



**JNCC's advice on offshore  
Marine Conservation Zones proposed  
for designation in 2013**

**August 2013**

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## Purpose of the Document

In this report the Joint Nature Conservation Committee (**JNCC**) provides a scientific assessment of six *offshore* proposed Marine Conservation Zones (**pMCZs**) that were chosen by the UK Government's Department for Environment Food & Rural Affairs (**Defra**) for possible designation in a first tranche of Marine Conservation Zones (**MCZs**) in 2013 (subsequently referred to as 'Tranche One offshore pMCZs').

The assessments were undertaken with the guidance of published Technical Protocols<sup>1</sup> used in *JNCC and Natural England's advice to Defra on recommended Marine Conservation Zones*, published in July 2012<sup>2</sup> (and subsequently amended in December 2012<sup>3</sup>). The assessments in this report, completed in mid-2013, specifically focus on the Tranche One offshore pMCZs. They were completed following the close of the 2012/2013 Defra public consultation '*Marine Conservation Zones: Consultation on proposals for designation in 2013*'<sup>4</sup>. They encompass all of the new data that has been sourced since our last pMCZ advice package in July 2012.

Thirty one sites were put forward in Tranche One, and six of those are found in the offshore environment (beyond 12 nautical miles) and fall under JNCC's auspices for advice and reporting. The remaining sites are inshore, and are under Natural England's direction. These six offshore sites are the focus of this report:

**East of Haig Fras pMCZ** – Site Code: FS07

**North of Celtic Deep pMCZ** - Site Code: ISCZ05

**North East of Farnes Deep pMCZ** (formerly Rock Unique pMCZ) - Site Code: NG15

**South West Deeps (West) pMCZ** - Site Code: FS02

**Swallow Sand pMCZ** - Site Code: NG16

**The Canyons pMCZ** - Site Code: FS01

## Acknowledgements

The following JNCC staff were involved in the production of this report: Alice Cornthwaite, Alice Ramsay, Amy Ridgeway, Andrew Eggett, Hannah Carr, iLaria Marengo, Laura Cornick, Nicola Church, Nikki Taylor, Ollie Payne, and Sarah Soffe. Review and quality assurance of the report were carried out by Jon Davies, John Goold and Neil Ellis. The members of JNCC's non-executive Marine Protected Areas Sub-Group provided an independent technical review the text. JNCC acknowledge the input of all these people in the production of this report.

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<sup>1</sup> MCZ Technical Protocols: <http://jncc.defra.gov.uk/page-5999>

<sup>2</sup> MCZ 2012 Advice: <http://jncc.defra.gov.uk/page-6229>

<sup>3</sup> MCZ 2012 Amendments Report: <http://jncc.defra.gov.uk/page-6229>

<sup>4</sup> Defra MCZ 2012-13 Consultation Document:

<https://www.gov.uk/government/consultations/marine-conservation-zones-consultation-on-proposals-for-designation-in-2013>

## Executive Summary

Designating Marine Protected Areas (**MPAs**) is an important measure in helping to conserve the marine environment. The UK supports international agreements and European obligations to protect the marine environment, which include designating MPAs. Marine Conservation Zones (**MCZs**) are a new form of MPA created under the Marine and Coastal Access Act 2009 (**MCAA**) to conserve marine animals, plants and their habitats, together with areas of seabed important for their geomorphological and geological features. By conserving these species and habitats, MCZs will join other types of MPA to create an ecologically coherent network in the UK's seas, and contribute to wider European and global initiatives. Identifying and protecting special marine areas helps society utilise the goods and services provided by our seas in a more sustainable manner.

The Joint Nature Conservation Committee (**JNCC**) and Natural England (**NE**) set up a project in 2008 to give sea-users (stakeholders) the opportunity to suggest MCZs, known as *recommended* MCZs (**rMCZs**) to UK Government. The MCZ Project was divided into four regional areas that covered the inshore waters around England and the offshore waters around England, Wales and Northern Ireland (known as the 'Defra marine area'). The regional MCZ projects recommended 127 MCZs to JNCC and NE in September 2011. The governments in Wales, Scotland and Northern Ireland also have projects to identify MPAs in their waters<sup>5</sup>.

The UK Government's Department for Environment Food & Rural Affairs (**Defra**), responsible for MCZs, asked JNCC and NE to review the 127 rMCZs to evaluate how they compared with scientific standards and comply with Government requirements. JNCC and NE provided their advice on the rMCZs from the regional MCZ projects in July 2012<sup>6</sup>, with some amendments published in December 2012<sup>7</sup>.

Defra reviewed all the information on these rMCZs and then undertook a public consultation from December 2012 to March 2013<sup>8</sup>. Defra noted they were to take forward 31 sites for proposed designation in 2013, six of which fall in UK offshore waters: East of Haig Fras pMCZ; North of Celtic Deep pMCZ; North East of Farnes Deep pMCZ; South-West Deep (West) pMCZ; Swallow Sand pMCZ and The Canyons pMCZ. These six offshore sites are called *proposed* MCZs (**pMCZs**) and are referred to as Tranche One in this present report. Recognising the need for a solid evidence base to support the formal designation of these MCZs, Defra, JNCC and NE have pursued field survey campaigns and data collation exercises since 2011.

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<sup>5</sup> More information available from: <http://jncc.defra.gov.uk/page-4524>

<sup>6</sup> MCZ 2012 Advice: <http://jncc.defra.gov.uk/page-6229>

<sup>7</sup> MCZ 2012 Amendments Report: <http://jncc.defra.gov.uk/page-6229>

<sup>8</sup> Defra MCZ 2012-13 Consultation:

<https://www.gov.uk/government/consultations/marine-conservation-zones-consultation-on-proposals-for-designation-in-2013>

Defra requested for JNCC and NE to update their 2012 advice in April 2013, using the best-available evidence following the public consultation and field survey/data collation work completed since the publication of the 2012 assessments. These re-assessments will contribute to Defra's advice to Ministers on which sites should be designated in 2013. Defra asked that our evidence-based scientific advice should provide:

- An assessment of the available scientific evidence supporting the presence of Features in the MCZs proposed for designation in 2013;
- An assessment of the proposed Conservation Objectives for each Feature, including an indication of our certainty in the objective being correct;
- An assessment of risk of damage from human activities for the MCZs.

JNCC completed these assessments in April-May 2013 for the six offshore pMCZs and the present report sets out the results and our subsequent advice to Defra. It details our assessments in confidence of Feature presence and Feature extent; Feature vulnerability; site risk; confidence in condition and our degree of certainty in the proposed conservation objectives for the Features of the pMCZs.

New data have become available since the recommendation of MCZs by the four regional projects in 2011, through the public consultation in 2013, and Defra data gathering contracts<sup>9</sup>. These data were combined with the existing data to create an updated evidence base for the MCZs. JNCC used all available data to update the 2012 assessments for the Features in each of the six offshore sites, following the relevant Technical Protocols<sup>10</sup>.

A JNCC MCZ Evidence Quality Assurance (**QA**) Group reviewed the assessment process, and applied judgement where required to ensure decisions on confidence assessments in Feature presence and Feature extent were consistent and appropriate, using a clearly described rationale. In this report, JNCC has advised on all new habitat data and has assessed each Feature within the six offshore sites to provide a clear overview of the site using the evidence available in April 2013.

JNCC assessed 28 Features within the six offshore pMCZs. We have **High** confidence in the presence of 23 Features, Moderate confidence for 1 Feature, **Low** confidence for 3 Features and **No** confidence for 1 Feature. We have **High** confidence in extent of 15 Features, **Moderate** confidence in 6 Features, **Low** confidence in 6 Features and **No** confidence in 1 Feature. There are 9 instances where confidence in Feature presence is higher than confidence in Feature extent.

JNCC reviewed the proposed Conservation Objectives for 25 of the 28 Features. We concluded that 14 Features require a **Recover** objective, and another 11 Features require a **Maintain** objective. Of the

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<sup>9</sup> MB0120: <http://randd.defra.gov.uk/>

<sup>10</sup> MCZ Technical Protocols: <http://jncc.defra.gov.uk/page-5999>

remaining 3 Features that were not assessed, a recent survey of North East of Farnes Deep pMCZ did not record any A4.3 **Low-energy circalittoral rock** originally recommended in 2011. Our 2012 advice did not assess A5.1 **Subtidal coarse sediment** and A5.2 **Subtidal sand** in The Canyons pMCZ, due to the insignificant extent of the Features and therefore we were unable to assign an effective Conservation Objective<sup>11</sup>.

Following our analyses, JNCC also advises that the previous recommendations for habitat Features of Conservation Importance (FOCI) **Subtidal sands and gravels** should not go forward separately for designation in 2013<sup>12</sup>. The definition of this habitat FOCI is very broad and effectively contains the Broad-Scale Habitats A5.1 **Subtidal coarse sediment** and A5.2 **Subtidal sand** that are proposed for designation. Protecting the Broad-Scale Habitat will therefore protect the habitat FOCI by default.

When compiling our advice, we have endeavoured to comply with the Government Chief Scientific Adviser's guidelines for preparing scientific advice<sup>13</sup>, and the recommendations of the Graham-Bryce report that reviewed the evidence process for selecting marine Special Areas of Conservation (SACs)<sup>14</sup>. Our advice has been comprehensively checked and quality assured through our internal systems, and reviewed by our independent non-executive MPA sub-group. Our assessments followed published peer-reviewed protocols and used the best evidence available at the time. Overall, we are content that our advice is a quality-assured product, fit for purpose, to assist the UK Government to make decisions about the designation of MCZs.

In summary, new data have become available for the assessments in the present advice since our advice in 2012, and, of those Features originally assessed, the confidence in the Feature presence has increased in 12 out of 23 Features, and the confidence in Feature extent has increased in 7 out of the 23 Features. JNCC further notes that sufficient evidence is now available for these six offshore pMCZs to support the presence of Features not originally proposed for designation in 2013. JNCC recommends that Defra now considers these Features for designation within these sites.

To conclude, JNCC advises that there is sufficient evidence and information to designate the Features proposed in all six offshore pMCZs in 2013. There is also sufficient information to support the addition of other Features not put forward in 2012 within each pMCZ, in due course.

