relation to the 2016 network analysis.

This advice annex will not detail the specific methods or quality assurance process used to produce Natural England's advice on each new site option as these are explained in **Section 2** of **Natural England's confirmed advice to Defra on Marine Conservation Zones for designation in 2019 – Advice overview document**.

In particular, the following are key components of our advice on the new site options (and Regional Project recommended MCZs) that are described within Section 2 of the **Advice overview document**:

- Confidence in feature presence and extent
- Condition assessment, General Management Approach (GMA) and Risk
- Advice on the scientific basis to support feature / site designation (Data sufficiency)

1.3 Summary of inshore new site options taken to public consultation

Table 1 Inshore (0-12 nautical miles) new site options detailed in this advice

Site name (~site area)	**Biogeographic region**	**Feature(s)** (Network critical features shown in bold, network beneficial features shown in standard text; JNCC (2016))
Albert Field (191 km^2)	Eastern Channel	**Subtidal coarse sediment, Subtidal mixed sediment**
Purbeck Coast* (282 km^2)	Eastern Channel	**Maerl beds, Subtidal coarse sediment, Subtidal mixed sediments, Stalked jellyfish (*Haliclystus* species), High energy intertidal rock**, Intertidal coarse sediment, Moderate energy intertidal rock, Peacock's tail (*Padina pavonica*)
Helford Estuary (6 km^2)	Western Channel and Celtic Sea	**Native oyster (*Ostrea edulis*)**
North West of Lundy (173 km^2)	Western Channel and Celtic Sea	**Subtidal coarse Sediment**
Berwick to St Marys (634 km^2)	Northern North Sea	Eider (*Somateria mollissima)*
Southbourne Rough (5 km^2)	Eastern Channel	Black seabream (*Spondyliosoma cantharus*) (nesting)

*Features not listed in bold for Purbeck Coast refer to those originally proposed through the Broad Bench to Kimmeridge Bay rMCZ.

1.4 Feature maps

The site feature maps displayed in the site summary sections below show presence and extent of features we are advising be considered for designation for each new site option. It should be noted that the maps do not indicate confidence in the feature data. Full confidence assessment results for the

features for which we have provided advice to Defra can be found in **Table 1 of Annex 3 – Results Tables**.

Please note the following about the feature maps provided:

• Features for which we have no spatial geo-referenced data have not been mapped and thus do not appear in the legend.

• Features that are confidential, for example commercially sensitive species such as oysters, have not been mapped.

This means that no feature maps have been provided for the **Helford Estuary** new site option, as the only feature we are providing advice on for this site is native oyster (*Ostrea edulis*) (Table 1).

Where geo-referenced extent data are available, features have been mapped as polygons to show mapped extent according to data originating from surveys and mathematical models; and points show where groundtruthing sampling points, such as diver survey, grab sampling, drop down video, walk over survey or core sampling have been collected. For some sites, both polygon extent data and point data are available and in these cases both types have been mapped.

Due to the scale of the maps in printed form and the need for the maps to show the sites in their entirety, rather than split them, some features of very limited spatial extent, such as intertidal habitats, are not easily recognisable. However, their presence in the site is confirmed by the feature being listed in the legend.

2 New site option – Albert Field

2.1 Purpose of site

There is currently a shortfall in the Eastern Channel region for the broad-scale habitats '**Subtidal coarse sediment**' and '**Subtidal mixed sediments'**. Albert Field is a new site option that has been proposed to contribute to these shortfalls in the network.

2.2 Site description and boundary notes

The Albert Field site option is located approximately 20 kilometres south of the entrance to Poole Harbour, extending from the six nautical mile limit at its northern boundary to the 12 nautical mile limit at its southern boundary. It lies approximately six kilometres east of the South Dorset MCZ (designated in 2013 for subtidal coarse sediments, subtidal chalk and moderate energy circalittoral rock) and approximately five kilometres southeast of the Purbeck Coast new site option (see Section 3 of this document for Purbeck Coast introduction). The Albert Field new site option covers an area of approximately 191 km^2.

Subtidal coarse sediments are generally comprised of cobbles, pebbles, coarse sand and gravel. This habitat is often highly mobile. These coarse sediments may provide habitat for a wide range of species: barnacles, encrusting pink calcareous algae and *Spirobranchus* spp. tube worms encrusting on cobbles and pebbles; anemones *Halcampa chrysanthellum* and *Edwardsia timida* and the sea cucumber (*Neopentadactyla mixta*) burrowing in gravelly sediment and echinoderms such as urchins and the spiny starfish (*M. glacialis*) and *Asterias rubens* living on the gravelly sediment. In sandier sediments, a range of polychaete worm species may dominate, including dense aggregations of sand mason worms *L. conchilega*, and subtidal beds of rossworm reefs *Sabellaria spinulosa* may form. Additionally, this habitat provides the supporting substrate for the establishment and growth of maerl beds.

Subtidal mixed sediments, as the name suggests, are generally compromised of a range of different types of sediment from muddy, gravely sands to mosaics of cobbles and pebbles in or on a sand, gravel or mud seabed. Mixed areas also include seabeds where waves or ribbons of sand form on the surface of a gravel bed. Because mixed seabeds are so varied, they may support a wide range of animals, both on and in the sediment. Animals found here include worms, bivalves, starfish and urchins, anemones, sea firs and sea mats.

Please note the above descriptions and the listed species are not derived from our evidence and so may not be representative of the sediments in the site but rather are merely a guide as to what you commonly find at or in these types of habitats and their ecological importance. This site option was initially identified and developed through the stage one method of using the best available biophysical data to identify new site options (JNCC and Natural England 2016).

To see details of the gaps in the MPA network, and how this site option contributes towards filling them, as understood when the site was recommended, please see *Appendix 1*.

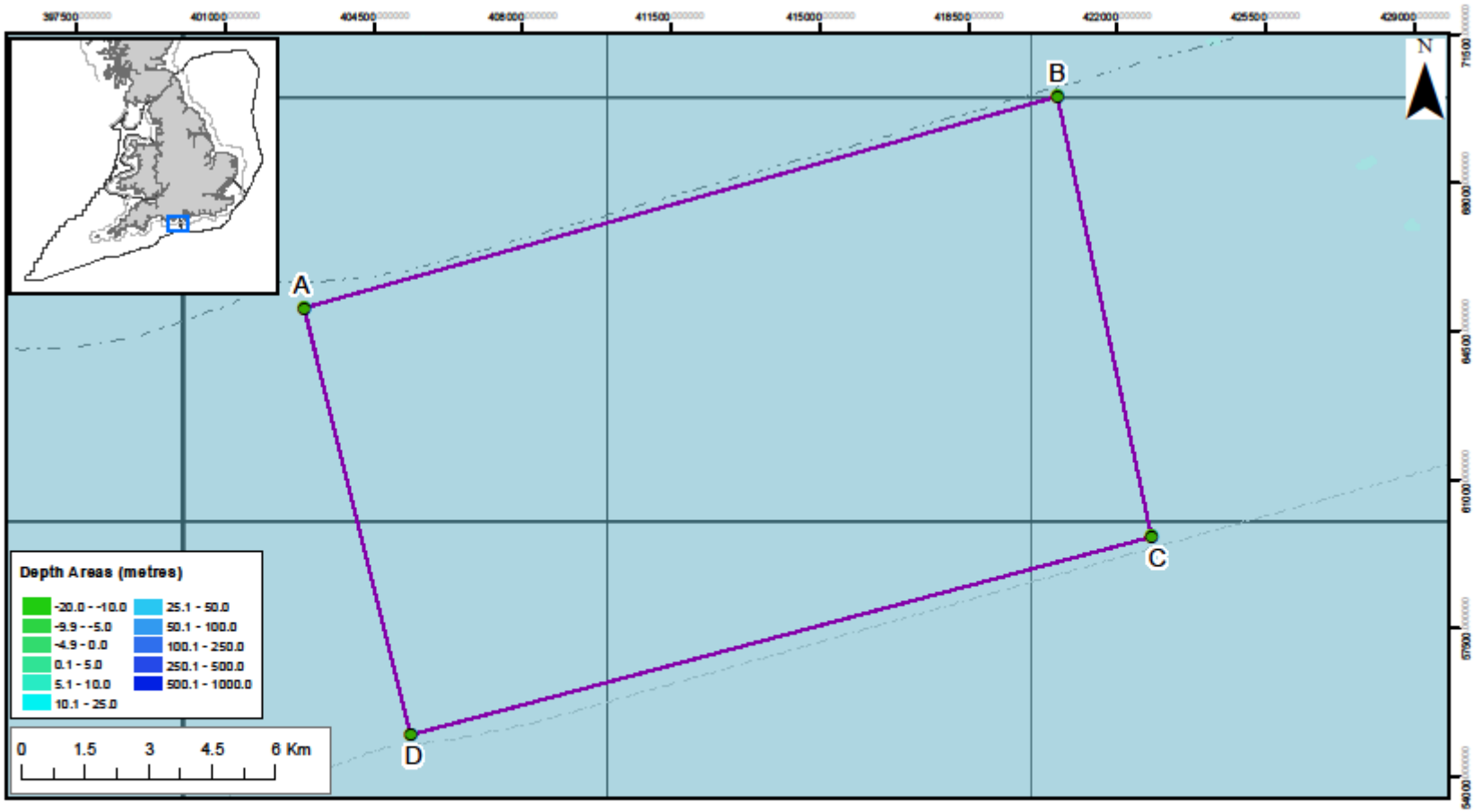
2.3 Site Image

Image 1 Subtidal coarse sediment © Cefas (Please note this photograph is provided as an example of the above habitat and feature only and does not necessarily represent the habitats and features found at the site)

2.4 Considerations on data quality

The Albert Field site option was originally developed to encompass the highest density of high confidence subtidal coarse sediment and subtidal mixed sediment ground-truthed sample data within a large area of coarse sediment that lies to the south of Poole Bay. These data were mapped by EUSeaMap. Recently obtained data partly contradicts some of the areas mapped as coarse sediment by EuSeaMap; however, there is still sufficient confidence in its presence and extent. The polygonal data available in the Albert Field site is of relatively poor detail and therefore, while we currently lack mapped data for subtidal mixed sediments, the high quality ground-truthing points provide sufficient confidence in its presence and extent.

2.5 Boundary map



Point	Lat	Long
A	50° 29' 7.189" N	1° 57' 39.742" W
B	50° 31' 47.196" N	1° 42' 37.793" W
C	50° 26' 10.295" N	1° 40' 47.488" W
D	50° 23' 40.871" N	1° 55' 33.858" W

Figure 1 Albert Field new site option boundary

2.6 Feature map

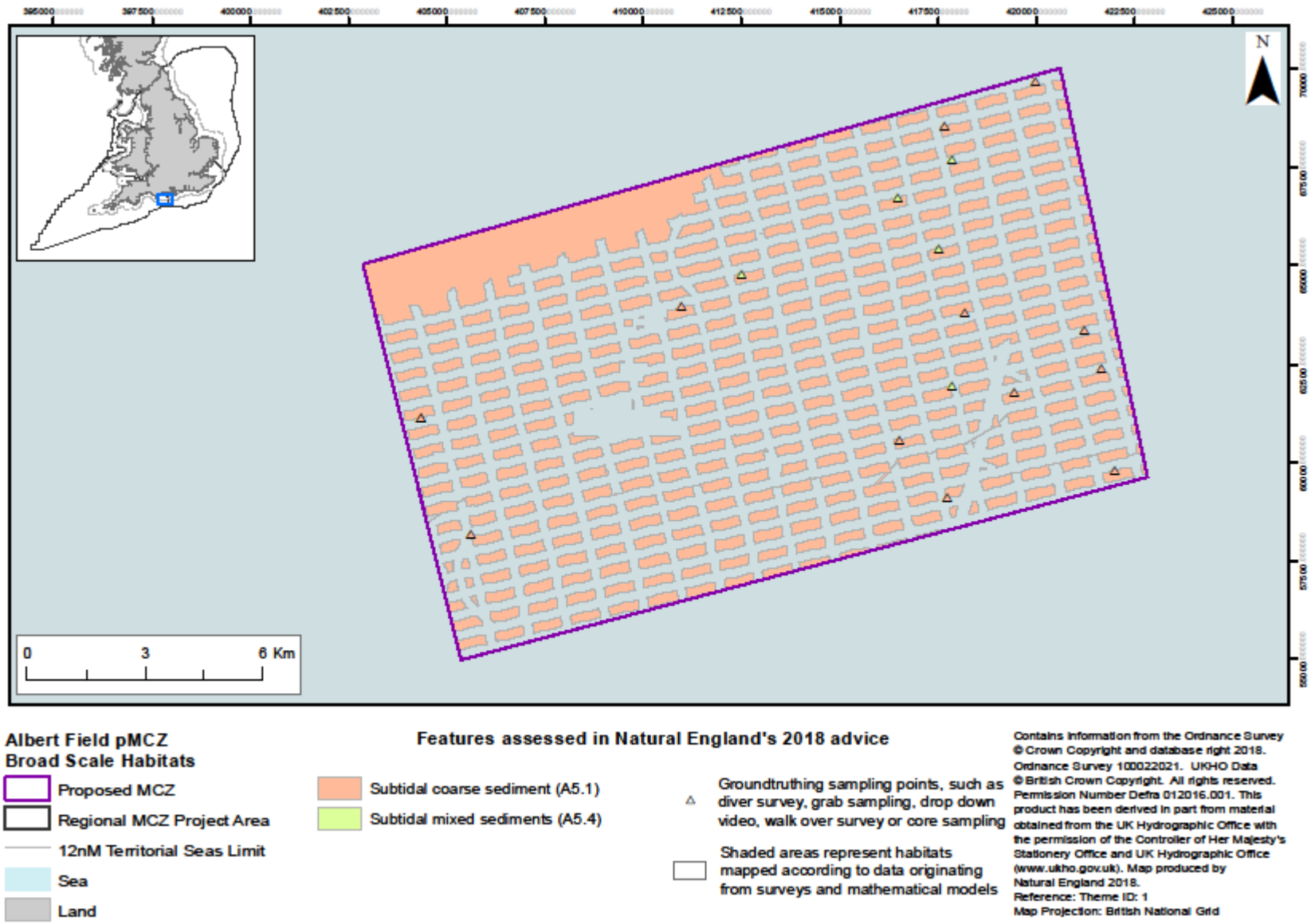


Figure 2 Location of mapped broad-scale habitats in Albert Field new site option

2.7 Results

All assessment results for the site are listed in **Annex 3: Results tables**. For descriptions and introductions to the results tables, please see Section 3 of the **Advice overview document.**

Table 2 contains a summary of Natural England's assessment results for the Albert Field new site option.

Feature name	Confidence in feature presence	Confidence in feature extent	Current likely condition of feature	Advice on the General Management Approach (GMA)	Rationale where the advised GMA has changed since the pre-consultation advice
Subtidal coarse sediment	High	Moderate	Unfavourable	Recover	No change
Subtidal mixed sediments	High	Moderate	Unfavourable	Recover	No change

3 New site option – Helford Estuary

3.1 Purpose of site

The species of conservation importance (SOCI), **Native oyster *Ostrea edulis***, currently represents a network shortfall in the Western Channel and Celtic Sea region and the Helford Estuary new site option was proposed in order to contribute to filling this gap in the network.

3.2 Site description and boundary notes

The Helford Estuary new site option encompasses the Helford Estuary, southwest of Falmouth in Cornwall, and overlaps with the Fal and Helford SAC designated for Annex 1 habitats of Reefs, Sandbanks which are slightly covered by seawater at all times, Large shallow inlets and bays, Estuaries, Mudflats and sandflats not covered by seawater at low tide and Atlantic salt meadows. Although the estuary is already designated as an SAC, the intertidal habitats inhabited by native oyster are not consistently protected within the SAC boundary. The Helford Estuary site option covers an area of approximately 6 km^2.

The proposed MCZ boundary for the Helford site follows the boundary of the Fal and Helford SAC within the estuary. However, the boundary of the MCZ site is set at mean high water, whereas the boundary of the SAC is set at mean low water. Where the SAC is underpinned by an intertidal SSSI, such as the Lower Fal and Helford Intertidal SSSI, the boundary of the SAC also extends to mean high water.

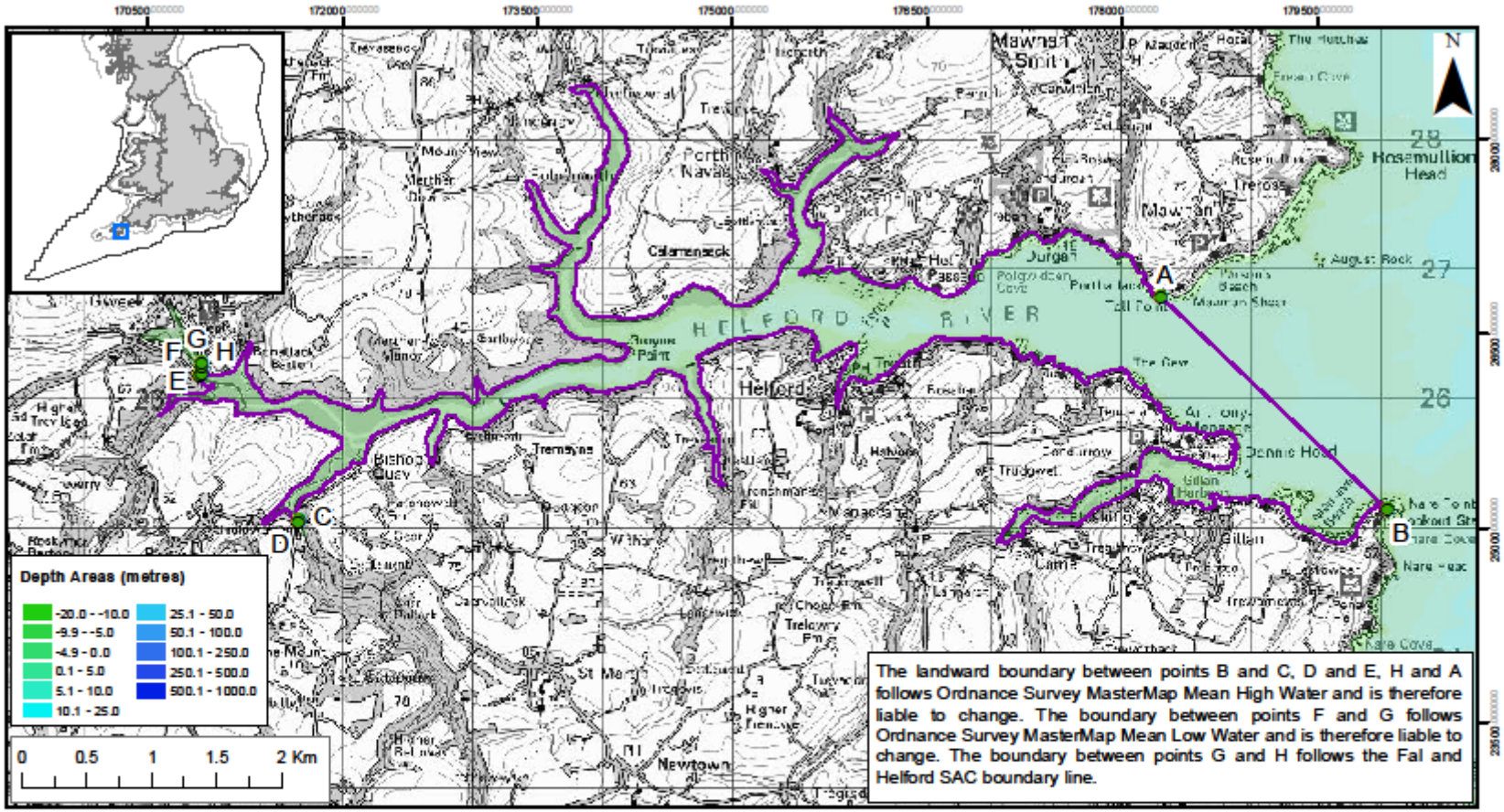
This site option was initially identified and developed through the stage one method of using the best available biophysical data to identify new site options (JNCC and Natural England 2016).

To see details of the gaps in the MPA network, and how this site option contributes towards filling them, as understood at the time the site was recommended, please see **Appendix 1.**

3.3 Site image

Image 2 Intertidal mud and blue mussel Mytilus edulis beds © Natural England/Philip Ray (Please note this photograph is provided as an example of the above habitat and feature only and does not necessarily represent the habitats and features found at the site).

3.4 Boundary map



Point	Lat	Long	Point	Lat	Long
A	50° 5' 58.676" N	5° 6' 5.077" W	E	50° 5' 29.292" N	5° 12' 16.088" W
B	50° 5' 8.180" N	5° 4' 33.546" W	F	50° 5' 29.590" N	5° 12' 15.260" W
C	50° 4' 53.938" N	5° 11' 34.718" W	G	50° 5' 31.226" N	5° 12' 15.451" W
D	50° 4' 53.690" N	5° 11' 35.241" W	H	50° 5' 32.351" N	5° 12' 15.053" W

Figure 3 Helford Estuary new site option boundary

3.5 Feature map

No feature map has been provided for the Helford Estuary new site option, as native oyster *Ostrea edulis* is a commercially sensitive species.

3.6 Results

All assessment results are listed in **Annex 3: Results tables**. For descriptions and introductions to the results tables please see Section 3 of the **Advice overview document**

Table 4 contains a summary of Natural England's post-consultation assessment results for the Helford Estuary new site option

Feature name	Confidence in feature presence	Confidence in feature extent	Current likely condition of feature	Advice on the General Management Approach (GMA)	Rationale where the advised GMA has changed since the pre-consultation advice
Native oyster (*Ostrea edulis*)	High	High	Unfavourable	Recover	No change

4 New site option – North West of Lundy

4.1 Purpose of site

The broad-scale habitat, **Subtidal coarse sediment**, currently represents a network gap in the Western Channel and Celtic Sea region and the North West of Lundy new site option has been proposed in order to contribute to reducing this shortfall in the network.

To see details of the gaps in the MPA network, and how this site option contributes towards filling them, as understood at the time the site was recommended, please see **Appendix 1**.

4.2 Site description and boundary notes

The North West of Lundy new site option is located approximately 15 kilometres northwest of Lundy Island and Lundy MCZ (designated in 2013 for spiny lobster) and Lundy SAC (designated for Reefs, Sandbanks which are slightly covered by sea water all the time and Submerged or partially submerged sea caves). The North West of Lundy new site option covers an area of 173 km^2 extending in an arc between the six and twelve nautical mile limits.

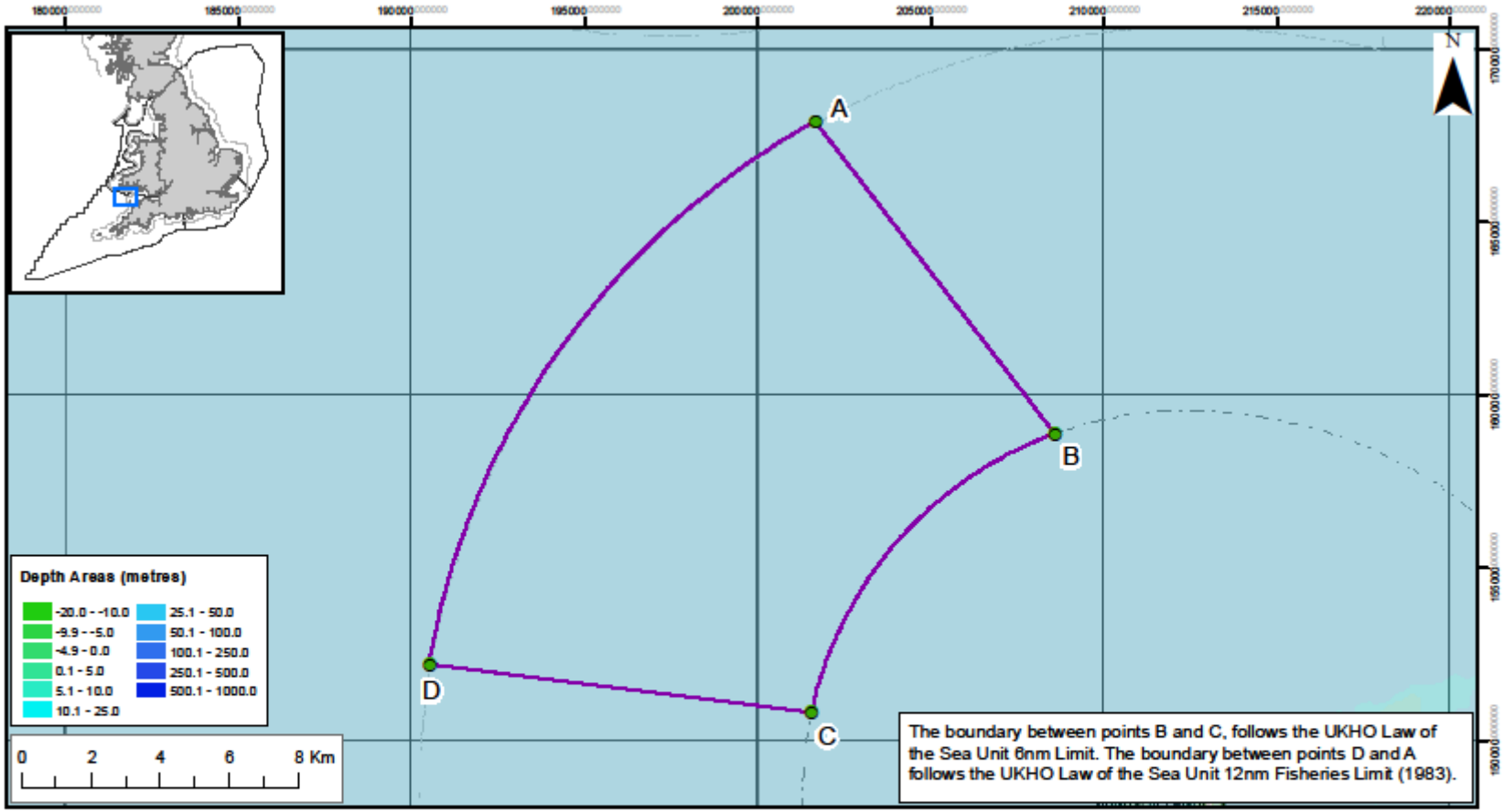
Data from both EUSeaMap and the Benthic Ecology Characterisation Report for the cancelled Atlantic Array offshore wind farm suggest that the North West of Lundy new site option fully comprises subtidal coarse sediment.

This site option was developed and proposed to Natural England by the North Devon Biosphere group following the removal of the original Regional Project recommended North of Lundy site which was to be co-located with the (since dropped) Atlantic Array Windfarm. This alternative proposal was submitted to Natural England and, with agreement from Defra, is included in this advice as a new site option given its contribution to the network gap for subtidal coarse sediment. The boundary of the North West of Lundy new site option was agreed with local stakeholders because the original proposal was in a very economically active area.