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<sup>11</sup> For the original rationale, see the 2012 advice, Annex 7, Table222, pages 1184 and 1185: <http://jncc.defra.gov.uk/page-6229>

<sup>12</sup> Subtidal Sands and Gravels guidance: <http://jncc.defra.gov.uk/page-6229>

<sup>13</sup> Guidelines for preparing scientific advice: <http://www.bis.gov.uk/go-science/science-in-government/strategy-and-guidance>

<sup>14</sup> Graham-Bryce Report: <https://www.gov.uk/government/publications/independent-review-of-the-evidence-process-for-selecting-marine-special-areas-of-conservation>

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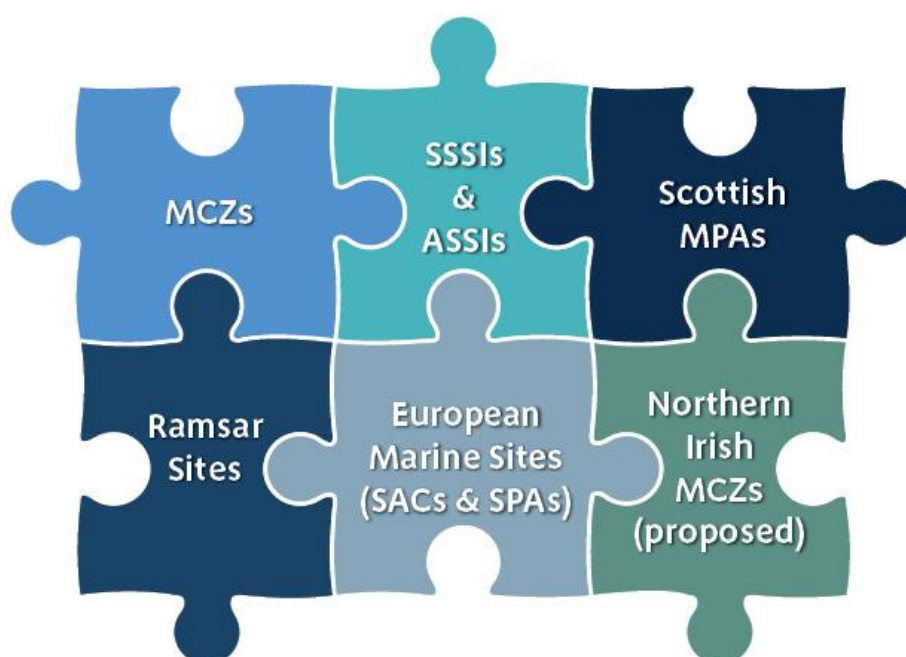
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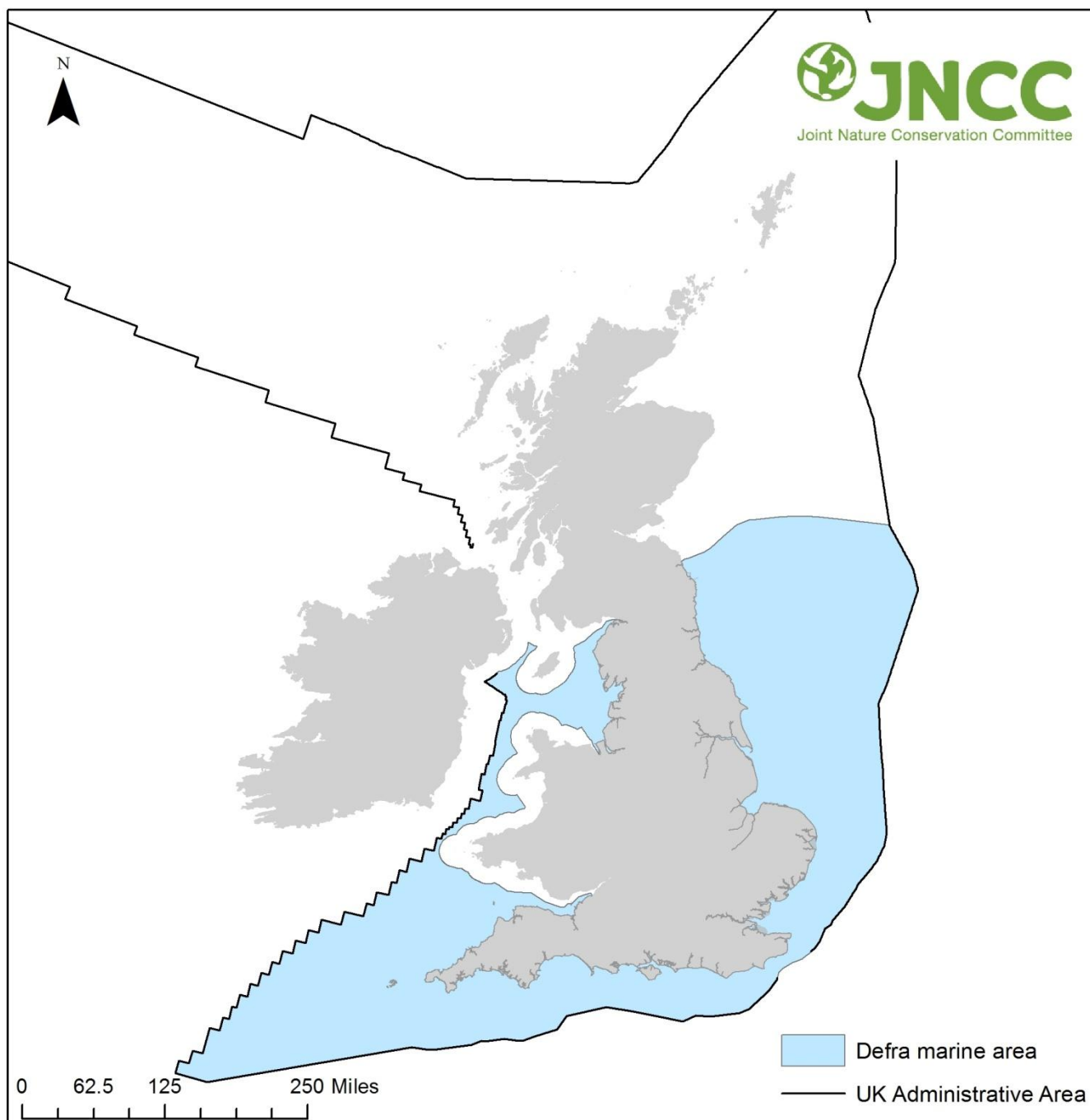
# 1 Introduction

Throughout the world, the designation of Marine Protected Areas (**MPAs**) is increasingly recognised as an important tool to protect the marine environment, helping society to use the goods and services provided by our oceans in a more sustainable manner. The UK supports international agreements and European obligations to protect the marine environment, which include designating MPAs under the relevant European and domestic legislation. In England and Wales, Marine Conservation Zones (**MCZs**) are a form of MPA provided under the Marine and Coastal Access Act 2009 (**MCAA**) to conserve marine animals, plants and their habitats, as well as areas of geological importance. By conserving these species and habitats, MCZs join other types of MPAs, illustrated below in [Figure 1](#), to create an ecologically coherent network in the UK's seas and contribute to wider European and global initiatives.



**Figure 1: Range of MPA Designations in the UK**

The MCZ project encompassed the English and Welsh offshore region, and English inshore waters (the 'Department of Environment, Food & Rural Affairs (**Defra**) Marine Area' in [Figure 2](#)). Under their jurisdictions, the devolved administrations for Scotland and Wales have their own projects in place to identify and designate MPAs in their waters, while Northern Ireland is expected to have a similar project should its proposed Marine Act receive Royal Assent. Once complete, the UK projects are designed to form an ecologically coherent network of MPAs, working together to better manage UK seas for a sustainable future. [Figure 2](#) below illustrates the region covered by the MCZ project.

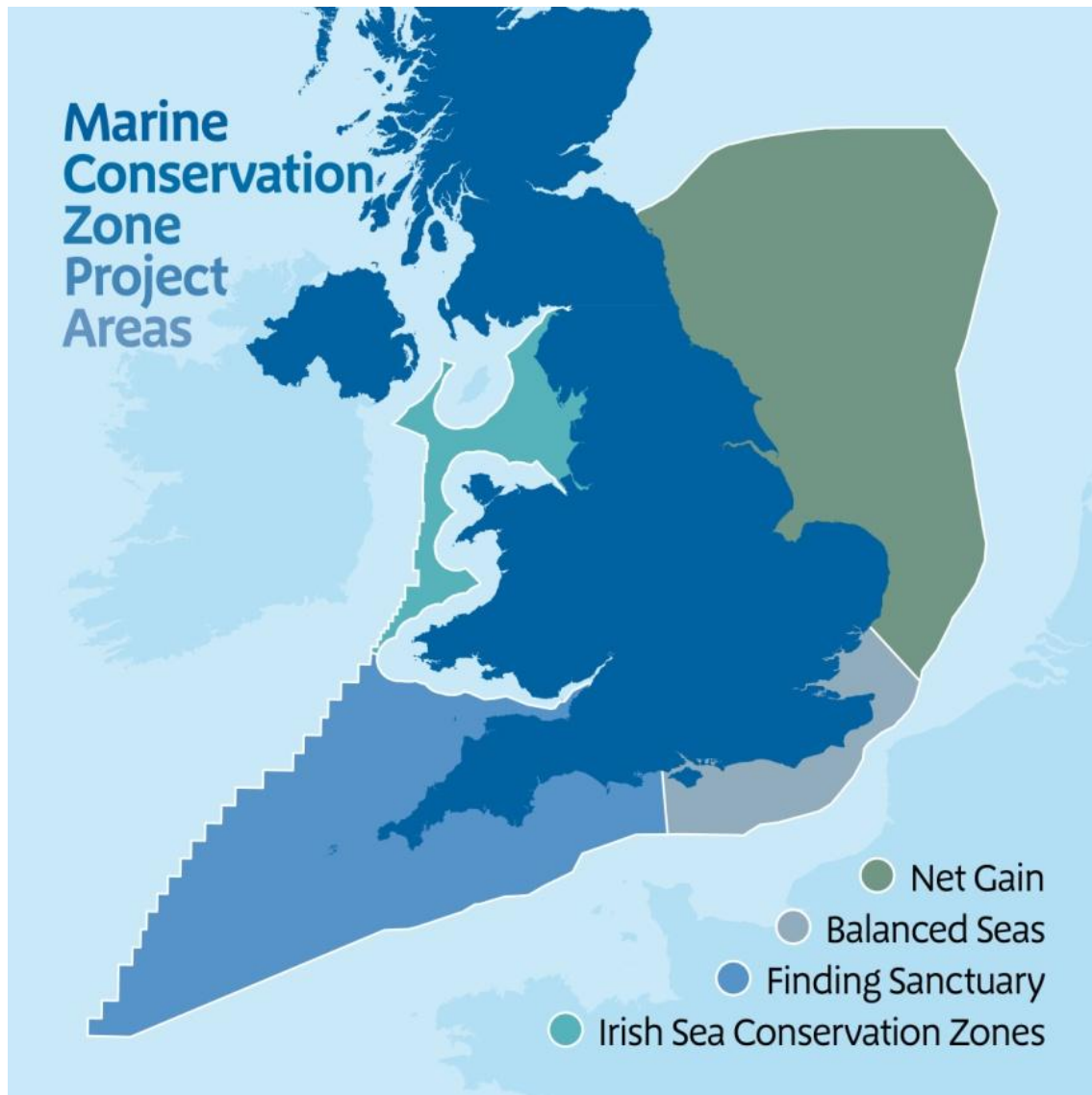


The exact limits of the UK Continental shelf are set out in orders made under section (17) of the Continental shelf Act 1964 (© Crown Copyright). The Continental Shelf Act (Designation of Areas) Consolidation Order 2000. The Continental Shelf Act (Designation of Areas) Order 2001. World Vector Shoreline © US Defence Mapping Agency.  
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**Figure 2: Defra Marine Area**

## 2 The MCZ Selection and Designation Process

The Joint Nature Conservation Committee (JNCC) and Natural England (NE) set up a project in 2008 to give sea-users (stakeholders) operating in the Defra Marine Area (see [Figure 2](#)), the opportunity to recommend potential sites for a new category of MPA called MCZs to UK Government<sup>15</sup>. The Defra Marine Area was divided into four regional units, within which four projects were set up to identify potential MCZs: Net Gain in the north-east, Balanced Seas in south-east, Finding Sanctuary in the south-west and Irish Sea Conservation Zones in the north-west (see [Figure 3](#)).