4.3 Site image

Image 3 Subtidal coarse sediment © CIFCA (Please note this photograph is provided as an example of the above habitat and feature only and does not necessarily represent the habitats and features found at the site)

4.4 Boundary map



North West of Lundy rMCZ Boundary

- Recommended MCZ
- Regional MCZ project area
- rMCZ boundary co-ordinates
- 6nM Limit
- 12nM Territorial Seas Limit
- Land

Point	Lat	Long
A	51° 22' 31.981" N	4° 51' 3.952" W
B	51° 17' 48.996" N	4° 44' 47.647" W
C	51° 13' 18.429" N	4° 50' 35.834" W
D	51° 13' 49.677" N	5° 0' 7.370" W

Figure 4 North West of Lundy new site option boundary

4.5 Feature map

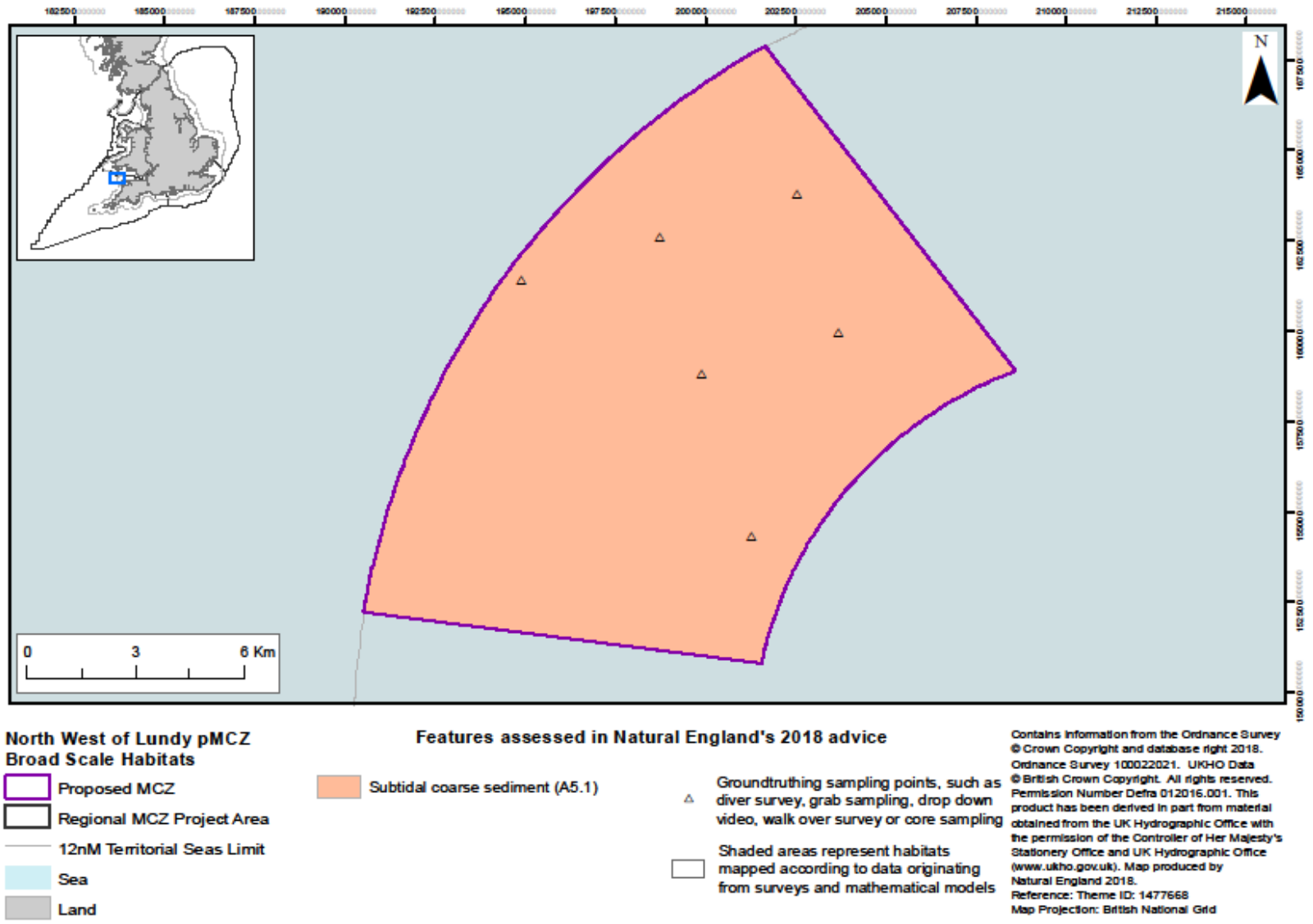


Figure 5 Location of mapped broad-scale habitats in North West of Lundy new site option

4.6 Results

All assessment results are listed in **Annex 3: Results tables**. For descriptions and introductions to the results tables please see Section 3 of the **Advice overview document**

Table 5 contains a summary of Natural England's post-consultation assessment results for the North West of Lundy new site option

Feature name	Confidence in feature presence	Confidence in feature extent	Current likely condition of feature	Advice on the General Management Approach (GMA)	Rationale where the advised GMA has changed since the pre-consultation advice
Subtidal coarse sediment	High	High	Unfavourable	Recover	No change

5 New site option – Purbeck Coast (including one Highly Mobile Species feature)

5.1 Purpose of site

This site is proposed to contribute to filling shortfalls in two subtidal sediment broad-scale habitats in the Eastern Channel region; '**Subtidal coarse sediment**' and '**Subtidal mixed sediments**', as well as the Habitat of Conservation Importance (HOCI), **Maerl beds**. It also contains a mobile species feature with the aim of protecting new locations for Black seabream *Spondyliosoma cantharus* (nesting) and is one of three sites proposed in Dorset. Nesting sites have been recorded off West Sussex, the Isle of Wight and Dorset and currently only one site, Kingmere MCZ, is designated to protect this feature. Unlike most other finfish that visit British waters to breed, the black bream exhibit highly selective 'nesting behaviour' (Pawson 1995). The physical requirements for the nesting sites are quite specific; near-horizontal bedrock with a thin layer of sediment. The overlying sediment is cleared away by the male leaving a circular patch of clean bedrock on which the eggs are laid (Collins & Mallinson 2012). The males remain at the nest site guarding the nests, until the eggs hatch and likely return to the same site to nest each year.Site description and boundary notes

Stretching from Ringstead Bay in the west to Swanage Bay in the east along the Jurassic Coast World Heritage Site is the Purbeck Coast new site option covering an area of 282 km^2.

The site also encompasses the intertidal features which were originally proposed within the Regional Project recommended (rMCZ) site Broad Bench to Kimmeridge Bay, the footprint of which falls within the Purbeck Coast site option. These features are: moderate energy intertidal rock, intertidal coarse sediment and peacock's tail *Padina pavonica*. In addition we are also providing Tranche 3 advice on the features: high energy intertidal rock and the stalked jellyfish *Haliclystus* species which have recently been found in the area of the former recommended site. As a result, separate advice has not been provided for the Broad Bench to Kimmeridge Bay rMCZ.

Purbeck Coast new site option completely overlaps with the eastern section of the Studland to Portland Special Area of Conservation (SAC), designated for Annex I Reef. The landward boundary of the new site option follows mean low water and extends offshore to the boundary of the SAC for the majority of the site. Where the new site option boundary reaches the Broad Bench to Kimmeridge Bay rMCZ area; the landward boundary moves to mean high water in order to include all of the intertidal features proposed for this site by the Regional Project. The seaward boundary remains that of the SAC.

Additionally, there is a small extension beyond the Studland to Portland SAC boundary at the eastern end of the Purbeck Coast new site option boundary. This is to encompass a high density of maerl bed habitat in this area.

The Purbeck Coast site option was developed by following stage one methods: 1) filling gaps by extending protection via MCZ designation to undesignated features in other MPAs and 2) through reviewing the available biophysical data to best identify new site options (JNCC and Natural England 2016).

The designated SAC reef feature is protected by a SIFCA byelaw which prohibits bottom towed fishing gears. The byelaw provides incidental protection for most, but not all, of the extent of the subtidal coarse and mixed sediment habitats mapped within the new site option. Designating these sediment habitats as MCZ features will ensure they are recognised for their conservation importance in their own right and will provide the statutory basis for these habitats to be protected against damaging activities, irrespective of the management implemented for the reef feature of the SAC.

Please note that prior to the development of the Purbeck Coast new site option, the original boundary of

the Broad Bench to Kimmeridge Bay rMCZ was amended to include further records of stalked jellyfish *Haliclystus* spp.. That boundary amendment is reflected in the advice for the listed rMCZ features as part of the Purbeck Coast new site option, as the latter fully encompasses the former.

To see details of the gaps in the MPA network, and how this site option contributes towards filling them, as understood when the site was recommended, please see Appendix 1.

The third party proposals for Black seabream *Spondyliosoma cantharus* (nesting) aim to protect the nesting adult black bream, the nests and capture suitable nesting habitat, shallow mixed and coarse sediments over near-horizontal bedrock during the nesting period between April and early July. Evidence suggests that black bream show some site fidelity and nesting bream are specifically targeted by recreational and commercial fisheries, which suggests the suitability of MCZs for protecting nesting black bream (Dapling, *et al.* 2016; Southern IFCA 2016a).

The mating season has been reported to occur between April and June (Lythgoe & Lythgoe 1991). However recent monitoring carried out by Doggett and Openshaw (2015) as part of the black bream project found that in 2015 nesting finished in June and the bream disappeared from some nesting sites for a short period. They returned in late June and early July (22nd June – 2nd July 2015) and over a 10-12 day period re-built nests, laid eggs and successfully guarded and hatched eggs. Secondary spawning peaks identified above are supported by studies by Gonçalves and Erzini (2000).

5.2 Site image

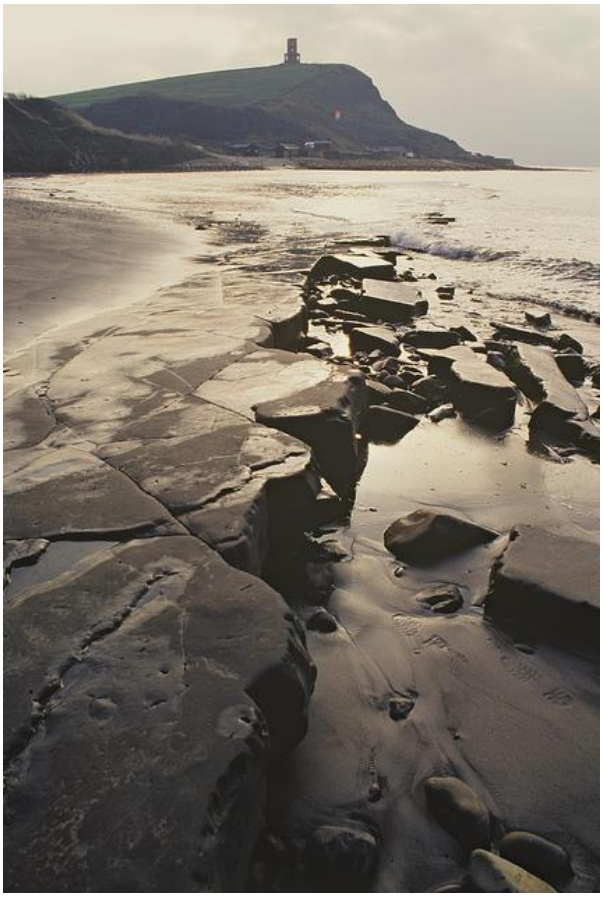
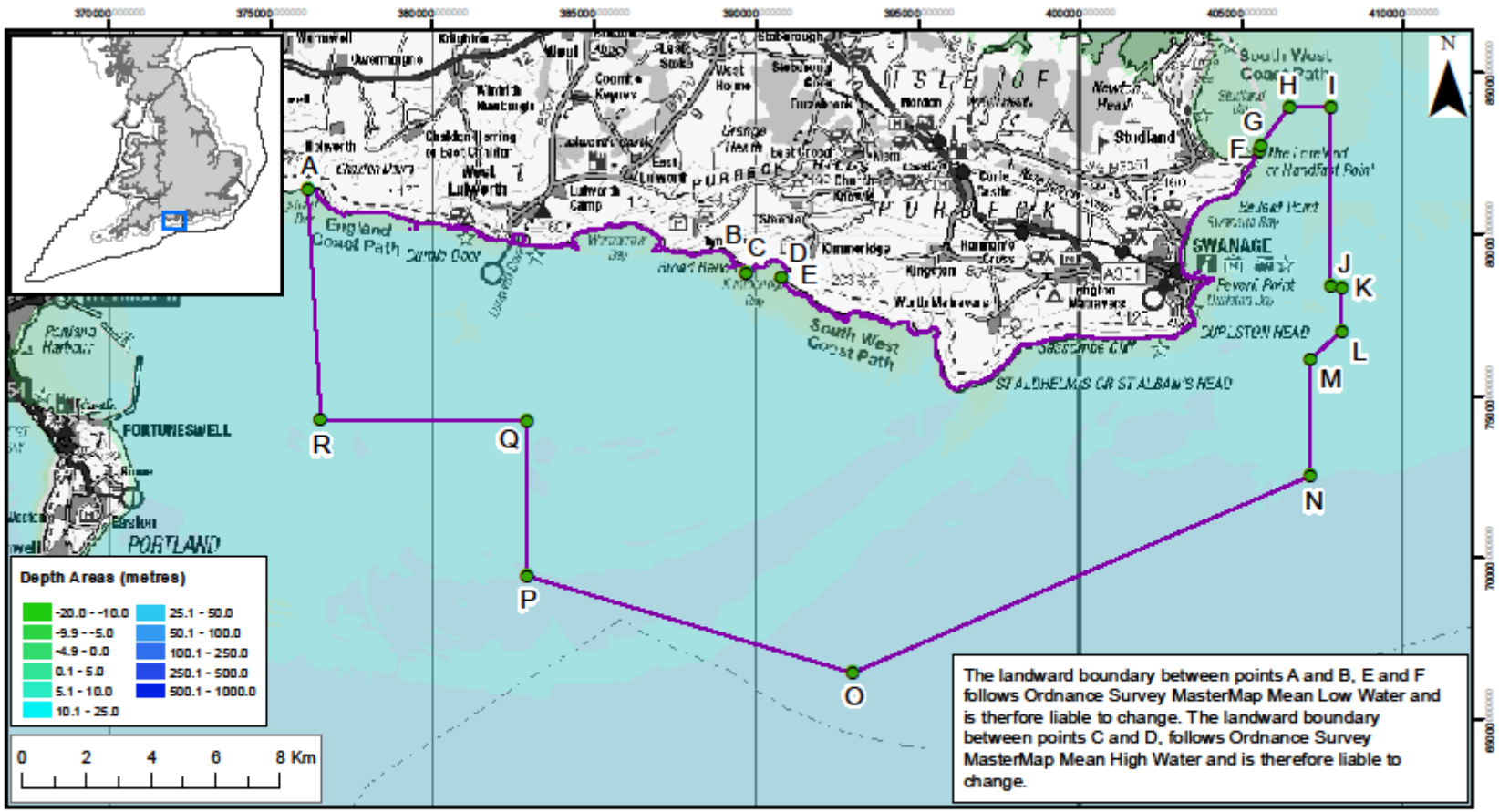