**Figure 3: MCZ Regional Project extents**

<sup>15</sup> Marine & Coastal Access Act 2009 – legislation creating provision for MCZs:  
<http://www.legislation.gov.uk/ukpga/2009/23/contents>

JNCC and NE published its Ecological Network Guidance (**ENG**)<sup>16</sup> in July 2010 to guide the four regional projects on how to identify and recommend an appropriate suite of MCZs that would most likely meet UK Government requirements for the MCAA<sup>15</sup>. The ENG lists the marine animals, plants and their habitats, and geological/geomorphological entities, collectively known as special 'Features' that should be included within the network.

JNCC and NE also published the Conservation Objective Guidance (**COG**)<sup>17</sup> to help the four regional projects propose draft Conservation Objectives for the Features in their recommended MCZs (**rMCZs**). The regional projects collectively recommended 127 MCZs to the UK Government in September 2011<sup>18</sup> (see [Figure 4](#)). JNCC and NE reviewed these recommendations of their draft Conservation Objectives and provided our advice to Defra in July 2012.

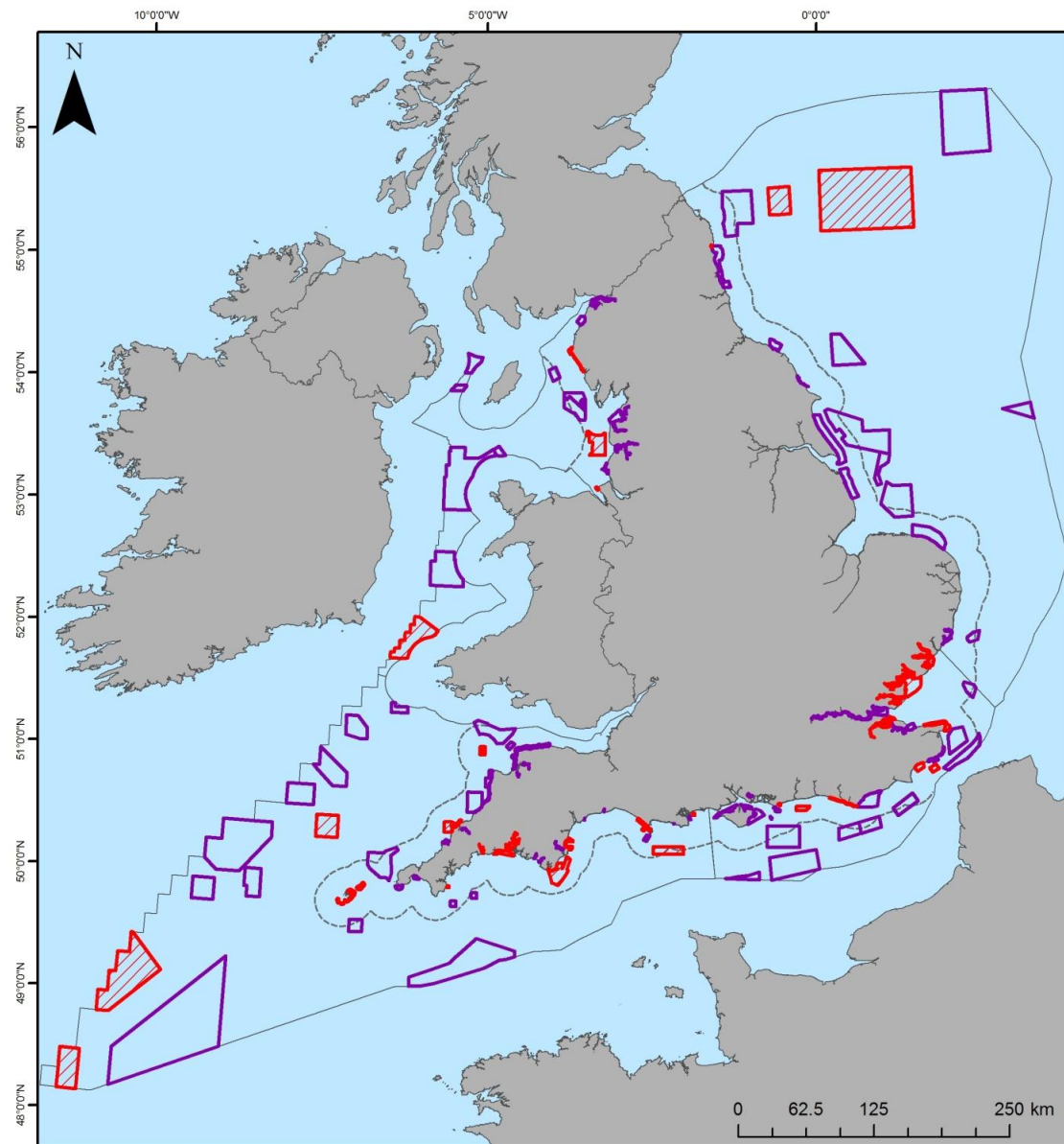
Subsequently, JNCC and NE provided further advice documents to assist the UK Government in its review of the 127 rMCZs ahead of a public consultation in 2012. The original suite of rMCZs covered approximately 15% of the Defra marine area (see [Figure 2](#)), including 65 areas proposed for high levels of protection known as 'Reference Areas'.

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<sup>16</sup> Ecological Network Guidance: <http://jncc.defra.gov.uk/page-4527>

<sup>17</sup> Conservation Objective Guidance: <http://jncc.defra.gov.uk/page-4881>

<sup>18</sup> Regional Projects reports: <http://jncc.defra.gov.uk/page-6230>



### Sites overview

- pMCZs put forward for designation in 2013
- Recommended MCZ
- Regional MCZ project area
- - - 12nM Territorial Seas Limit
- Land



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**Figure 4: The 127 regional project recommended MCZs, showing the 31 sites proposed for designation in 2013**



In December 2012, Defra launched a twelve-week public consultation<sup>19</sup> on all 127 rMCZs, resulting in the proposal of 31 of the sites to be taken forward for designation in 2013. The 31 sites form Tranche One of the MCZ process. The choice of sites put forward in Tranche One was based on the levels of confidence in scientific evidence and the balance between the conservation advantages and the socio-economic costs of designating a site. Defra asked consultees to provide any new information on the 31 pMCZs and their constituent Features that would support or affect their designation.

This report details the revised assessments for the six offshore sites put forward for designation by the UK Government in 2013 since the close of the public consultation in March 2013. The assessments include new data and information collected since JNCC and NE's advice on the rMCZs was published in July 2012<sup>20</sup>, where it has become available, in order to use the best-available evidence in our advice to Defra.

Defra let two contracts to support the MCZ designation process after submission of the recommendations from the regional projects: MB0116<sup>21</sup> and MB0120<sup>22</sup>. MB0116 was an in-depth review of the ecological MCZ evidence led by ABP Marine Environmental Research Ltd (**ABPmer**), designed to build on, and extend, the evidence-specific work of the regional projects to support the designation of MCZs. This work was commissioned following the recommendation from the independent Science Advisory Panel (**SAP**) that the evidence base for MCZs required a further in-depth review of data and information<sup>23</sup>. The report found that the majority of the most-relevant data sources had already been used by the regional projects, and any new data sources not previously used in the 2012 assessment were taken into consideration when updating the 2013 assessment of confidence in the presence and extent of Features.

MB0120<sup>22</sup> was a data-gathering exercise led by the Centre for Environment, Fisheries and Aquaculture Science (**Cefas**), involving the collection of scientifically robust evidence from within a selection of rMCZs. A steering group containing Cefas, Defra, JNCC and NE staff led the decision making process for MB0120.

Reference Areas (*areas where all extraction, deposition or human-derived disturbance is removed*), were not considered for designation in 2013. Defra proposes to review the need for Reference Areas<sup>24</sup>, therefore, any Reference Areas recommended by the regional projects within a Tranche One offshore pMCZ have not been re-assessed in the present report.

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<sup>19</sup> Defra MCZ 2012-13 Consultation:

<https://www.gov.uk/government/consultations/marine-conservation-zones-consultation-on-proposals-for-designation-in-2013>

<sup>20</sup> MCZ 2012 Advice: <http://jncc.defra.gov.uk/page-6229>

<sup>21</sup> MB0116: <http://randd.defra.gov.uk/>

<sup>22</sup> MB0120: <http://randd.defra.gov.uk/>

<sup>23</sup> Scientific Advisory Panel final report: <https://www.gov.uk/government/publications/science-advisory-panel-assessment-of-the-marine-conservation-zone-regional-project-final-recommendations>

<sup>24</sup> Defra MCZ 2012-13 Consultation Document, page 24:

<https://www.gov.uk/government/consultations/marine-conservation-zones-consultation-on-proposals-for-designation-in-2013>



For the offshore pMCZs which are proposed for designation in 2013, Defra requested that JNCC provides new assessments of confidence in Feature presence and Feature extent, Feature condition, and certainty in Conservation Objectives, as well as identifying sites and Features considered to be at risk. Where recent data have been gathered through MB0120<sup>22</sup>, JNCC can provide a greater degree of information about habitats found at some of the six offshore pMCZs, enabling Defra to consider these new Features as part of the designation in 2013, or for designation in subsequent tranches. JNCC has provided the following advice on all habitat Features where new data have indicated their presence within the boundary of an offshore pMCZ, not just those put forward for designation in 2013 or those recommended by the regional projects. JNCC has also provided advice on the presence of species Features of Conservation Importance (**FOCI**)<sup>16</sup> at each of the six offshore pMCZs.

JNCC's advice on each Tranche One offshore pMCZ is delivered in four parts:

- Assessment of confidence in Feature presence and extent;
- Assessment of Feature condition;
- Assessment of certainty in Conservation Objectives; and
- Assessment of risk to the site from potentially damaging activities.

When compiling our advice, JNCC has endeavoured to comply with the Government Chief Scientific Adviser's guidelines for preparing scientific advice<sup>25</sup>, and the recommendations of the Graham-Bryce report<sup>26</sup> that reviewed the evidence process for selecting marine Special Areas of Conservation (**SACs**). Our advice has been quality assured through our internal systems, and reviewed and signed-off by our independent non-executive MPA Sub-Group. Our assessments followed published peer-reviewed protocols and used the best-available evidence. Overall, we are content that our advice is a quality-assured product, fit for purpose, to assist the UK Government to make decisions on the designation of MCZs. A summary of, and links to the key documents produced throughout the MCZ process, is listed in [Annex 1](#).

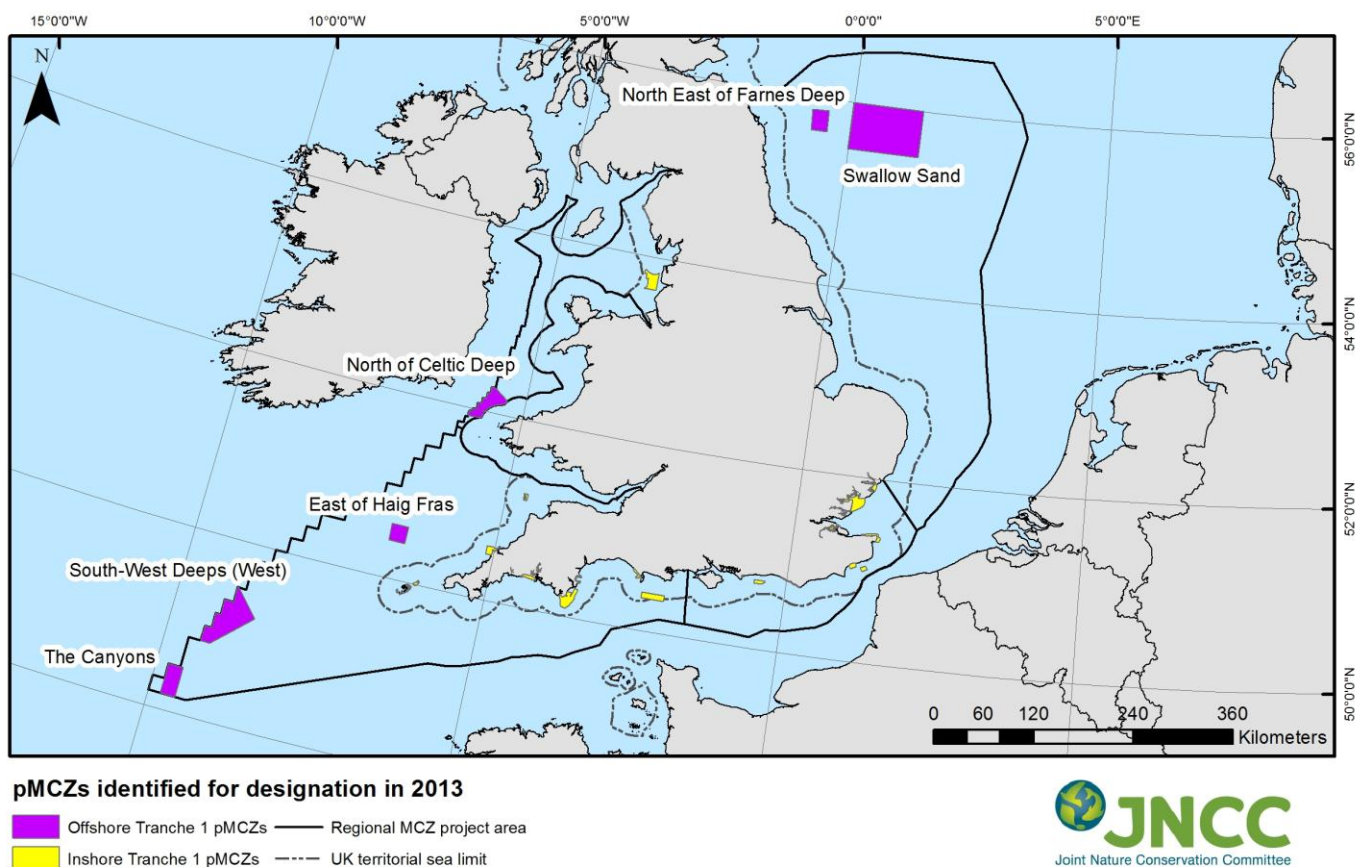
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<sup>25</sup> Guidelines for preparing scientific advice: <http://www.bis.gov.uk/go-science/science-in-government/strategy-and-guidance>

<sup>26</sup> Graham-Bryce Report: <https://www.gov.uk/government/publications/independent-review-of-the-evidence-process-for-selecting-marine-special-areas-of-conservation>

### 3 Offshore Sites Proposed for Designation in 2013

Defra proposes to designate 31 sites in Tranche One in 2013<sup>19</sup>. Of these 31, six sites lie in UK offshore waters and are illustrated below in [Figure 5](#).



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**Figure 5: The six Tranche One offshore proposed MCZs**

## 4 New Data available for 2013 Assessments

JNCC received new data for some of the six Tranche one offshore MCZs since the 2012 assessments' that triggered the need for the revised assessments described in this present report. A summary of the new data that have contributed to the 2013 assessment is presented below (see [Table 1](#)). Note that all data used in the 2012 assessments were used in the 2013 assessments in conjunction with the new data listed below.

**Table 1: New information/data used in the assessments undertaken in 2013**

New Data
Defra contract MB0116 <sup>21</sup>
Defra contract MB0120 <sup>27</sup>
Defra MCZ consultation 2012-13 public responses <sup>28</sup>
Marine Management Organisation ( <b>MMO</b> ) Vessel Monitoring System ( <b>VMS</b> ) data 2007-2010 <sup>29</sup>
The Crown Estates 'All Offshore activity (UK) shapefiles' March 2013 <sup>30</sup>
Oil & Gas UK DEAL database <sup>31</sup>

<sup>27</sup> Specifically new data for East of Haig Fras pMCZ, North of Celtic Deep pMCZ, North East of Farnes Deep pMCZ and Swallow Sand pMCZ

<sup>28</sup> JNCC reviewed data provided in consultation responses that were shared with us by Defra

<sup>29</sup> The 2007–2010 (produced 2011) MMO VMS data was not processed in time for the initial advice in 2012, but has been used for the current assessments.

<sup>30</sup> Available from: <http://www.thecrownestate.co.uk/energy-infrastructure/downloads/maps-and-gis-data/> [Accessed March 2013]

<sup>31</sup> Available from: <http://www.ukdeal.co.uk> [Accessed March 2013]

## 5 Summary of Assessments

JNCC assessed 28 Features within the six offshore pMCZs in 2013:

- East of Haig Fras pMCZ
- North of Celtic Deep pMCZ;
- North East of Farnes Deep pMCZ (formerly Rock Unique pMCZ);
- South-West Deeps (West) pMCZ;
- Swallow Sand pMCZ and
- The Canyons pMCZ.

Our analyses of the 28 Features, including the 5 new Features not present in our 2012 advice, are summarised below in [Table 2](#), but **must be read alongside the full assessments detailed in Section 7 and Annexes 4 and 5** of this report to fully understand the justifications behind the confidence scores. The relevant Technical Protocol<sup>32</sup> provides more information about how our advice is constructed (see [Section 6](#)).

We have **High** confidence in the presence of 23 Features, **Moderate** confidence in the presence of 1 Feature, **Low** confidence in the presence of 3 Features and **No** confidence in the presence of 1 Feature across the six offshore pMCZs. We have **High** confidence in the extent of 15 Features, **Moderate** confidence in the extent of 6 Features, **Low** confidence in the extent of 6 Features and **No** confidence in the extent of 1 Feature. There are 9 instances where confidence in Feature *presence* is higher than confidence in Feature *extent* and 5 instances of new Features not recommended by the regional projects, but now verified within the six sites.

Since our advice in 2012, our confidence in a Feature's presence has increased for 12 out of 23 Features, and our confidence in a Feature's extent has increased for 7 out of the 23 Features. JNCC further notes that sufficient evidence is now available to support designation of 5 Features present in the pMCZs but not originally proposed for designation in 2013. JNCC recommends that Defra now additionally considers those Features for designation.

JNCC reviewed the proposed Conservation Objectives for 25 of the 28 Features. We concluded that 14 Features require a **Recover** objective, and 11 Features require a **Maintain** objective. Of the remaining 3 Features not assessed, a recent survey of North East of Farnes Deep pMCZ did not record any A4.3 **Low-energy circalittoral rock** originally recommended in 2011. Our 2012 advice did not assess A5.1 **Subtidal coarse sediment** and A5.2 **Subtidal sand** in The Canyons pMCZ, due to the insignificant extent of the Features, and therefore we were unable to assign an effective Conservation Objective (see our original

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<sup>32</sup> MCZ Technical Protocols: <http://jncc.defra.gov.uk/page-5999>

advice<sup>33</sup> for further information). No new data have become available in order to change our advice from our 2012 assessment.

The site risk score is an assessment of the risk of damage or deterioration arising from human activities currently occurring and is expressed as a percentage risk (see [Section 6.5](#) for more information). Only one site, The Canyons pMCZ, is considered to be very high risk although South-West Deeps (West) pMCZ has a very high site risk for its ecological Features. All the Features for North East of Farnes Deep pMCZ have a **Maintain** conservation objective proposed and therefore the site risk is considered very low as per Technical Protocol G. East of Haig Fras pMCZ has a high site risk of where two new Features identified for this site in 2013 have caused a reduction in site risk from our 2012 assessment. The ecological Features of Swallow Sand pMCZ present a moderate site risk and North of Celtic Deep pMCZ has a **high** site risk.

JNCC advises that there is sufficient evidence and information to take forward the Features in all six offshore pMCZs proposed for designation in 2013. There is also sufficient information to support the addition of the five newly assessed Features within each pMCZ.