Image 4 Purbeck Coast © Natural England/Peter Wakely

5.3 Boundary map



Purbeck Coast rMCZ Boundary

- Recommended MCZ
- Regional MCZ project area
- rMCZ boundary co-ordinates
- 6nM Limit
- 12nM Territorial Seas Limit
- Land

Point	Lat	Long	Point	Lat	Long
A	50°37' 54.828" N	2°20' 20.197" W	J	50°36' 19.558" N	1°53' 29.359" W
B	50°36' 30.815" N	2°8' 49.489" W	K	50°36' 17.677" N	1°53' 12.879" W
C	50°36' 31.217" N	2°8' 48.716" W	L	50°35' 34.589" N	1°53' 12.982" W
D	50°36' 27.537" N	2°7' 53.725" W	M	50°35' 4.906" N	1°54' 2.407" W
E	50°36' 27.628" N	2°7' 54.270" W	N	50°33' 8.000" N	1°54' 3.000" W
F	50°38' 34.996" N	1°55' 20.651" W	O	50°29' 51.000" N	2°6' 1.000" W
G	50°38' 40.000" N	1°55' 20.000" W	P	50°31' 28.000" N	2°14' 32.000" W
H	50°39' 18.438" N	1°54' 34.539" W	Q	50°34' 3.000" N	2°14' 33.000" W
I	50°39' 18.450" N	1°53' 28.824" W	R	50°34' 4.000" N	2°19' 58.000" W

Figure 6 Purbeck Coast new site option boundary

5.4 Feature maps

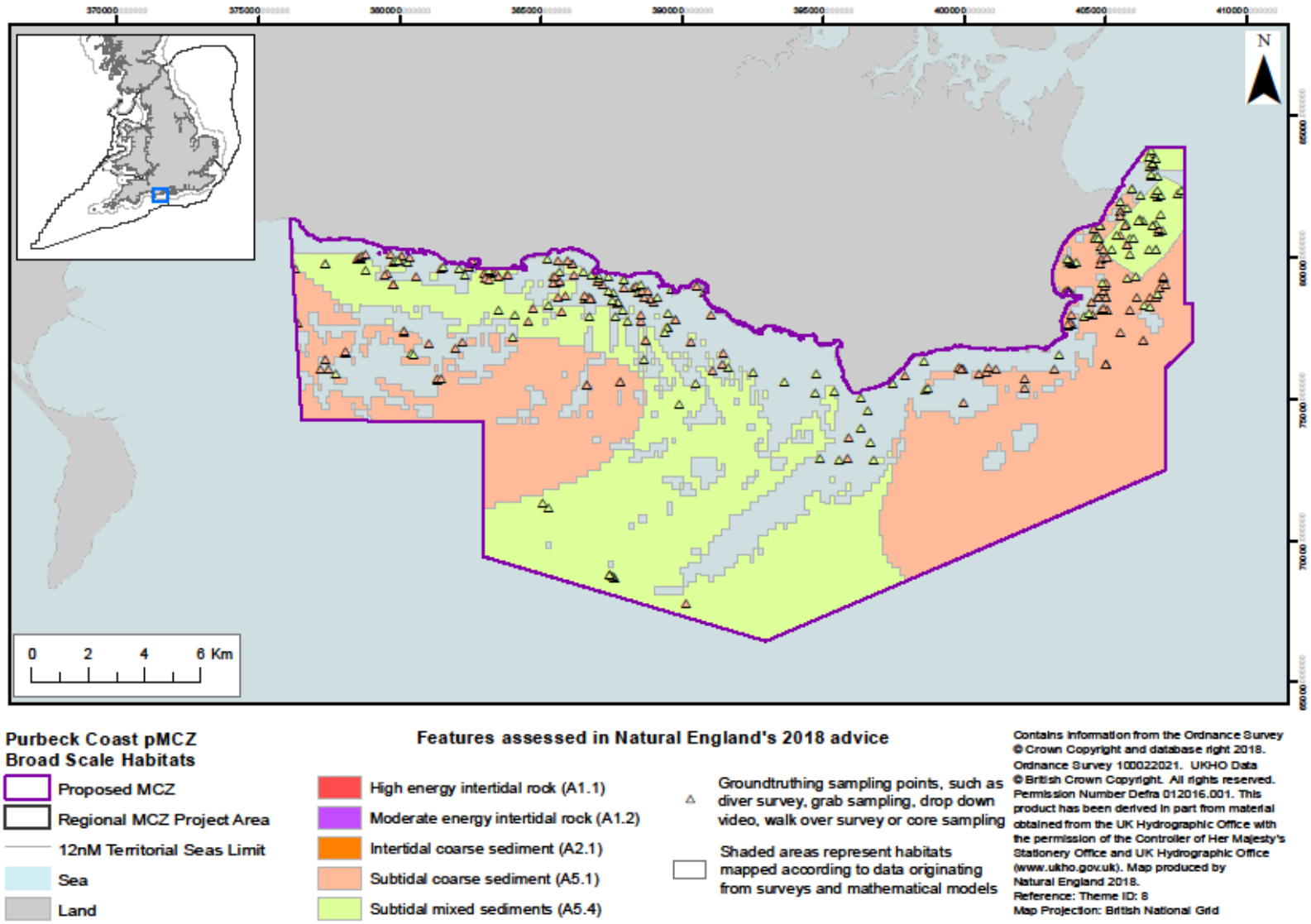


Figure 7 Location of mapped broad-scale habitats in Purbeck Coast new site option

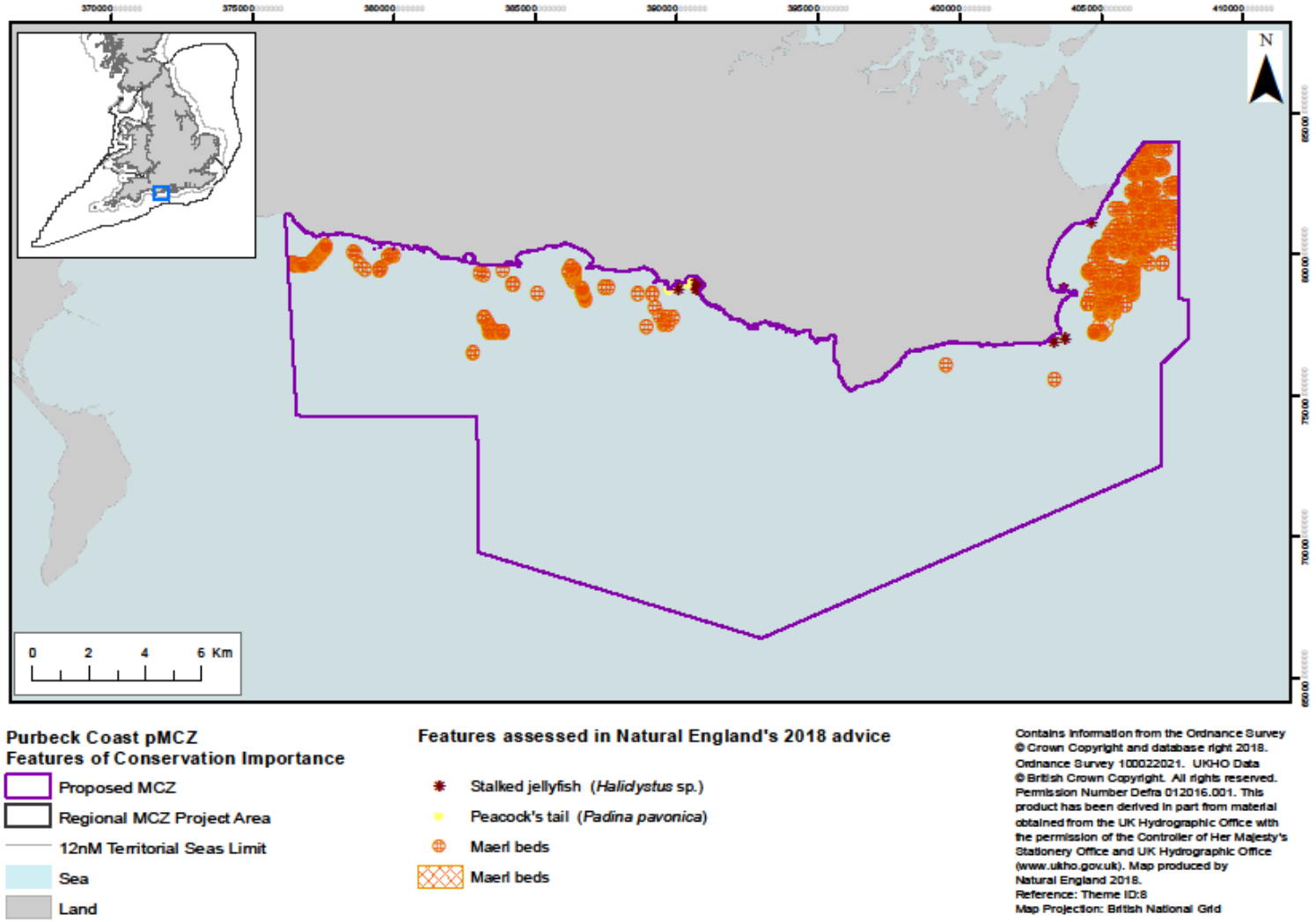


Figure 8 Location of mapped Features of Conservation Importance in Purbeck Coast new site option

5.5 Results

All assessment results are listed in **Annex 3: Results tables**. For descriptions and introductions to the results tables please see Section 3 of the **Advice overview document**

Table 6 contains a summary of Natural England's post-consultation assessment results for the Purbeck Coast new site option

Feature name	Confidence in feature presence	Confidence in feature extent	Current likely condition of feature	Advice on the General Management Approach (GMA)	Rationale where the advised GMA has changed since the pre-consultation advice
High energy intertidal rock	High	High	Favourable	Maintain	No change
Intertidal coarse sediment	High	High	Favourable	Maintain	No change
Moderate energy intertidal rock	High	High	Favourable	Maintain	No change
Peacock's Tail (*Padina pavonica*)	High	High	Favourable	Maintain	No change
Stalked jellyfish (*Haliclystus* species)	High	High	Favourable	Maintain	No change
Subtidal coarse sediment	High	Moderate	Favourable	Maintain	No change
Subtidal mixed sediments	High	High	Favourable	Maintain	No change
Maerl beds	High	High	Unfavourable	Recover	No change

Table 7 contains a summary of Natural England's pre-consultation assessment results for Black seabream (*Spondyliosoma cantharus*) (nesting) within the Purbeck Coast new site option

Feature name	Principle 1: Ecological significance	Principle 2: Persistence	Principle 3: Site size and delineation	Principle 4: Appropriateness of management	Advice on the General Management Approach (GMA)	Rationale where the advised GMA has changed since the pre-consultation advice
Black seabream (*Spondyliosoma cantharus*) (nesting)	High	High	High	Moderate	Recover	Principle 3 updated from Moderate to High due to the inclusion of the Tanville Ledges nesting. Anchored nets and lines is the only triggering activity and relates to recreational angling from boats in the site, some of which target black bream and some of which use anchors in the site.

6 Highly Mobile Species new site – Berwick to St Mary's

6.1 Purpose of site

This proposal was submitted by RSPB for the purpose of adding breeding and non-breeding common eider *Somateria mollisima* as new features of the existing Coquet to St Mary's MCZ. The conservation aim of the proposal for both breeding and non-breeding common eider would be to provide a critical seaward maintenance and foraging extension surrounding the breeding colony at Coquet Island SSSI. The site would cover areas on which common eider are ecologically dependent, in this case for 'active behaviours' such as foraging, preening, bathing and displaying.

Common eider is not considered to be a migratory species during the breeding season, and is not listed on Annex 1 of the Birds Directive. Accordingly, during the breeding season it would not be eligible for consideration as an SPA feature, and there are no existing SPAs for this species in this season. Breeding common eider are not notified features of any protected areas at sea and will not be considered as features of marine Special Protection Areas (SPAs), and this site would likely be of ecological significance to the local common eider population by providing connectivity between breeding and wintering populations of common eider on Coquet Island and various feeding grounds. There is currently no network for protection of breeding or non-breeding common eider at all in the marine environment.

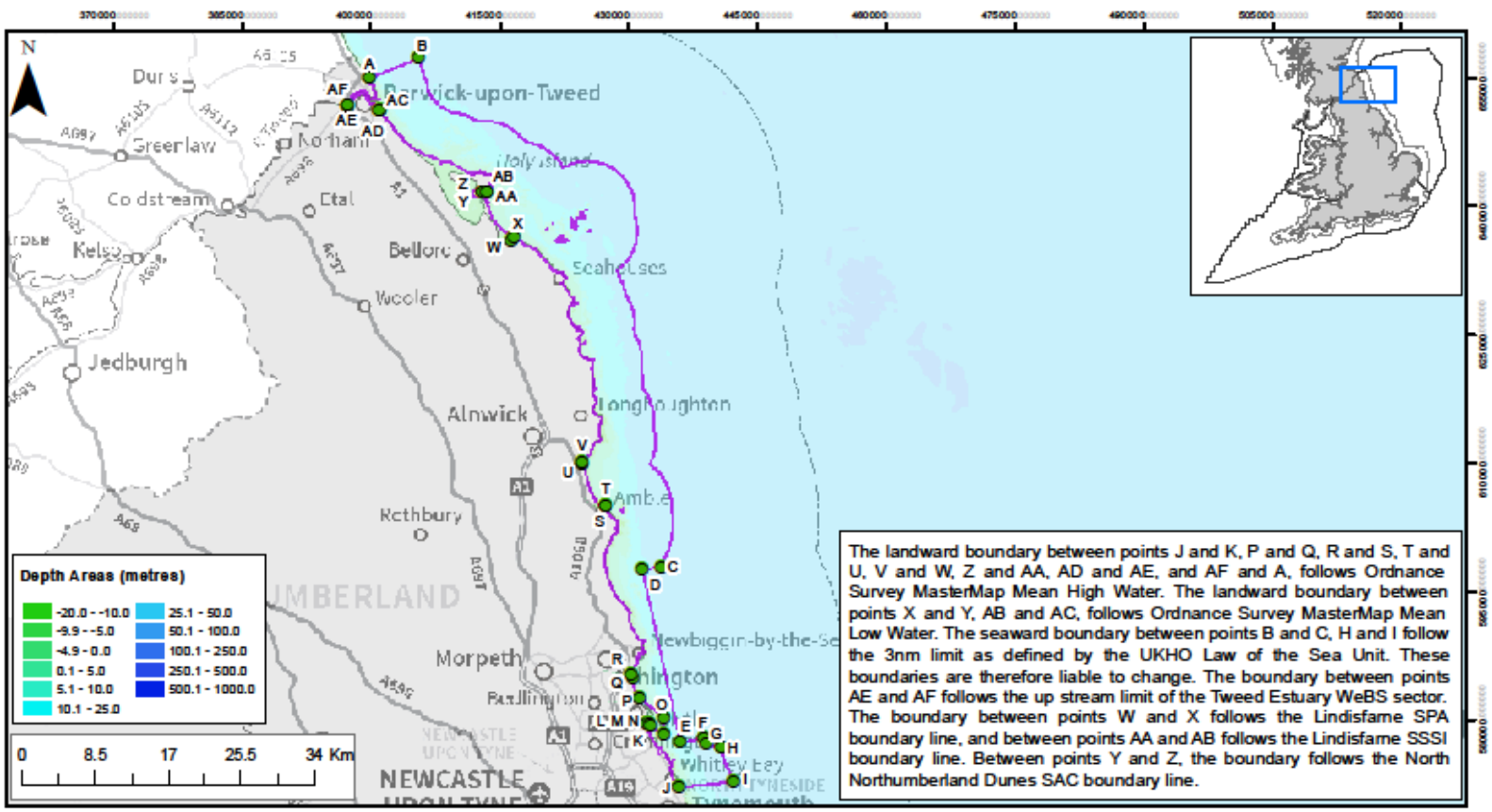
6.2 Site description and boundary notes

The third part proposal was to add Common eider as an additional feature to the existing Coquet Island MCZ. In Natural England's initial review of this third party proposal, we noted that the area seemed to have a good population of common eider, but that the wider area also seemed to be equally important for this species. So an MCZ covering a larger stretch of the Northumberland coastline seemed as though it may be more appropriate. Subsequent work by Natural England collated Wetland Bird Survey (WeBS) counts and Non-estuarine Waterbird Survey (NEWS) counts for the whole of the Northumberland coast and this highlighted the continuous distribution of common eider (at least in the non-breeding season) all the way up to the Scottish border. On the basis of this Natural England suggested an alternative potential boundary for this MCZ which would extend the existing MCZ all the way to the Scottish border. Defra were made aware of this alternative and asked Natural England to progress the evidence base in regard to both the original MCZ and this suggested alternative larger pMCZ with a northern extension (referred to as 'Coquet to Berwick' for the purpose of that assessment). It was later agreed with Defra that an entirely new mobile species pMCZ would be more appropriate; called Berwick to St. Mary's, rather than an extension to the current MCZ; Coquet to St. Mary's.

6.3 Site image

Image 5 Common eider *Somateria mollisima* © Natural England/Allan Drewitt (Please note this photograph is provided as an example of the mobile species feature only and was not taken within the site)

6.4 Boundary map



Berwick to St. Mary's rMCZ Boundary

- Boundary Points
- Recommended MCZ
- 12nM Territorial Seas Limit
- Regional MCZ project area
- Land

Point	Lat	Long	Point	Lat	Long	Point	Lat	Long
A	55° 47' 14.974" N	2° 0' 14.774" W	L	55° 6' 36.465" N	1° 29' 37.867" W	W	55° 37' 6.285" N	1° 44' 33.476" W
B	55° 48' 31.716" N	1° 54' 50.679" W	M	55° 6' 30.244" N	1° 29' 32.148" W	X	55° 37' 13.378" N	1° 44' 12.483" W
C	55° 16' 25.000" N	1° 28' 14.397" W	N	55° 6' 0.348" N	1° 28' 6.099" W	Y	55° 40' 5.088" N	1° 47' 38.691" W
D	55° 16' 21.614" N	1° 30' 19.389" W	O	55° 5' 56.754" N	1° 28' 5.290" W	Z	55° 40' 6.070" N	1° 47' 40.514" W
E	55° 5' 25.433" N	1° 26' 16.455" W	P	55° 5' 16.567" N	1° 30' 37.009" W	AA	55° 40' 6.740" N	1° 47' 15.018" W
F	55° 5' 44.243" N	1° 23' 39.473" W	Q	55° 5' 26.997" N	1° 31' 29.000" W	AB	55° 40' 4.264" N	1° 47' 14.883" W
G	55° 5' 21.620" N	1° 23' 27.991" W	R	55° 5' 45.660" N	1° 31' 30.150" W	AC	55° 45' 17.052" N	1° 59' 5.672" W
H	55° 5' 6.617" N	1° 21' 43.958" W	S	55° 20' 20.317" N	1° 34' 14.911" W	AD	55° 45' 14.377" N	1° 59' 12.572" W
I	55° 2' 59.109" N	1° 20' 26.439" W	T	55° 20' 23.317" N	1° 34' 13.728" W	AE	55° 45' 30.236" N	2° 2' 38.252" W
J	55° 2' 39.178" N	1° 26' 22.263" W	U	55° 23' 3.917" N	1° 36' 49.560" W	AF	55° 45' 35.390" N	2° 2' 41.474" W
K	55° 6' 36.552" N	1° 29' 54.248" W	V	55° 23' 9.032" N	1° 36' 51.347" W			

Figure 9 Berwick to St Mary's new site option boundary

6.5 Results

All assessment results are listed in **Annex 3: Results tables**. For descriptions and introductions to the results tables please see Section 3 of the **Advice overview document**

Table 3 contains a summary of Natural England's post-consultation assessment results for the Berwick to St Mary's new site option.

Feature name	Principle 1: Ecological significance	Principle 2: Persistence	Principle 3: Site size and delineation	Principle 4: Appropriateness of management	Advice on the General Management Approach (GMA)	Rationale where the advised GMA has changed since the pre-consultation advice
Common eider	High	High	High	Moderate	Recover	No change

7 Highly Mobile Species new site – Southbourne Rough

7.1 Purpose of site

This site aims to protect Black seabream *Spondyliosoma cantharus*, their nests and suitable nesting habitat (shallow mixed and coarse sediments over near horizontal bedrock) during the nesting period between April and early July. Evidence suggests that black bream show some site fidelity and nesting bream are specifically targeted by recreational and commercial fisheries, which contributes to the suitability of an MCZ for nesting black bream (Dapling *et al.* 2016; Southern IFCA 2016a).

7.2 Site description and boundary notes

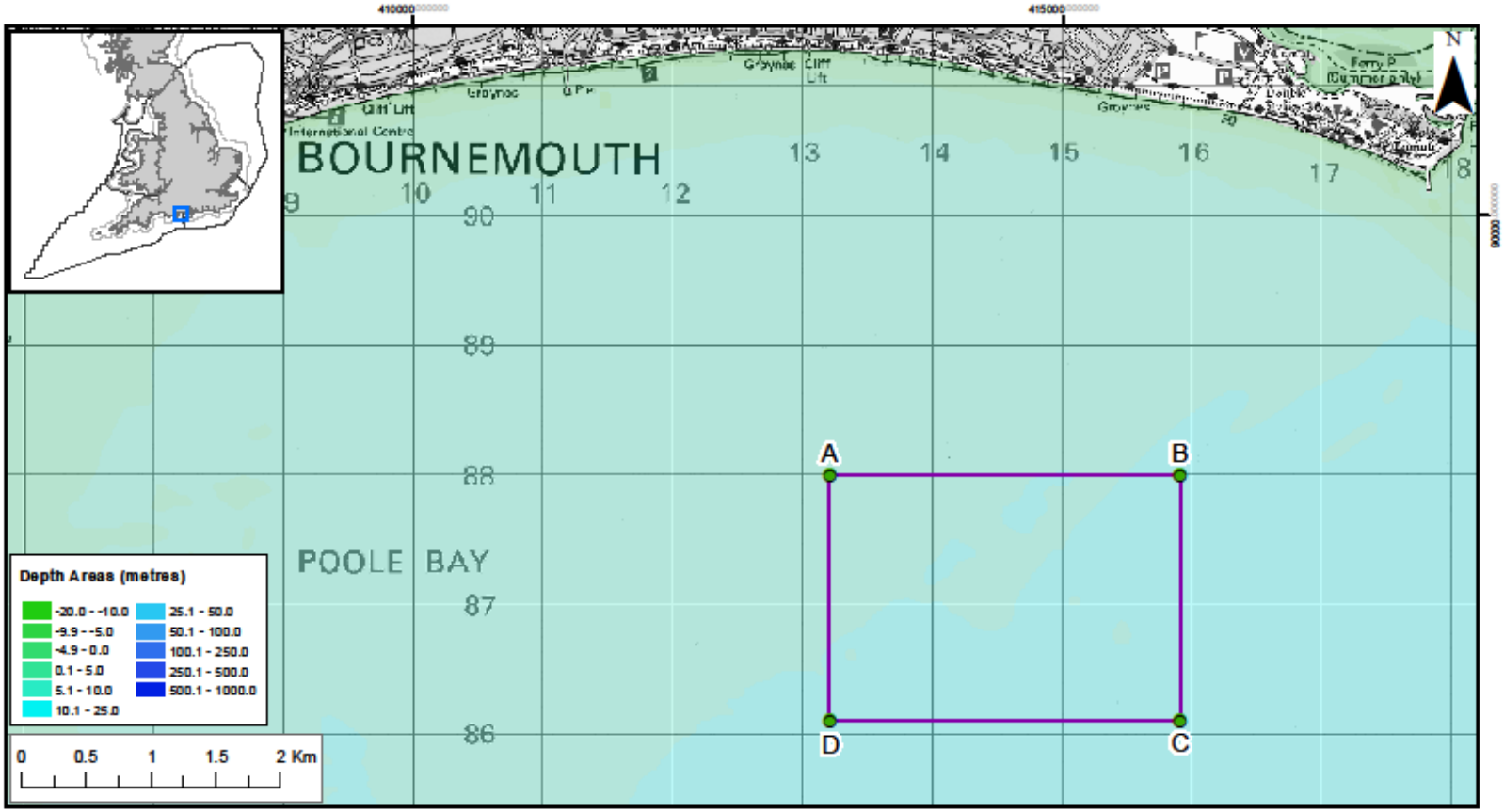
This proposal was submitted by Dorset Wildlife Trust with the aim of protecting new locations in Dorset known for nesting black bream and is one of three sites proposed in Dorset. Nesting sites have been recorded off West Sussex, Isle of Wight and Dorset and currently only one site, Kingmere MCZ, is designated to protect this feature. Unlike most other finfish that visit British waters to breed, the black bream exhibit highly selective 'nesting behaviour' (Pawson 1995). The physical requirements for the nesting sites are quite specific; near horizontal bedrock with a thin layer of sediment. The overlying sediment is cleared away by the male leaving a circular patch of clean bedrock on which the eggs are laid (Collins & Mallinson 2012). The males remain at the nest site guarding the nests, until the eggs hatch and likely return to the same site to nest each year.

The mating season has been reported to occur between April and June (Lythgoe & Lythgoe 1991). However, recent monitoring carried out by Doggett & Openshaw (2015) as part of the black bream project found that in 2015 while nesting finished in June (and the bream disappeared from some nesting sites for a short period) they returned in late June and early July (22nd June – 2nd July 2015) and over a 10-12 day period re-built nests, laid eggs and successfully guarded and hatched eggs. Secondary spawning peaks identified above are supported by studies by Gonçalves and Erzini (2000).