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<sup>33</sup> For the original rationale, see the 2012 advice, Annex 7, Table222, pages 1184 and 1185: <http://jncc.defra.gov.uk/page-6229>  
Produced by JNCC

**Table 2: Site Assessment Summary Table**

The table summarises the outcomes of 2013 re-assessments using any further evidence made available since the 2012 assessments. Scores from the 2012 assessment are noted in blue italic text. Any changes from those scores as a result of the 2013 assessment are noted in the final column. **NB: This table is a summary only and it must be used in conjunction with the full rationale behind each assessment provided in the subsequent narratives.**

Site (code)	Feature	Assessment Results						
		Confidence in presence (MCZ Technical Protocol E) <i>(Previous Assessment)</i>	Confidence in extent (MCZ Technical Protocol E) <i>(Previous Assessment)</i>	Confidence in Feature condition (MCZ Technical Protocol F) <i>(Previous Assessment)</i>	CO advised (MCZ Conservation Objective Guidance) <i>(Previous Assessment)</i>	Certainty in CO (MCZ Technical Protocol I) <i>(Previous Assessment)</i>	Site Risk (MCZ Technical Protocol G) <i>(Previous Assessment)</i>	Changes from July 2012 Advice (or amendments)
East of Haig Fras (FS 07)	A4.2 Moderate energy circalittoral rock	High ( <i>Low</i> )	High ( <i>Low</i> )	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	Less certain in recover <i>(Less certain in recover)</i>	80% <i>(100%)</i>	A5.1/A5.4 Mosaic and A5.3 have been newly identified within the site  Site risk has been reduced from 100%  All original Features, A4.2, A5.1 and A5.2 have increased in both confidence in presence and extent
	A5.1 Subtidal coarse sediment	High ( <i>Mod</i> )	Mod ( <i>Low</i> )	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	Less certain in recover <i>(Less certain in recover)</i>		
	A5.2 Subtidal sand	High ( <i>Mod</i> )	High ( <i>Low</i> )	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	Less certain in recover <i>(Less certain in recover)</i>		
	A5.1/A5.4 Subtidal coarse/mixed sediments mosaic	High (*)	High (*)	Low (*)	Recover (*)	Less certain in recover <i>(*)</i>		
	A5.3 Subtidal mud	High (*)	High (*)	Low (*)	Maintain (*)	Less certain in maintain <i>(*)</i>		
North of Celtic Deep (ISCZ 05)	A4.2 Moderate energy circalittoral rock	Low ( <i>Low</i> )	Low ( <i>Low</i> )	Low ( <i>Low</i> )	Maintain ( <i>Maintain</i> )	Less certain in maintain <i>(Less certain in maintain)</i>	75% <i>(75%)</i>	Confidence in Feature presence has changed from Mod to High for A5.1, A5.2 and HOCl_21  Confidence in Feature extent has changed from Low to Mod for A5.2
	A5.1 Subtidal coarse sediment	High ( <i>Mod</i> )	Mod ( <i>Mod</i> )	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	More certain in recover <i>(More certain in recover)</i>		
	A5.2 Subtidal sand	High ( <i>Mod</i> )	Mod ( <i>Low</i> )	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	More certain in recover <i>(More certain in recover)</i>		
	HOCl_21 Subtidal sands and gravels	High ( <i>Mod</i> )	Mod ( <i>Mod</i> )	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	More certain in recover <i>(More certain in recover)</i>		
North East of Farnes Deep (NG 15)	A4.3 Low energy circalittoral rock	No ( <i>Low</i> )	No ( <i>Low</i> )	N/A ( <i>N/A</i> )	N/A ( <i>N/A</i> )	N/A ( <i>N/A</i> )	0% <i>(0%)</i>	2012 JNCC / Cefas MCZ site verification survey did not identify A4.3 Low energy circalittoral rock as being visible at the surface of the seabed  A5.1, A5.2 and HOCl_21 have been increased from Mod to High confidence in Feature
	A5.1 Subtidal coarse sediment	High ( <i>Mod</i> )	High ( <i>Mod</i> )	Low ( <i>Low</i> )	Maintain ( <i>Maintain</i> )	More certain in maintain <i>(More certain in maintain)</i>		
	A5.2 Subtidal sand	High ( <i>Mod</i> )	High ( <i>Mod</i> )	Low ( <i>Low</i> )	Maintain ( <i>Maintain</i> )	More certain in maintain <i>(More certain in maintain)</i>		
	HOCl_21 Subtidal sands and gravels	High ( <i>Mod</i> )	High ( <i>Mod</i> )	Low ( <i>Low</i> )	Maintain ( <i>Maintain</i> )	More certain in maintain <i>(More certain in maintain)</i>		



Site (code)	Feature	Assessment Results						
		Confidence in presence (MCZ Technical Protocol E) <i>(Previous Assessment)</i>	Confidence in extent (MCZ Technical Protocol E) <i>(Previous Assessment)</i>	Confidence in Feature condition (MCZ Technical Protocol F) <i>(Previous Assessment)</i>	CO advised (MCZ Conservation Objective Guidance) <i>(Previous Assessment)</i>	Certainty in CO (MCZ Technical Protocol I) <i>(Previous Assessment)</i>	Site Risk (MCZ Technical Protocol G) <i>(Previous Assessment)</i>	Changes from July 2012 Advice (or amendments)
North East of Farnes Deep (NG 15)	A5.3 Subtidal mud	High (*)	High (*)	Low (*)	Maintain (*)	More certain in maintain (*)		presence
	A5.4 Subtidal mixed sediments	High (*)	High (*)	Low (*)	Maintain (*)	More certain in maintain (*)		A5.3, A5.4 and HOCl_18 have been newly identified within the site
	HOCl_18 Sea-pens & burrowing megafauna	High (*)	Low (*)	Low (*)	Maintain (*)	More certain in maintain (*)		
South-West Deep (West) (FS 02)	A5.1 Subtidal coarse sediment	High (Mod)	Low (Low)	Low (Low)	Recover (Recover)	More certain in recover (More certain in recover)	75% (75%) Note - 100% if geological feature is removed from the calculation	Confidence in Feature presence has changed from Mod to High for A5.1 and A5.2.
	A5.2 Subtidal sand	High (Mod)	Mod (Mod)	Low (Low)	Recover (Recover)	More certain in recover (More certain in recover)		
	A5.4 Subtidal mixed sediments	Mod (Mod)	Low (Low)	Low (Low)	Recover (Recover)	Less certain in recover (Less certain in recover)		
	Celtic Sea Relict Sandbanks	High (High)	High (High)	High (High)	Maintain (Maintain)	More certain in maintain (More certain in maintain)		
Swallow Sand (NG 16)	A5.1 Subtidal coarse sediment	High (Mod)	Mod (Mod)	Low (Low)	Maintain (Maintain)	Less certain in maintain (Less certain in maintain)	50% (50%) Note - 66% if geological feature is removed from the calculation	A5.1 has changed from Mod confidence in Feature presence, to High
	A5.2 Subtidal sand	High (High)	High (High)	Low (Low)	Recover (Recover)	Less certain in recover (Less certain in recover)		
	HOCl_21 Subtidal sands and gravels	High (High)	High (High)	Low (Low)	Recover (Recover)	Less certain in recover (Less certain in recover)		
	North Sea glacial tunnel valleys (Swallow hole)	High (High)	High (High)	High (High)	Maintain (Maintain)	More certain in maintain (More certain in maintain)		
The Canyons (FS 01)	A5.1 Subtidal coarse sediment	Low (Low)	Low (Low)	Assessment not required, see 2012 advice <sup>33</sup>			100% (100%)	No new data, therefore no change to assessments
	A5.2 Subtidal sand	Low (Low)	Low (Low)					
	A6 Deep-sea bed	High (High)	High (High)	Low (Low)	Recover (Recover)	More certain in recover (More certain in recover)		
	HOCl_2 Cold-water coral reefs	High (High)	High (High)	High (High)	Recover (Recover)	More certain in recover (More certain in recover)		

\*Some Features are additions to the site following recent data collection and information and therefore have no previous score from the 2012 assessment.

CO: Conservation Objective. Mod: Moderate

## 6 Method of Assessment

### 6.1 Assessment of Confidence in Feature Presence and Feature Extent

The Features recommended by the four MCZ regional projects were originally assessed by JNCC and NE in 2012 using MCZ Technical Protocol E<sup>32</sup>. Subsequently, additional information has been collected through the Defra MCZ contract (MB0120<sup>22</sup>) led by Cefas, including the review of ecological evidence supporting the MCZs contract (MB0116<sup>21</sup>) led by ABPMer, and data provided through the public consultation<sup>34</sup>. Consequently, JNCC and NE have completed a further full assessment in 2013 using all of the available data. JNCC's results are provided below and the full assessment can be viewed in [Annex 5](#).

Confidence assessments for the presence and extent of the proposed Features were determined in line with the criteria outlined in Protocol E<sup>32</sup>, particularly by following Tables 2–6 of that protocol. Results were recorded at the level of Feature for each pMCZ. For both Feature presence and Feature extent, the protocol outlines four categories of confidence to be assigned to each Feature: **No**, **Low**, **Moderate** and **High**.

If available data confirmed a 'high' confidence score, and the underlying data confirmed the interpretation of the polygons, the assessment for that Feature was considered complete. If, however, the underlying data did not agree with the habitat interpretation presented in the habitat map, we used the percentage of agreement with the Feature, or the parent Feature, to assign the appropriate assessment score, as directed in Protocol E<sup>32</sup> and accompanying guidance<sup>35</sup>. Note that when assessing datasets or habitats that were particularly complex, we used the same approach as outlined in Section 5.1.3 of the confidence assessment methodology in the 2012 Amendments Report<sup>36</sup>.

The present 2013 assessments were conducted on mapped pMCZ Features and not those where there was only point data confirming their presence at the site. These assessments involved not only the regional MCZ project *recommended* Features, but also considered any other mapped Broad-Scale Habitats and Habitat Features of Conservation Importance (**HOCI**)<sup>16</sup> that were shown to be present within the site, based on modelled habitat distribution from UKSeaMap<sup>37</sup> and any new habitat maps from survey. Such expansion enabled JNCC to provide comprehensive advice to Defra on all habitat features identified within each of the six sites proposed for designation in 2013, where new data indicated their presence.

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<sup>34</sup> JNCC reviewed data provided in consultation responses that were shared with us by Defra

<sup>35</sup> Guidance on aspects of the practical application of the Protocol E for MPA work: <http://jncc.defra.gov.uk/page-5999>

<sup>36</sup> MCZ 2012 Amendments Report: <http://jncc.defra.gov.uk/page-6229>

<sup>37</sup> UKSeaMap: <http://jncc.defra.gov.uk/page-2117>



JNCC has used the best-available evidence to compile a preliminary assessment in our confidence in the presence of those Species FOCI listed in the ENG<sup>16</sup> known to occur within the Tranche One sites. No further data were submitted through the consultation that impacted our confidence assessments.

The MB0116 report<sup>21</sup> noted that the majority of the most-relevant data sources already had been utilised by the regional MCZ projects in their original recommendations. In the cases where the report identified new data sources not available to the 2012 assessment, these data were taken into consideration when updating the assessment of confidence in the presence and extent of Features for the six offshore pMCZs (see [Annex 2](#) for more information on how the findings of MB0116 were considered in the 2013 JNCC advice).

Once the 2013 assessments were completed, they were reviewed and quality assured (**QA**) by the JNCC MCZ Evidence QA Group (See [Annex 3](#) for Terms of Reference). This QA reviewed the consistency of application of Technical Protocol E<sup>32</sup> and its guidance<sup>35</sup>, and verified that the data sources used in the 2013 assessment were appropriate.

**N.B:** JNCC has advised only on subtidal sands and gravel features that were initially recommended (as Features of rMCZs). JNCC previously advised Defra that it should not separately designate the HOCl 'Subtidal sands and gravels'<sup>38</sup>, therefore, no further assessments were completed for this feature in 2013.