7.3 Site image

Image 6 Black bream *Spondyliosoma cantharus* © Matt Doggett (Please note this photograph is provided as an example of the mobile species feature only and was not taken within the site)

7.4 Boundary map



Southbourne Rough rMCZ Boundary

- Recommended MCZ
- Regional MCZ project area
- rMCZ boundary co-ordinates
- 6nM Limit
- 12nM Territorial Seas Limit
- Land

Point	Lat	Long
A	50° 41' 29.407" N	1° 48' 52.163" W
B	50° 41' 29.165" N	1° 46' 34.557" W
C	50° 40' 27.656" N	1° 46' 34.849" W
D	50° 40' 27.897" N	1° 48' 52.405" W

Figure 10 Southbourne Rough new site option boundary

7.5 Results

All assessment results are listed in **Annex 3: Results tables**. For descriptions and introductions to the results tables please see Section 3 of the **Advice overview document.**

Table 9 contains a summary of Natural England's post-consultation assessment results for the Southbourne Rough new site option.

Feature name	Principle 1: Ecological significance	Principle 2: Persistence	Principle 3: Site size and delineation	Principle 4: Appropriateness of management	Advice on the General Management Approach (GMA)	Rationale where the advised GMA has changed since the pre-consultation advice
Black seabream (*Spondylisoma cantharus*) (nesting)	Moderate	High	Moderate	Moderate	Recover	No change

8 Bibliography

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OSPAR Commission (2006). *Guidance on developing an ecologically coherent network of OSPAR marine protected areas*. No. 2006-03. http://jncc.defra.gov.uk/pdf/06-03e_Guidance%20ecol%20coherence%20MPA%20network.pdf

Appendix 1 Overview of the contribution to the MPA network of inshore and offshore site options being considered as potential MCZs in 2017

Overview of the contribution to the MPA network of inshore and offshore site options being considered as potential MCZs in 2017

February 2017

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Acknowledgements

Emma Novak, Hannah Carr, Hugh Wright and Jon Davies (JNCC) and Heidi Pardoe, Tom Barnfield, Ross Bullimore (Natural England)

1 Summary

The present paper provides an overview of how inshore and offshore New Site Options identified by Natural England and JNCC could address remaining shortfalls in the MPA network in Secretary of State waters (see JNCC 2016). JNCC and Natural England have been able to identify 12 New Site Options based on available data. These New Site Options, alongside the remaining site recommendations from the regional MCZ projects, provide Defra with the opportunity to select a Third Tranche of potential MCZs to complete the MPA network in Secretary of State waters. The paper describes the current shortfalls together with the potential site options available for each region.

2 Introduction

2.1 Purpose of this advice

In summer 2016, JNCC completed an analysis of Defra's progress towards achieving an ecologically coherent MPA network in Secretary of State waters (JNCC 2016). Defra indicated the MPA network should achieve the targets advised by JNCC and Natural England in the Ecological Network Guidance (ENG) (Natural England and JNCC 2010). The analysis revealed a shortfall in the protection of several features in four out of five Charting Progress (CP2) regions[2] that overlap with Secretary of State (SoS) waters; where the analysis concluded a habitat or species is not considered to be adequately protected within the existing MPA network in the region. Some features were still considered as a shortfall after considering the potential contribution from remaining Regional Project recommended MCZs (rMCZs); these shortfalls are summarised in Table 1. To mitigate the shortfalls, JNCC and Natural England developed new offshore and inshore options respectively. These options provide additional contributions towards meeting the shortfall in features that could be considered by Defra alongside the rMCZs that are also under consideration in Tranche 3. Initial Areas of Search (AoS) to meet shortfalls were discussed with stakeholders for both offshore and inshore sites separately and developed into New Site Options.

The purpose of this paper is to provide an overview, by region, of the inshore and offshore New Site Options that have been developed by Natural England and JNCC and the contribution that these could potentially make towards meeting the targets set out for the MPA network in Secretary of State waters. The paper was developed to clearly summarise the current options that could contribute towards the shortfalls that were identified in the JNCC network assessment (JNCC 2016), to be considered by Defra alongside JNCC and Natural England's formal Tranche 3 pre-consultation advice.

[2] No feature shortfalls were identified within the Northern North Sea region and therefore no New Site options have been proposed for this region.

Table 1 The remaining gaps for Broad-scale habitats, Habitat Features of Conservation Importance (FOCI) and Species FOCI in the MPA network, after considering the potential contribution from remaining recommended MCZs from the Regional MCZ Projects.

CP2 Region	Remaining shortfalls in the MPA network		
	Broad-scale habitats	**Habitats FOCI**	**Species FOCI**
Southern North Sea		Sheltered muddy gravels	Native oyster (*Ostrea edulis*)
Eastern Channel	Subtidal coarse sediment Subtidal sand Subtidal mud Subtidal mixed sediments	Maerl beds	
Western Channel & Celtic Sea	Subtidal coarse sediment Deep-sea bed		Native oyster (*Ostrea edulis*)
Irish Sea	Subtidal coarse sediment		

The following sections provide a region by region overview of the remaining gaps for Broad-scale habitats, Habitat Features of Conservation Importance (FOCI) and Species FOCI in the MPA network, after considering the potential contribution from remaining recommended MCZs from the Regional MCZ Projects. Each section provides a regional overview map, and a high level overview of the residual gaps listed in Table 1 and New Site Options identified by JNCC and Natural England. This is then followed by a table setting out the detail around the gap for each feature, which network criteria it relates to and what the size of the gap is. A separate table then lists both New Site Options and Regional Project rMCZs that could contribute to addressing the gaps. It should be noted however that many of the other listed features for these sites could also be contributing to shortfalls in the existing MPA network (or may do so depending on decisions over other Tranche 3 rMCZs/MCZs). JNCC and Natural England's advice on 'data sufficiency' should be referred to for further information about these features, along with JNCC's pivot tool.

3 Overview of sites by region

3.1 Southern North Sea

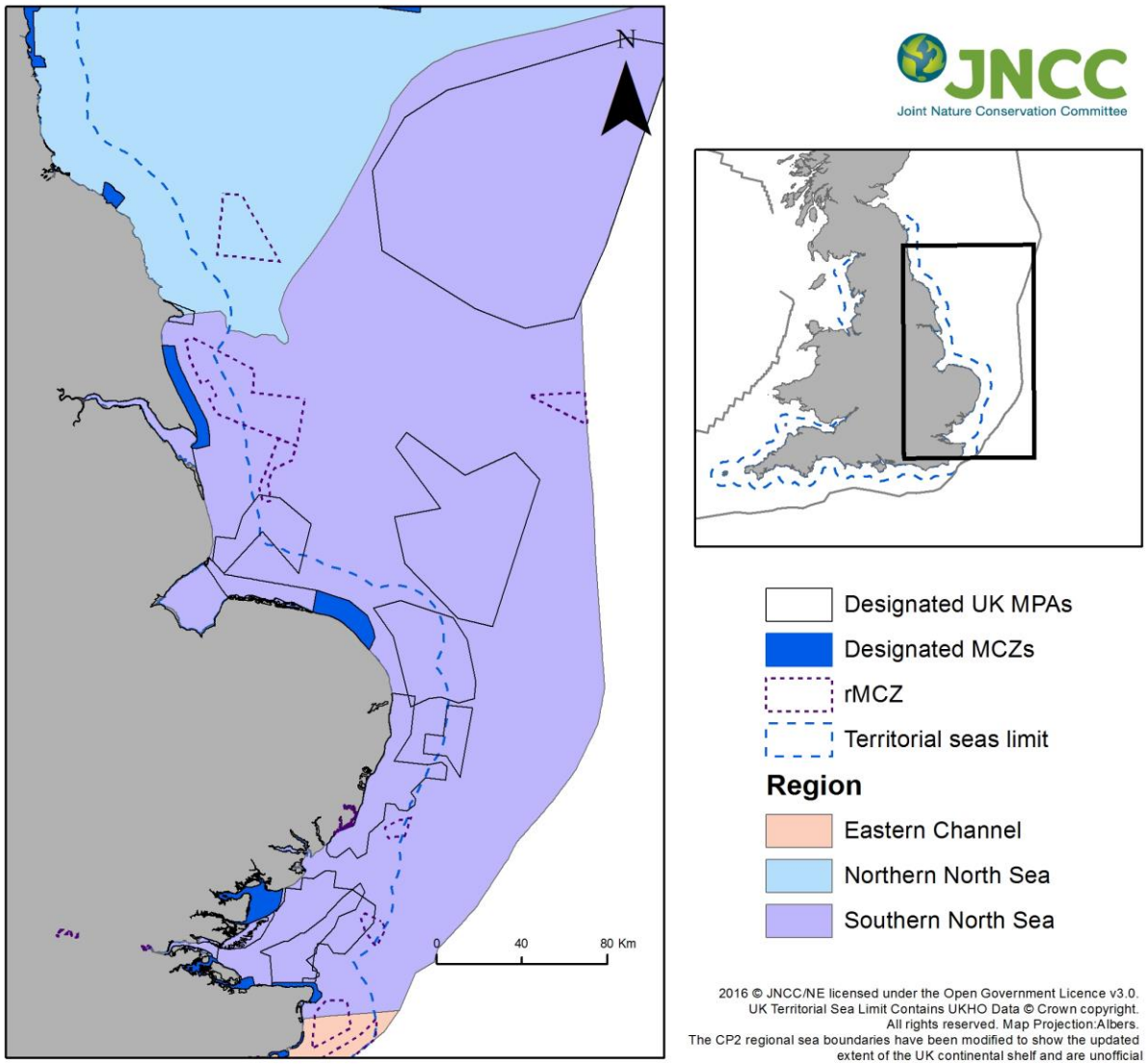

Figure 1 Overview map of MCZs, rMCZs and New Site Options in the Southern North Sea biogeographic region.

All broad-scale habitat features are adequately represented within the Southern North Sea region however a shortfall was identified for Sheltered muddy gravels and Native oyster (*Ostrea edulis*) FOCI (Table 2). During the initial stage of development of AoS, Natural England determined that the **only** suitable option for further protecting Sheltered muddy gravels in the region was the area previously proposed as the Stour and Orwell Estuaries rMCZ i.e. it was only possible to identify 1 further replicate and not 2. Natural England also advised Defra that the site could have provided the additional replicate for Native oyster (*Ostrea edulis*). Based on the best available evidence, Natural England has also been unable to identify any alternative or additional new site options for Native oyster. Defra did not request further advice on this site option as it had previously been decided that the rMCZ was not suitable for designation.

Table 2 Southern North Sea region: Overview of the Features of Conservation Importance (FOCI) for which there is considered a shortfall in protection.

FOCI	Minimum Target in the ENG	Current number of replicates protected within existing MPAs	Number of replicates with potential Tranche Three rMCZs/MCZs also included	Additional number of replicates required to meet ENG target
Sheltered muddy gravels	3 replicates	0	1	2
Native oyster (*Ostrea edulis*)	3 replicates	1	2	1

Table 3 Southern North Sea region: All potential site options (rMCZs from the regional MCZ projects – note no New Site Options) that could contribute to mitigating the shortfalls set out in Table 2, noting the other features associated with each option.

Site options	Potential network contribution of shortfall features		Other features[3]
	Sheltered muddy gravels	Native oyster (*Ostrea edulis*)	
Regional Project recommended MCZs (*note the criteria contributions of each rMCZ/MCZ are part of the 'Potential total number of replicates' presented in Table 2*)			
Alde Ore Estuary (Inshore)	1 replicate		Estuarine rocky habitats, Smelt (*Osmerus eperlanus*), Orfordness (Subtidal geological feature)
Cromer Shoal Chalk Beds (Inshore)		1 replicate	

[3] Does not include features for which we have no confidence in their presence and extent.

3.2 Eastern Channel

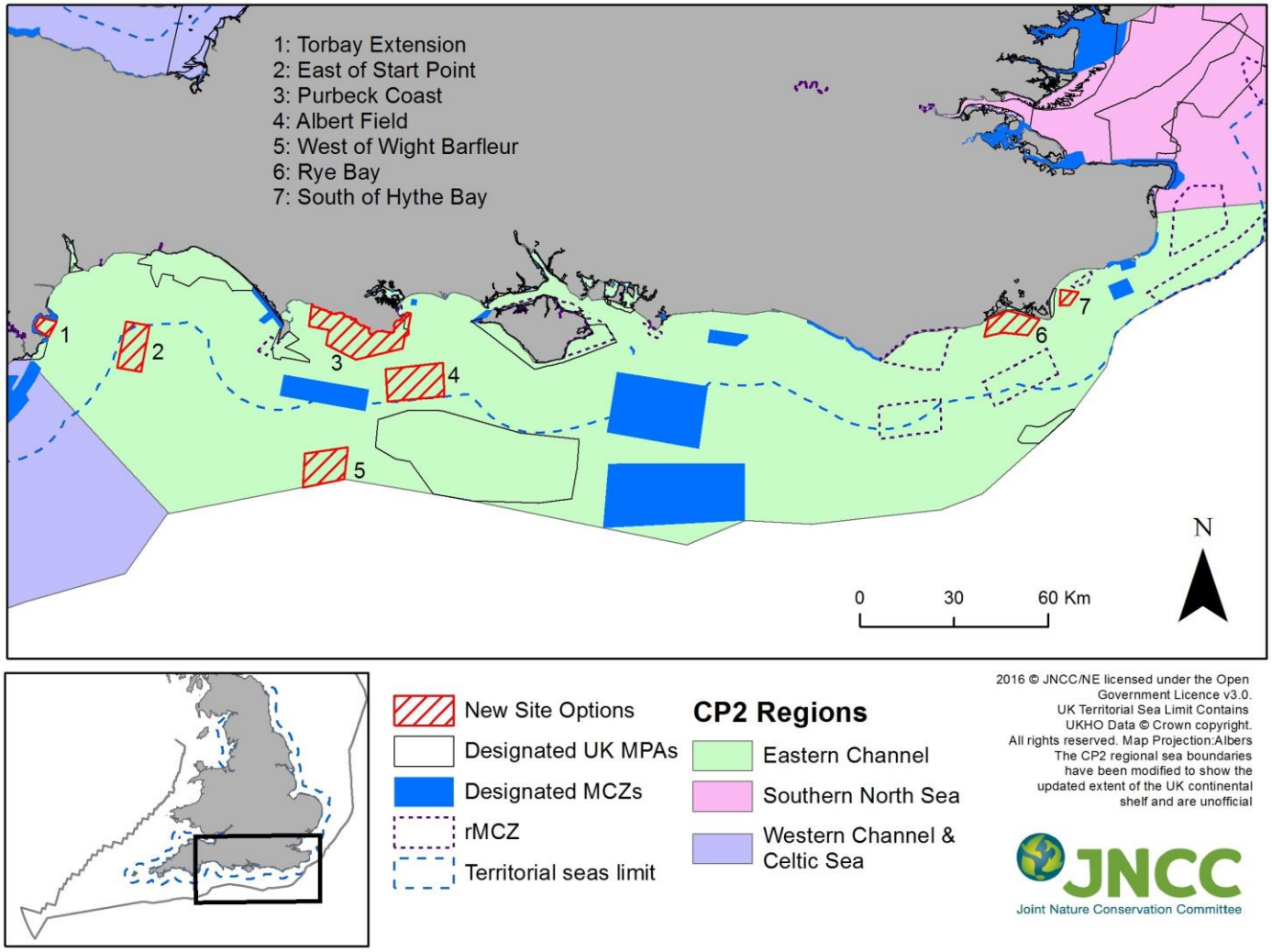

Figure 3 An overview of the distribution of designated MPAs (SACs, SPAs and MCZs), rMCZs and New Site Options in the Eastern Channel biogeographic region.

JNCC's network analysis (2016) identified shortfalls in the Eastern Channel region for the protection of the broad-scale habitats Subtidal coarse sediment, Subtidal sand, Subtidal mud and Subtidal mixed sediments, and the replication of Maerl beds Feature of Conservation Interest (FOCI)[4]. Table 4 provides an overview of the shortfalls for the broad-scale habitat features in the region and Table 5 for the shortfall in FOCI. Two offshore New Site Options have been developed by JNCC and five inshore options by Natural England to address these gaps. The offshore options are West of Wight Barfleur and East of Start Point, and the inshore options are Albert Field, Purbeck Coast, Rye Bay, Torbay Extension and South of Hythe Bay. These options would contribute as follows:

- West of Wight Barfleur was identified to contribute towards the shortfall in Subtidal mixed sediments but could also contribute to subtidal coarse sediment;

[4] Subsequent to this advice being provided to Defra in February 2017, JNCC advised that once fisheries measures are implemented within the Wight-Barfleaur SAC (designated for Annex I Reef) a substantial area of subtidal course sediment would also be afforded protection incidentally. This will encompass an area of approximately 445km^2 and if Defra are content to consider the feature protected in this site by the virtue of the management planned, it would make a large contribution to the protection of this feature in the region and contribute to the remaining shortfall in the MPA network.

- East of Start Point & Rye Bay for Subtidal sand;
- Albert Field for Subtidal coarse and Subtidal mixed sediments;
- Purbeck Coast for Subtidal coarse sediment, Subtidal mixed sediments and Maerl beds; and,
- Torbay Extension and South of Hythe Bay for Subtidal mud

Table 4 Eastern Channel region: Overview of the broad-scale habitat features for which there is considered a shortfall in protection. All values are rounded to the nearest integer to reflect residual uncertainty in the underlying spatial data.

Habitat	Minimum Target in the ENG	Current area protected within existing MPAs	Potential total area with Tranche Three rMCZs/MCZs also included	Additional area required to meet ENG target
Subtidal coarse sediment	17% (~2,115 km^2)	~9% (~1067 km^2)	~14% (~1742 km^2)	~3% (~373 km^2)
Subtidal sand	15% (~422 km^2)	~4% (~98 km^2)	13% (~367 km^2)	2% (~55 km^2)
Subtidal mud	15% (~81 km^2)	~2% (~11 km^2)	5% (~26 km^2)	10% (~55 km^2)
Subtidal mixed sediments	16% (~540 km^2)	~9% (~300 km^2)	~14% (~458 km^2)	~2% (~82 km^2)

Table 5 Eastern Channel region: Overview of the Features of Conservation Importance (FOCI) for which there is considered a shortfall in protection.

FOCI	Minimum Target in the ENG	Current number of replicates protected within existing MPAs	Potential total number of replicates with potential Tranche Three rMCZs/MCZs also included	Additional number of replicates required to meet ENG target
Maerl Beds	3 replicates	0	1	2[5]

[5] Purbeck Coast inshore new site option has been proposed to provide one of the two replicates needed to address this shortfall (see Table 6). Based on our best available evidence, Natural England and JNCC have not been able to identify any additional new site options for this feature and so although there would only be two options in the region, we would not consider this a true gap if the two Tranche 3 options (Purbeck Coast and Bembridge rMCZ – Table 6) were taken forward.

Table 6 Eastern Channel region: All potential site options (rMCZs from the regional MCZ projects and New Site Options) that could contribute to mitigating the shortfalls set out in Tables 4 and 5, noting the other features associated with each option. All values are rounded to the nearest integer to reflect residual uncertainty in the underlying spatial data.

Site options	Potential network contribution of shortfall features					Other features[6]
	Subtidal coarse sediment	Subtidal sand	Subtidal mud	Subtidal mixed sediments	Maerl beds	
New site options (*note the adequacy criteria contributions of each new site option should be considered in relation to the 'additional area required to meet the ENG target' presented in Table 4* or '*Additional number of replicates required to meet ENG target' presented in Table 5*)						
Albert Field (Inshore)	<1% (~79.5 km^2)			Unknown contribution[7]		
East of Start Point (Offshore)		~4% (~114km^2)				N/A
Purbeck Coast (Inshore)	~1% (~104 km^2)			~3% (~98km^2)	1 replicate	High energy intertidal rock. Moderate energy intertidal rock. Intertidal coarse sediment. Stalked jellyfish (*Haliclystus species*). Peacock's tail (*Padina pavonica*).
Rye Bay (Inshore)		~3% (~92km^2)				N/A
South of Hythe Bay (Inshore)			Unknown contribution[8]			N/A

[6] Does not include features for which we have no confidence in their presence and extent
[7] Only point data are available for this feature and therefore the area cannot be calculated.

[8] Only point data are available for this feature and therefore the area cannot be calculated.

Site options	Potential network contribution of shortfall features					Other features[6]
	Subtidal coarse sediment	Subtidal sand	Subtidal mud	Subtidal mixed sediments	Maerl beds	
Torbay Extension (Inshore)			~4% (~24 km^2)			N/A
West of Wight Barfleur (Offshore)	<1% (~55 km^2)			~3% (~82km^2)		N/A
Regional Project recommended MCZs (*note the adequacy criteria contributions of each rMCZ/MCZ are part of the 'Potential total area' calculations presented in Table 4 or 'Potential total number of replicates' presented in Table 5*)						
Beachy Head East (Inshore)	1% (~125 km^2)	~2% (~48 km^2)				High energy intertidal rock. Intertidal coarse sediment. Intertidal mixed sediments. High/Moderate energy circalittoral rock. Infralittoral rock and thin mixed sediment. Infralittoral rock and thin sandy sediment. Blue Mussel beds. Littoral chalk communities. Peat and clay exposures. Ross worm (*Sabellaria spinulosa*) reefs. Subtidal chalk. Infralittoral rock and thin mixed sediment. Infralittoral rock and thin sandy sediment. Native oyster (*Ostrea edulis*). Short snouted seahorse (*Hippocampus hippocampus*).
Bembridge[9] (Inshore)	<<1% (~4 km^2)	<<1% (~4 km^2)	1% (~5km^2)	~2% (~61 km^2)	1 replicate	Ross worm (*Sabellaria spinulosa*) reefs. Seagrass beds. Sea-pens and burrowing megafauna communities. Sheltered muddy gravels. Common

[9] Area calculations are based on original (Regional Project recommended) rMCZ boundary

Site options	Potential network contribution of shortfall features					Other features[6]
	Subtidal coarse sediment	Subtidal sand	Subtidal mud	Subtidal mixed sediments	Maerl beds	
						maerl (*Phymatolithon calcareum*). Native oyster (*Ostrea edulis*). Peacock's tail (*Padina pavonica*). Short snouted seahorse (*Hippocampus hippocampus*). Stalked jellyfish (*Haliclystus* species). Stalked jellyfish (*Calvadosia campanulata*). Tentacled lagoon-worm (*Alkmaria romijni*).
East Meridian (Eastern Side) (Offshore)	~2% (~ 193 km^2)					N/A
Goodwin Sands (Inshore)	~1% (~102km2)	~2% (~68 km^2)				Moderate energy circalittoral rock. Moderate energy infralittoral rock. Blue Mussel beds. Ross worm (*Sabellaria spinulosa*) reefs. English Channel outburst flood features.
Hythe Bay (Inshore)			2% (~10 km^2)			N/A
Inner Bank (Offshore)	<1% (~33 km^2)	~4% (~102 km^2)	<1% (~1 km^2)	~2% (~63 km^2)		N/A
Norris to Ryde (Inshore)	<<1% (<1 km^2)	<<1% (~4 km^2)	Unknown contribution[10]	<<1% (~1km^2)		Low energy intertidal rock. Estuarine rocky habitats. Peat and clay exposures. Seagrass beds. Sheltered muddy gravels. Native oyster (*Ostrea edulis*).

[10] Only point data are available for this feature and therefore the area cannot be calculated.

Site options	Potential network contribution of shortfall features					Other features[6]
	Subtidal coarse sediment	Subtidal sand	Subtidal mud	Subtidal mixed sediments	Maerl beds	
						Tentacled lagoon-worm (*Alkmaria romijni*).
Offshore Foreland (Inshore)	~2% (~207 km^2)	~1% (~37 km^2)				High energy circalittoral rock. Moderate energy circalittoral rock. High energy infralittoral rock. English Channel outburst flood features
Selsey Bill and the Hounds (Inshore)		<<1% (~2 km^2)		<1% (~6km^2)		High energy infralittoral rock. Moderate energy infralittoral rock. Low energy infralittoral rock. Moderate energy circalittoral rock. Peat and clay exposures. Infralittoral rock and thin sandy sediment. Short snouted seahorse (*Hippocampus hippocampus*). Bracklesham Bay
South of Portland (Inshore)	<<1% (~3 km^2)	<<1% (< 1 km^2)		<<1% (~8km^2)		High energy circalittoral rock. Moderate energy circalittoral rock. Portland Deep.
Studland Bay (Inshore)	<<1% (<1 km^2)	<<1% (~2km^2)		Unknown contribution		Moderate energy intertidal rock. Intertidal coarse sediment. Intertidal sand and muddy sand. Intertidal mud. Intertidal mixed sediments. Low energy infralittoral rock. Seagrass beds. Sheltered muddy gravels. Long snouted seahorse (*Hippocampus guttulatus*). Short snouted seahorse (*Hippocampus hippocampus*). Native oyster. (*Ostrea edulis*).
Yarmouth to Cowes[11]	<<1% (~5 km^2)		<<1% (<1km^2)	<<1% (< 1km^2)		Moderate energy intertidal rock. Low energy intertidal rock. Intertidal coarse sediment. High

[11] Area calculations are based on original (Regional Project recommended) rMCZ boundary

Site options	Potential network contribution of shortfall features					Other features[6]
	Subtidal coarse sediment	Subtidal sand	Subtidal mud	Subtidal mixed sediments	Maerl beds	
(Inshore)						energy infralittoral rock. Moderate energy infralittoral rock. High energy circalittoral rock. Moderate energy circalittoral rock. Subtidal biogenic reefs. Intertidal underboulder communities. Littoral chalk communities. Peat and clay exposures. Sheltered muddy gravels. Subtidal chalk. Estuarine rocky habitats. Fragile sponge and anthozoan communities on subtidal rocky habitats. Native oyster beds (*Ostrea edulis).* Native oyster (*Ostrea edulis*). Lagoon sand shrimp (*Gammarus insensibilis)*. Bouldner Cliff geological features