## 6.2 Confidence in Feature Condition

MCZ Technical Protocol F<sup>32</sup> sets out the process for assessing confidence in a Features' condition and sets out a series of criteria that that could increase our confidence in the assessment of condition. This protocol should be consulted in conjunction with our present advice to understand our assessment of confidence in the condition of a Feature condition.

The protocol outlines different approaches, depending on whether the Feature's condition was assessed using direct evidence, or by way of the vulnerability assessment process. The HOCl\_2 **Cold-water coral reef** Feature of The Canyons pMCZ is the only Feature in the Tranche One offshore pMCZs where the condition was assessed using direct evidence<sup>20</sup>; all others were assessed using the vulnerability assessment approach.

By default, confidence in Feature condition is **Low** where confidence in Feature extent is low. Similarly, confidence in Feature condition defaults to **Low** when it is derived from a vulnerability assessment, except where additional criteria are satisfied (see MCZ Technical Protocol F for details<sup>32</sup>). Any situations where these criteria are satisfied are highlighted in our advice.

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<sup>38</sup> Subtidal Sands and Gravels guidance: <http://jncc.defra.gov.uk/page-6229>

### 6.3 Advice on a Feature's Conservation Objective

JNCC reviewed the draft Conservation Objectives for Features within Tranche One offshore pMCZs and we provide a view on whether the objectives in JNCC and NE's 2012 Advice to Defra remain valid in light of updated information. Previous sections of this present report have described where data have become available since JNCC's 2012 advice (see [Table 1](#)). Specifically, new data on habitat distribution are available for East of Haig Fras pMCZ and North East of Farnes Deep pMCZ that could affect the 2012 assessments for Conservation Objective advice. These new habitat maps reveal considerably different spatial distribution of Features within the sites than previously thought. Consequently, our 2012 advice to Defra has been reviewed regarding these changes to known habitat distribution, as well as any new information made available that may help establish the condition of the Feature. For new Features, a vulnerability assessment was undertaken which, for completeness, used not only information gathered after the submission of since our 2012 advice, but also the original data which informed the assessments in 2012.

JNCC has examined the responses to Defra's public consultation on the Tranche One pMCZs, MB0116<sup>22</sup> and MB0120<sup>22</sup> Defra contract outputs, and has updated human activities information (see [Tables 28-29](#) in [Annex 5](#)) to determine if there were any further information to inform Feature condition. 2011 and 2012 Vessel Monitoring system (VMS) 'ping' and gridded-fishing-effort information were not available in time to inform the present 2013 re-assessments. These data will be considered by JNCC when providing the regulatory authorities with our formal advice after the sites are designated. We used all appropriate new information in our assessments of likely condition, and then to support our advice on the draft Conservation Objectives.

An issue common to both East of Haig Fras pMCZ and North East of Farnes Deep pMCZ was that the habitat distribution presented in the new habitat maps indicated that the substrate types were patchier than originally thought. This patchiness presented difficulty in determining which activities were actually occurring on or off the previously more-broadly mapped Features, specifically because fishing activities data are of a coarse spatial resolution. JNCC took a precautionary approach as advised in the COG<sup>17</sup> by making an assumption that the activity was occurring over the entirety of the Feature although noting that our confidence in the exposure assessments would be low.

For East of Haig Fras pMCZ, a new 'mosaic' Feature was created from two Broad-Scale Habitat Features A5.1 **Subtidal coarse** and A5.4 **Subtidal mixed sediments**, since the mapping systems were unable to resolve their spatial distribution. Consequently it was very difficult to separate the two features to individually provide separate advice regarding their individual likely condition, and the appropriateness of Conservation Objectives. Consequently, this present advice treats them as a single 'mosaic feature'. We still provide advice for the Broad-Scale Habitat A5.1 **Subtidal coarse sediment** as it was recommended by Finding Sanctuary.

There are no sensitivity scores for such a 'mosaic feature' and therefore it was necessary to consider the sensitivity scores of both habitats for each pressure. The higher sensitivity score given in the MB0102 sensitivity matrix<sup>39</sup> was used in the vulnerability assessment (see vulnerability assessment tables in [Annex 5](#)).

The vulnerability to pressures associated with human activities of each Feature in the Tranche One offshore sites to pressures associated with human activities was assessed following the process outlined in the COG<sup>17,17</sup>. The assessment of Feature exposure to pressures associated specifically with fisheries activities followed the methodology outlined in Section 6 of the JNCC and NE assessment undertaken in 2012<sup>20</sup>. For the sites where no new habitat maps were available<sup>40</sup>, we checked spatially whether any new human activities may impact in or nearby the Features were occurring in or near the features.

Please note that for geological and geomorphological features, the default Conservation Objective is set to **Maintain** and confidence for such a level for objectives is high for relict geological and geomorphological features. Confidence in the presence of these Features is high, owing to the abiotic nature of their origin. The Features are predominantly identified on a morphological basis derived from bathymetry; our confidence in morphology of the seabed is high<sup>32</sup>.

Any changes from our 2012 Advice<sup>20</sup> to Defra are highlighted in the site sections below. However, JNCC reserves the right to further amend our advice should new information that informs Feature condition become available.

## 6.4 Assessment of certainty in the appropriateness of Feature Conservation Objectives

Following MCZ Technical Protocol I<sup>32</sup>, JNCC provides an assessment of our certainty in the draft Conservation Objective for each Feature based on our knowledge of the interaction between activities and Features. We advise whether we are more, or less, certain in the draft Conservation Objective.

Uncertainty in setting a Conservation Objective for a Feature arises both from our knowledge of a Feature's prevailing condition, and limitations in our knowledge about how ongoing activities potentially interact with Features. Where direct evidence of a Feature's prevailing condition is not available, the COG<sup>17</sup> describes how an objective is set by asking a series of prescribed questions and applying considered judgements. Feature sensitivity is a central part of the vulnerability assessment process. Previous studies on sensitivity have tended to focus on detailed habitat types (European Nature Information System (**EUNIS**) Level 4 and

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<sup>39</sup> MB0102: <http://randd.defra.gov.uk/>

<sup>40</sup> North of Celtic Deep pMCZ, South-West Deeps (West) pMCZ, Swallow Sand pMCZ and The Canyons pMCZ

higher<sup>41</sup>) or individual species, rather than Broad-Scale Habitats. Consequently, the sensitivity of the Broad-Scale Habitats (EUNIS level 3 or less) is assumed from the scores of their constituent more-detailed habitats and thus presented as a range. When establishing a draft objective, the COG recommends a precautionary approach, by using the most- sensitive score unless there are data available to justify using a less sensitive score. For some habitats, there is limited information available on the impact of pressures and so their sensitivity scores themselves have low confidence<sup>39</sup>. The actual sensitivity of a Feature at a particular location will depend on a number of factors, particularly the delineation of the detailed habitats present, the specific composition of the community or the nature of the substrate e.g. hardness and stability. The actual vulnerability of a Feature will depend on how local activities exert pressure on the habitats, and then our knowledge of how those pressures impact the condition of the Feature. Our view on the certainty in whether the conservation objectives set for Features is appropriate, depends on knowledge of the local environment, the prevailing pressures and our wider understanding of the pressure/impact relationship for the Feature.

We base our assessment of certainty on the answers to a series of sequential questions and application of expert judgement. Some cases are straightforward: if an activity damages the seabed, studies have clearly demonstrated there is an adverse effect on seabed and associated Features, and we can be certain that an objective of Recover is appropriate. Other cases are far less clear-cut, particularly where there is limited information on the detailed habitats present in a pMCZ and/or the impact of an activity is unknown, leading to a 'less certain' assessment of the Conservation Objective.

Within the six offshore sites in Tranche One, there is only one type of activity - demersal trawling - which resulted in Features being assessed to be moderately or highly vulnerable to any pressures (and therefore resulted in Recover objectives being advised). Depending on the Feature in question, there are variable amounts of evidence supporting our knowledge about the potential impacts associated with this type of activity. Whilst JNCC has followed the precautionary approach in the COG in establishing the objective, we recognise the lack of knowledge with our certainty assessments, noting the clear need to further develop our information base via an appropriate management regime at each site.

Within the six offshore sites in Tranche One the following habitat Features stated below, are known to occur. The present text provided describes our generic understanding of the impact of fishing activities, together with notes on how we have approached our assessment of certainty in a Feature's draft Conservation Objective. Our detailed site assessments in [Section 7](#) provide more specific information where available without repeating the generic text.

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<sup>41</sup> EUNIS Habitat Classification Marine Habitat Types: <http://www.pom-habitaty.eu/en/images/stories/dokumenty/jawne/eunis%20habitat%20classification%20marine%20habitat%20types.pdf>

## **A4.2 Moderate energy circalittoral rock**

The scientific literature on fishing impacts on rocky habitats contains insufficient detail to allow impacts on high, medium and low energy environments to be distinguished; see page 76<sup>42</sup>, Collie *et al.*, 2000<sup>43</sup> and Hinz *et al.*, 2011<sup>44</sup>. Our certainty in Conservation Objective setting for this Feature will depend on our knowledge of substrate hardness and biological community composition at a local scale.

## **A5.1 Subtidal coarse sediment**

There is peer-reviewed evidence for the effects of trawling and dredging on A5.1 **Subtidal coarse sediment**. There is a wide variation in impacts of fishing on this habitat; see page 33<sup>42</sup> and Sciberras *et al.*, 2013<sup>45</sup>. Our certainty in Conservation Objective setting for this Feature depends on our ability to classify it as being relatively stable or unstable at a local scale.

## **A5.2 Subtidal sand**

There is evidence for the impacts of trawling and dredging on A5.2 **Subtidal sand**; see page 29<sup>42</sup> and Collie *et al.*, 2000<sup>43</sup>. However, our certainty in Conservation Objective setting for this Feature depends on our ability to classify it as being relatively stable (low energy) or unstable (high energy) at a local scale.

## **A5.3 Subtidal mud**

The stable nature of the sediments makes them generally susceptible to disturbance from demersal towed fishing gear; see pages 40 & 45<sup>42</sup> and Collie *et al.*, 2000<sup>43</sup>.

## **A5.4 Subtidal mixed sediments**

Few studies have directly evaluated fishing impacts on A5.4 **Subtidal mixed sediments**; see page 37<sup>42</sup> and Sciberras *et al.*, 2013<sup>45</sup>. Our certainty in Conservation Objective setting for this Feature would depend on our knowledge of sub-habitat substrate type and community composition at a local scale.

## **A6 Deep sea bed**

Knowledge of impacts from bottom trawling is based on consideration of similar habitats occurring in shallower water; see page 47<sup>42</sup>. Our certainty in Conservation Objective setting for this Feature would depend on our knowledge of the energy regime or community composition at a local scale.