3.3 Western Channel and Celtic Sea

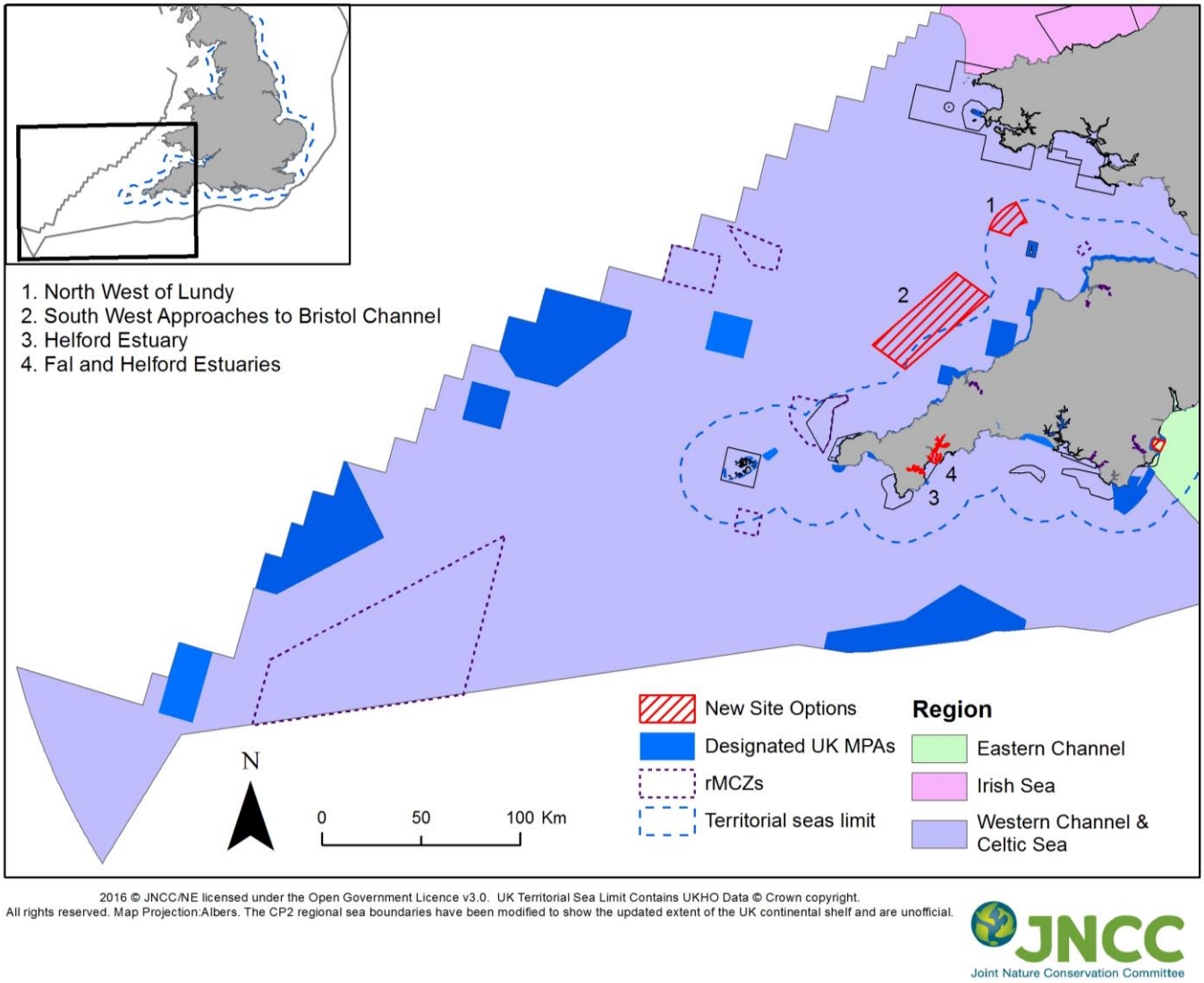

Figure 3 An overview of the distribution of designated MPAs (SACs, SPAs and MCZs), rMCZs and New Site Options in the Western Channel and Celtic Sea biogeographic region.

JNCC's network analysis (2016) identified shortfalls in the Western Channel and Celtic sea region in the protection of the broad-scale habitats Subtidal coarse sediment and Deep-sea bed[12], and for the replication of Native oyster (*Ostrea edulis*) Feature of Conservation Importance (FOCI). Table 7 provides an overview of the percentage area shortfalls for the broad-scale habitat features in the region and Table 8 for the shortfall in the FOCI. One offshore and three inshore New Site Options have been developed by JNCC and Natural England. The offshore option is South West Approaches to Bristol Channel, and the inshore options are North West of Lundy, Helford Estuary and Fal and Helford Estuaries. South West Approaches to Bristol Channel and North West of Lundy will contribute towards the shortfall in Subtidal coarse sediment in the region whilst Helford Estuary and Fal and Helford Estuaries are options for addressing the shortfall for the replication of Native oyster.

[12] JNCC will be providing separate advice on the feature Deep-sea bed and so no further information on the shortfall is provided in this document.

Table 7 Western Channel and Celtic Sea region: Overview of the broad-scale habitat features for which there is considered a shortfall in protection in the Secretary of State waters section of the Western Channel and Celtic Sea region. All values are rounded to the nearest integer to reflect residual uncertainty in the underlying spatial data.

Habitat	Minimum Target in the ENG	Current area protected within existing MPAs	Area with potential Tranche Three rMCZs/MCZs also included	Additional area required to meet the ENG target
Subtidal coarse sediment	17% (~6024 km^2)	~7% (~2501 km^2)	~14% (~4,803 km^2)	~3% (~1221 km^2)

Table 8 Western Channel and Celtic Sea region: Overview of the Features of Conservation Importance (FOCI) for which there is considered a shortfall in protection.

FOCI	Minimum Target in the ENG	Current number of replicates protected within existing MPAs	Number of replicates with potential Tranche Three rMCZs/MCZs also included	Additional number of replicates required to meet ENG target
Native oyster (*Ostrea edulis*)	3 replicates	2	2	1

Table 9 Western Channel and Celtic Sea region: All potential site options (rMCZs from the regional MCZ projects and New Site Options) that could contribute to mitigating the shortfalls set out in Tables 7 and 8, noting the other features associated with each option. All values are rounded to the nearest integer to reflect residual uncertainty in the underlying spatial data.

Site options	**Potential network contribution of shortfall features**		**Other features**[13]
	Subtidal coarse sediment	**Native oyster** (*Ostrea edulis*)	
New site options (*note the adequacy criteria contributions of each new site option should be considered in relation to the 'additional area required to meet the ENG target' presented in Table 7 or 'Additional number of replicates required to meet ENG target' presented in Table 8*)			
Helford Estuary (Inshore)		1 replicate	N/A
Fal and Helford Estuaries (Inshore)			N/A
North West of Lundy (Inshore)	~1% (~173 km^2)		N/A
South West Approaches to Bristol Channel (Offshore)	~3% (~1105km^2)		Moderate energy circalittoral rock. Subtidal sand.
Regional Project recommended MCZs (*note the adequacy criteria contributions of each rMCZ/MCZ are part of the 'Potential total area' calculations presented in Table 7 or 'Potential total number of replicates' presented in Table 8*)			
Cape Bank (Offshore)	~1% (~333km^2)		Moderate energy circalittoral rock. Spiny lobster (*Palinurus elephas*).
Isles of Scilly Sites – Bristows to the	<< 1% (~14km^2)		Moderate energy circalittoral rock.

[13] Does not include features for which we have no confidence in their presence and extent

Site options	**Potential network contribution of shortfall features**		**Other features**[13]
	Subtidal coarse sediment	**Native oyster** (*Ostrea edulis*)	
Stones MCZ			
Morte Platform	<< 1% (~20km^2)		High energy circalittoral rock. Moderate energy circalittoral rock.
North-East of Haig Fras	<< 1% (~57km^2)		Subtidal sand. Subtidal mud.
South of Celtic Deep	<< 1% (~144km^2)		Moderate energy circalittoral rock. Subtidal sand. Subtidal mixed sediments.
South of the Isles of Scilly	<< 1% (~42km^2)		Subtidal sand. Subtidal mixed sediments. Subtidal coarse sediment/Subtidal mixed sediments habitat mosaic. Fan mussel (*Atrina fragilis*).
South-West Deeps (East)	~5 % (~1693km^2)		Subtidal sand. Deep-sea bed.

3.4 Irish Sea

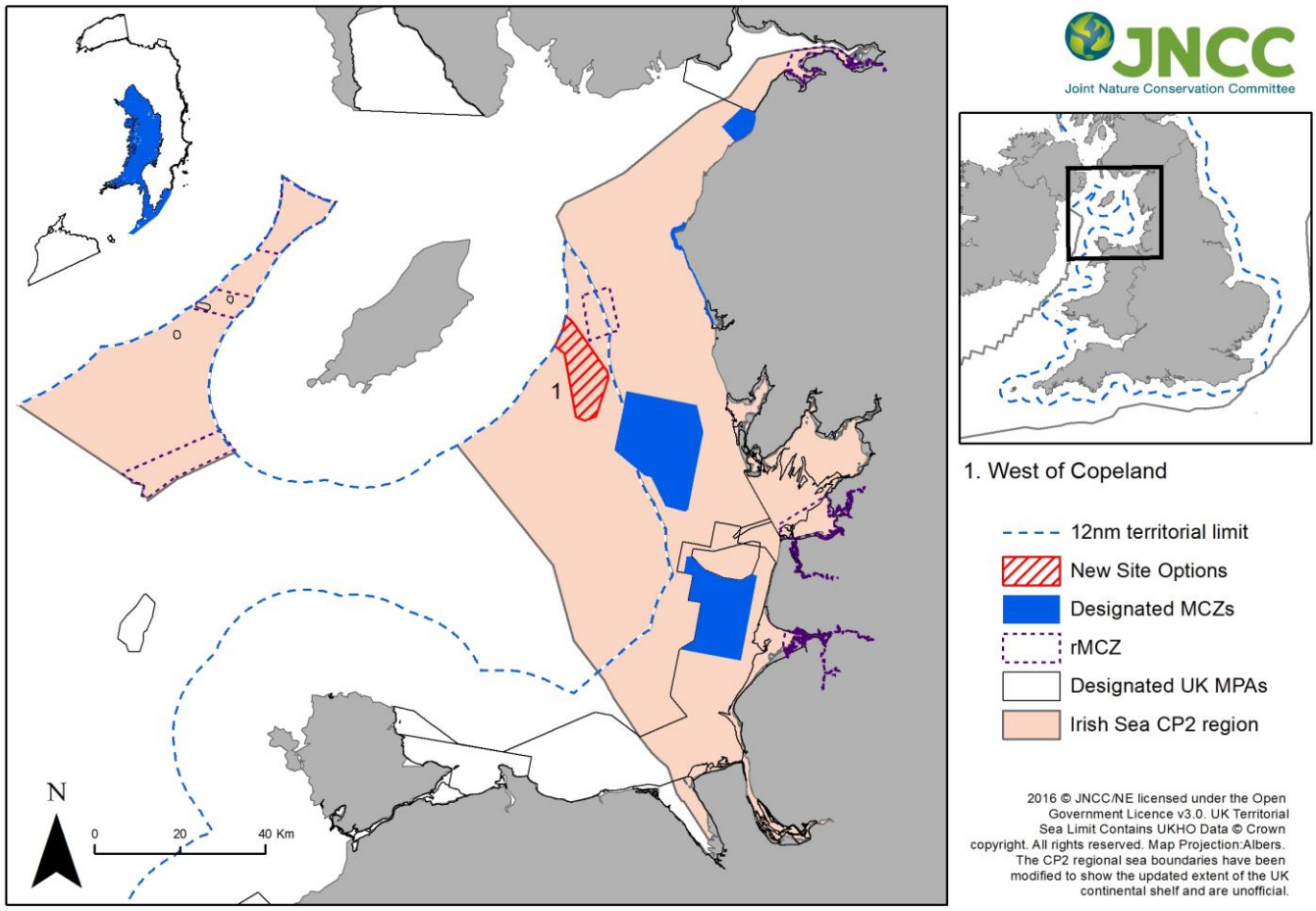

Figure 4 An overview of the distribution of designated MPAs (SACs, SPAs and MCZs), rMCZs and New Site Options in the Secretary of State waters part of the Irish Sea biogeographic region

JNCC's network analysis (2016) identified a shortfall in the protection of Subtidal coarse sediment in the Irish Sea region; Table 10 provides an overview of the shortfalls. One offshore New Site Option has been developed by JNCC to address this shortfall. The West of Copeland New Site Option could contribute ~10% of the Subtidal coarse sediment protected in the region. No inshore New Site Options have been proposed for this region.

Table 10 Irish Sea region: Overview of the broad-scale habitat features for which there is considered a shortfall in protection in the Secretary of State waters part of the Irish Sea region. All values are rounded to the nearest integer to reflect residual uncertainty in the underlying spatial data.

Habitat	Minimum Target in the ENG	Current area protected within existing MPAs	Area with potential Tranche Three rMCZs/MCZs also included	Additional area required to meet ENG target
Subtidal coarse sediment	17% (~124km^2)	~6% (~40km^2)	~7% (~48km^2)	~10% (~76km^2)

Table 11 Irish Sea region: All potential site options (rMCZs from the regional MCZ projects and New Site Options) that could contribute to mitigating the shortfalls set out in Table 10, noting the other features associated with each option. All values are rounded to the nearest integer to reflect residual uncertainty in the underlying spatial data.

Site options	**Potential network contribution of shortfall features** **Subtidal coarse sediment**	**Other features**[14]
New site options (*note the adequacy criteria contributions of each new site option should be considered in relation to the 'additional area required to meet the ENG target' presented in Table 10)*		
West of Copeland (Offshore)	~10% (~73km^2)	Subtidal sand. Subtidal mud. Subtidal mixed sediments.
Regional Project recommended MCZs (*note the adequacy criteria contributions of each rMCZ/MCZ are part of the 'Potential total area' calculations presented in Table 10*)		
South Rigg (Offshore)	~1% (~8km^2) .	Moderate energy circalittoral rock. Subtidal sand. Subtidal mud. Subtidal mixed sediments. Sea-pen and burrowing megafauna communities

4 Bibliography

JNCC (2016). *Assessing progress towards an ecologically coherent MPA network in Secretary of State Waters in 2016*. http://jncc.defra.gov.uk/page-7119

NATURAL ENGLAND AND JNCC (2010). *The Marine Conservation Zone Project: Ecological Network Guidance.* Sheffield and Peterborough, UK: Natural England and JNCC.

[14] Does not include features for which we have no confidence in their presence and extent