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<sup>42</sup> Advice on fisheries impacts on MCZ habitat features: <http://jncc.defra.gov.uk/page-4884>

<sup>43</sup> Collie J.S., Hall S.J., Kaiser, M.J., and Poiner, I.R 2000 *Journal of Animal Ecology* 69 (5), 785–798

<sup>44</sup> Hinz, H., Tarrant, D., Ridgeway, A., Kaiser, M.J. and Hiddink, J.G. 2011 Effects of scallop dredging on temperate reef fauna *Marine Ecology Progress Series* 432, 91–102

<sup>45</sup> Sciberras, M., Hinz, H., Bennell, J.D., Jenkins, S.R., Hawkins, S.J and Kaiser, M. J. 2013 MEPS Benthic community response to a scallop dredging closure within a dynamic seabed habitat *MEPS* 480:83-98

## **HOCI\_2 Cold-water coral reefs**

There is directly relevant peer-reviewed evidence for the effects of trawling on cold-water coral reefs. Fishing gear breaks up living and dead corals resulting in the loss of the physical structure of the reef which may take centuries to recover from damage, if at all. Biomass and diversity are reduced in areas impacted by trawling; see page 50<sup>42</sup> and Hinz *et al.*, 2011<sup>44</sup>.

## **HOCI\_18 Sea-pens and burrowing megafauna**

There is abundant evidence for the effects of trawling on muddy habitats including HOCI\_18 **Sea-pens and burrowing megafauna**; see page 40<sup>42</sup> and Collie *et al.*, 2000<sup>43</sup>.

## **HOCI\_21 Subtidal sands and gravels**

HOCI\_21 **Subtidal sands and gravels** is a unique case where the HOCI has a broader definition than the Broad-Scale Habitats with which it directly correlates (A5.1 **Subtidal coarse sediment** and A5.2 **Subtidal sand**) and so the HOCI\_21 **Subtidal sands and gravels** may contain both these Broad-Scale Habitats<sup>38</sup>. Our certainty in Conservation Objective setting for this Feature would depend on our ability to classify the Feature as stable or unstable at a local scale.

## **Large-scale geological/geomorphological Features (i.e. relict sandbanks and glacial tunnel valleys)**

Relict marine geological and geomorphological Features are typically large-scale, and the processes that created them are no longer operating and so they are subject to natural decline in conservation value owing to erosion and burial, outside of any anthropogenic activity. These structures are in a steady natural decline because they are undergoing natural erosion and covering by sediment and cannot reform if damaged, but owing to their large size, they are unlikely to be affected by anthropogenic activities. Following Technical Protocol I<sup>32</sup>, more certainty accompanies a Conservation Objective where confidence in Feature condition is moderate or high. We would therefore be more certain in the Maintain objectives set for these large scale features.

## **6.5 Site Risk**

A site's risk of damage from human activities was assessed using the methodology outlined in MCZ Technical Protocol G<sup>32</sup>. Site risk scores are the proportion of Features in a site with a 'recover' conservation objective. However, if all features are proposed with a 'maintain' objective, the Protocol calculation will give a zero percentage risk for the site. Clearly, there will be a residual risk to any site and the zero score is an artefact of the assessment process.

A Feature is considered to be at risk of damage or deterioration if it is vulnerable to a pressure arising from human activities, assuming that the higher a feature's vulnerability to a pressure, the higher the risk of

damage or deterioration. Offshore sites at higher risk of damage or deterioration are those considered to have Features which are all regarded as moderately or highly vulnerable to pressures associated with human activities and may therefore require more urgent management action to remove or reduce pressures to begin the recovery process towards Favourable Condition<sup>46</sup>.

Protocol G<sup>32</sup> does not provide for instances where geological features are present within a site. Large-scale geological features are generally not considered to be vulnerable to pressures from human activities (see above) and therefore have a default objective of maintain. Site risk scores are the proportion of Features in a site with a 'recover' objective and may therefore be underestimated when a geological Feature is present as this will lower the site risk percentage. Subsequently, for sites where a large-scale geological feature is present, advice is provided here in two parts; site risk where the geological Feature is removed from the calculation and where it is included, in order to illustrate the likely site risk score for ecological Features only.

Protocol G<sup>32</sup> discusses some of the limitations of the approach to assessing 'site risk'. The vulnerability assessment process provides a snapshot in time of Feature vulnerability to pressures associated with human activities. However, Features can become at risk of damage or deterioration if certain activities were to occur in the future or if an ongoing activity which is currently considered not to be impacting the Feature's condition changes in terms of location, frequency or intensity. In particular, cables are known to transect a number of Features on some sites and could be potentially removed or re-laid at any time. In-situ, they may be regarded as unlikely to impair Feature condition overall. However, the Feature may be highly sensitive to the pressures associated with cable maintenance or replacement and this may lead to damage of the Feature. Similarly, current levels of demersal trawling may be regarded as unlikely to impair feature condition in some sites. However should the fishing activity change in the future e.g. level of effort increases, then the Feature may become at risk of damage or deterioration.

There is not a protocol to guide advice regarding future risk to features; Protocol G<sup>32</sup> provides for current risk only. Any advice JNCC provide here regarding future risk to Features within the Tranche One offshore sites is a view based on our knowledge of Feature sensitivity and how human activity interacts with Features.

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<sup>46</sup> As defined in a site's Designation Order.



## 7 Site Assessments

### 7.1 East of Haig Fras pMCZ

East of Haig Fras pMCZ was recommended by the Finding Sanctuary regional MCZ project for the Broad-Scale Habitats A4.2 **Moderate energy circalittoral rock**, A5.1 **Subtidal coarse sediment** and A5.2 **Subtidal sand**. Defra proposed the Features A5.2 **Subtidal sand** and A5.1 **Subtidal coarse sediment** for designation in 2013; A4.2 **Moderate energy circalittoral rock** was not proposed for designation in 2013<sup>19</sup>. JNCC is also providing advice on two new Features identified following data received through MB0120<sup>22</sup>: a mosaic habitat comprising A5.1 **Subtidal coarse sediment** and A5.4 **Subtidal mixed sediments**, and A5.3 **Subtidal mud**.

#### 7.1.1 Assessment of Feature Presence and Feature Extent

A summary of the results of the assessment of Feature presence and feature extent following Protocol E<sup>32</sup> and accompanying guidance<sup>35</sup> is presented below in [Table 3](#). The data and assessment can be viewed in full in [Annex 4](#), Tables [16](#) and [17](#).

**Table 3: East of Haig Fras pMCZ Evidence Assessment Summary**

Site (code)	Feature (code)	Evidence Assessment Results				2013 Tranche Feature
		Confidence in presence	Rationale for confidence in feature presence	Confidence in extent	Rational for confidence in feature extent	
East of Haig Fras (FS 07)	A4.2 Moderate energy circalittoral rock	High (Low)	Presence of A4.2 Moderate energy circalittoral rock supported by full coverage habitat map from survey with supporting ground truth sample data.	High (Low)	Extent of A4.2 Moderate energy circalittoral rock by full (100%) coverage habitat map from survey with ground-truth sample data.	No
	A5.1 Subtidal coarse sediment	High (Mod)	Presence of A5.1 Subtidal coarse sediment is supported by a full coverage habitat map from survey with supporting ground-truth sample data.	Mod (Low)	Presence of A5.1 Subtidal coarse sediment is supported by a 100% coverage habitat map from survey with a >58% MESH confidence score verifying the parent habitat A5. (Please note - "The two Broad-scale Habitats 'A5.1 Subtidal coarse sediment' and A5.4 Subtidal mixed sediments are presented in the map as a complex 'A5.1/A5.4 Subtidal coarse/mixed sediments'. They show no differentiation in their acoustic or topographical properties that would enable them to be mapped separately." - East of Haig Fras pMCZ: Post-survey Site Report 18).	Yes
	A5.2 Subtidal sand	High (Mod)	Presence of A5.2 Subtidal sand supported by a full coverage habitat map from survey with supporting ground-truth sample data.	High (Low)	Extent of A5.2 Subtidal sand supported by full (100%) coverage habitat map from survey with ground-truth sample data.	Yes
	A5.1/A5.4 Subtidal coarse/mixed sediments mosaic	High (*)	<b>New Feature</b> - Presence of A5.1/A5.4 Subtidal coarse/mixed sediments' is supported by a 100% coverage habitat map from survey ground-truth sample data,	High (*)	Extent of A5.1/A5.4 supported by full (100%) coverage habitat map from survey with ground-truth sample data.	No*
	A5.3 Subtidal mud	High (*)	<b>New Feature</b> - Presence of A5.3 Subtidal mud supported by a full coverage habitat map from survey with supporting ground-truth sample data.	High (*)	Extent of A5.3 Subtidal mud supported by full (100%) coverage habitat map from survey with ground-truth sample data.	No*

The blue text represents the 2012 assessment score

\*These features are recently identified and added to our advice; therefore they have no score from a past assessment.

For the full original 2012 assessment, see page 316 of the JNCC and NE advice (as amended): [MCZ Advice Amendments Report 2012](#).

Produced by JNCC



The 2012 MCZ verification survey was completed for East of Haig Fras pMCZ as part of the MB0120<sup>22</sup> contract to collect new information for the site. A new habitat map was developed from these 2012 survey data, which has a high Mapping European Seabed Habitats (**MESH**) confidence score<sup>47</sup> (>58%) and included multiple ground-truth validation points. This new habitat map identified a new Broad-Scale Habitat, A5.3 **Subtidal mud**, within the western side of the site but was unable to distinguish between the A5.1 **Subtidal coarse sediment** and A5.4 **Subtidal mixed sediments** therefore presenting a mosaic class polygon called 'A5.1/A5.4 **Subtidal coarse/mixed sediments**'. A4.2 **Moderate energy circalittoral rock**, believed to be glacial moraines which, under the EUNIS classification system are classed as rock, is supported by images from camera tows from recent survey data found in the East Haig Fras pMCZ Summary Site Report<sup>48</sup>. This Feature has a **High** confidence score, covering less than 3% of site.

The habitat maps were developed through a semi-automated classification method of the 100% coverage multibeam data. Using this classification method, as indicated above, it was not possible to resolve between the two habitat types A5.1 **Subtidal coarse sediment** (a Feature recommended by the regional project and put forward for designation in 2013 by Defra) and A5.4 **Subtidal mixed sediments** (a new feature), and so both were presented as a combined polygon called 'A5.1/A5.4 **Subtidal Coarse/Mixed Sediments**'. Combined, the ground-truthing samples within the site and the 'mosaic' polygons verify the Feature presence of both A5.1 and A5.4, with **High** confidence of Feature presence and Feature extent.

The two Features could not be mapped separately at East of Haig Fras pMCZ; however, they were resolved at North East of Farnes Deep pMCZ (see [Section 7.3](#)). The difficulty in separating these two Features at East of Haig Fras pMCZ may be for a number of reasons. The composition and inherent heterogeneity of the seabed sediments present at East of Haig Fras pMCZ are likely to be different to that at North East of Farnes Deep pMCZ, which creates a different acoustic signal (backscatter from the multi-beam echo sounder) reflected by the seabed resulting in an inability to separate A5.1 and A5.4 sediment types. It is this backscatter signal which is used during the mapping process as a proxy for determining seabed type. There is also variation within each of the Broad-Scale Habitat sediment classes. A5.1 **Subtidal coarse sediment** can contain varying degrees of gravel or sand, and samples classed as A5.4 **Subtidal mixed sediments** may contain varying amounts of sand, mud and gravel within the confines of this specific sediment class. The combination of these factors has resulted in the two Features, A5.1 and A5.4, being mapped as a combined mosaic Feature. An evidence assessment was therefore conducted for the mosaic habitat (A5.1/A5.4 **Subtidal coarse/mixed sediments**) as well as separately for A5.1 **Subtidal coarse sediment** as A5.1 was recommended by the regional MCZ project. Both Features were assessed based on the presence and extent of the mosaic habitat classification 'A5.1/A5.4 **Subtidal coarse/mixed sediments**'.

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<sup>47</sup> See Mapping European Seabed Habitats (MESH) web site (<http://www.searchmesh.net/default.aspx?page=1635>) for and explanation of the MESH Confidence Assessment

<sup>48</sup> East of Haig Fras rMCZ Site Summary Report: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221>

Confidence in presence of A5.1 **Subtidal coarse sediment** is now **High** rather than **Moderate**, as it had been assessed in our 2012 advice<sup>20</sup>. This decision was approved by the JNCC MCZ Evidence QA Group (See [Annex 3](#) for its Terms of Reference). Our confidence in extent has increased from **Low** to **Moderate** in accordance with Protocol E<sup>32</sup> and accompanying guidance<sup>35</sup>.

JNCC advises that because it is not possible to separately map A5.1 **Subtidal coarse sediment** and A5.4 **Subtidal mixed sediments** at this site, the combined mosaic Feature of A5.1/A5.4 **Subtidal coarse/mixed sediments** should be designated as a Feature of East of Haig Fras pMCZ rather than just the separate A5.1 **Subtidal coarse sediment** that was originally recommended by Finding Sanctuary and put forward for designation in 2013 by Defra. Alternatively, Defra may designate both A5.1 **Subtidal coarse sediment** and A5.4 **Subtidal mixed sediments** separately as this would ensure the protection of the mosaic habitat.

The British Geological Survey (**BGS**) data used in our 2012 assessment<sup>20</sup> support the presence of A5.1 **Subtidal coarse sediment** and A5.2 **Subtidal sand** in the site. The BGS data points show some disagreement with the habitat maps from the survey in 2012, which is most likely due to the very patchy nature/mosaic of the habitat presented in the map or spatial errors from older positional systems. Across the extent of the mosaic of A5.1/A5.4 **Subtidal coarse/mixed sediments**, 5 out of the 6 BGS data points that recorded the presence of A5.1 **Subtidal coarse sediment** agree with the mapped A5.1/A5.4 mosaic habitat and 4 out of 6 BGS recorded points of A5.2 **Subtidal sand** agree with mapped area of A5.2 **Subtidal sand**.

There are similarities in the area covered by A5.1/A5.4 **Subtidal coarse/mixed sediments** in the 2012 habitat map and the area of the A5.1 **Subtidal coarse sediment** polygon in UKSeaMap<sup>37</sup>. Whereas the 2012 habitat map improves our understanding of the nature and extent of the habitats in this site, further survey work is currently underway to gather additional data, including side-scan sonar lines, to improve our overall understanding of the site.

Recognising the extremely heterogeneous nature of some areas of the seabed around the UK, and our increasing ability to map these areas at sub-metre accuracy, JNCC is considering the issue of minimum mapping units and whether specific guidance is required for benthic habitats. Current guidance (from Marine Nature Conservation Review (**MNCR**)<sup>49</sup> methods) states that to qualify as a biotope, the area should occupy a patch of 5m x 5m or more. Recommended minimum mapping units could vary according to the purpose of the mapping, the techniques used to collect data, and the seabed habitat in question. New maps may be created for East of Haig Fras pMCZ in the future, depending on the outcome of this area of work.

A review of available data noted the presence of **Native Oyster (*Ostrea edulis*)** Species FOCI at one location within this site, recorded during a Cefas Celtic Sea 2m beam trawl survey between 2000 and 2002.

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<sup>49</sup> Marine Nature Conservation Review: <http://jncc.defra.gov.uk/default.aspx?page=1596>

Due to the dataset providing a range of dates, a conservative estimate of the year 2000 was assigned to assess this sample<sup>50</sup>. Following Protocol E, the confidence in this Feature presence is **Low**.

### 7.1.2 Advice on draft Conservation Objectives

**Recover** objectives were advised in our 2012 assessment for A4.2 **Moderate energy circalittoral rock**, A5.1 **Subtidal coarse sediment** and A5.2 **Subtidal sand** within East of Haig Fras pMCZ<sup>20</sup>. Our advice remains unchanged from the 2012 assessment following a review of newly available data (see [Table 1](#)). These Features are considered exposed to pressures associated with demersal trawling particularly that associated with non-UK EU vessels (VMS aggregated data 2006-2009); a number of telecommunications cables also transect the site. **Recover** objectives are still considered appropriate as these Features are regarded as moderately or highly vulnerable to pressures associated with demersal trawling activities (further detail on the vulnerability assessments of Features in this site is provided in [Tables 28](#) and [29](#) in [Annex 5](#)). A summary of the 2013 assessments is presented in [Table 4](#).

**Table 4: Summary of the review of conservation advice for Features in East of Haig Fras pMCZ**

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F)	CO advised (MCZ Conservation Objective Guidance)	Certainty in CO (MCZ Technical Protocol I)	Site Risk (MCZ Technical Protocol G)	2013 Tranche Feature
East of Haig Fras (FS 07)	A4.2 Moderate energy circalittoral rock	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	Less certain in recover ( <i>Less certain in recover</i> )	80% (100%)	No
	A5.1 Subtidal coarse sediment	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	Less certain in recover ( <i>Less certain in recover</i> )		Yes
	A5.2 Subtidal sand	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	Less certain in recover ( <i>Less certain in recover</i> )		Yes
	A5.1/A5.4 Subtidal coarse/mixed sediments mosaic	Low (*)	Recover (*)	Less certain in recover (*)		No*
	A5.3 Subtidal mud	Low (*)	Maintain (*)	Less certain in maintain (*)		No*

The blue text represents the 2012 assessment score.

\* These Features are recently identified and added to our advice; therefore they have no score from a past assessment.

Following Protocol F<sup>32</sup> low confidence in Feature condition accompanies the setting of any objective set through the vulnerability assessment approach unless further criteria are satisfied which is not the case here. JNCC therefore advises **Low** confidence in Feature condition for all Features, including those recently identified, in East of Haig Fras pMCZ.

<sup>50</sup> Confirmed by the JNCC MCZ Evidence QA Group  
Produced by JNCC

As highlighted in the [Section 7.1.1](#), two new Features were identified within the site as a result of the 2012 survey. The recently mapped mosaic Feature, A5.1 **Subtidal coarse sediment** / A5.4 **Subtidal mixed sediments**, has been assigned a **Recover** objective as it is considered moderately vulnerable to pressures associated with demersal trawling. A5.3 **Subtidal mud** is assessed as having a **Maintain** objective, as it is not currently considered to be highly or moderately vulnerable to any pressures associated with human activities.

### 7.1.3 Assessment of certainty in the appropriateness of Feature Conservation Objectives

Our certainty in setting a Conservation Objective for A4.2 **Moderate energy circalittoral rock** depends on our knowledge of community composition (see [Section 6.3](#)). We do not currently have additional information on community composition or rock type to allow us to refine our assessment of Feature sensitivity at the site. Additionally we cannot be sure the demersal trawling is occurring directly over A4.2 **Moderate energy circalittoral rock** because the spatial resolution of the VMS data is insufficient; the location of the activity in relation to such small outcrops of rock cannot be determined. Therefore we are **less certain in the Recover objective** for this Feature.

For the mosaic Feature A5.1 **Subtidal coarse sediment** / A5.4 **Subtidal mixed sediments**, we do not have additional information to refine our assessment of Feature sensitivity at the site and we cannot be sure the demersal trawling is occurring over the Feature due to the low spatial resolution of the VMS data. The location of the activity in relation to the patches of A5.1/A5.4 **Subtidal coarse/mixed sediments** cannot be determined. We are therefore **less certain in the Recover objective** for this mosaic Feature. A similar reasoning can be applied to A5.2 **Subtidal sand** and to the separate assessment of A5.1 **Subtidal coarse sediment** within this site. There is no additional information to refine Feature sensitivity and we cannot be sure the potentially damaging demersal trawling is occurring over either Feature. We are therefore **less certain in the Recover objective** for these two Features.

Whilst A5.3 **Subtidal mud** is assigned an objective of **Maintain**, the lack of good spatial data on the exact location of demersal trawling does not discount the possibility of an interaction taking place which is potentially damaging activity to the Feature. Consequently we are **less certain in the Maintain objective** for this Feature.

### 7.1.4 Site Risk

JNCC advises **Recover** objectives for all Features in this site, except for one of the new Features A5.3 **Subtidal mud**. Following Protocol G<sup>32</sup>, we assess the site as being at high (**80%**) risk of deterioration. This current risk is lower than that advised by JNCC in 2012<sup>20</sup>, which reflects the **Maintain** objective advised for A5.1 **Subtidal mud**.

Any future increase in the exposure to pressures would increase the risk of damage or deterioration to the Features. In particular, should demersal trawling effort increase over the site or if the inactive cable that overlaps the site be decommissioned or recommissioned, the pressures associated with these activities may present an increased risk of damage or deterioration to the Features.

## 7.2 North of Celtic Deep pMCZ

North of Celtic Deep pMCZ was recommended by the Irish Sea Conservation Zone regional MCZ project for the Broad-Scale Habitats A4.2 **Moderate energy circalittoral rock**, A5.1 **Subtidal coarse sediment**, A5.2 **Subtidal sand** and the HOCI\_21 **Subtidal sands and gravels**. Of these Features, A4.2 **Moderate energy circalittoral rock** and A5.2 **Subtidal sand** were not proposed for designation in 2013<sup>19</sup>.

### 7.2.1 Assessment of Feature Presence and Feature Extent

JNCC conducted the 2013 assessment on the UKSeaMap modelled habitat map<sup>37</sup> and available ground-truthing data, which remain the best-available evidence for Features on in North of Celtic Deep pMCZ. [Table 5](#) presents a summary of the results of the assessment of Feature presence and extent following Protocol E<sup>32</sup> and accompanying guidance<sup>35</sup>. The data and assessment can be viewed in full in [Annex 4](#), [Tables 18](#) and [19](#).

**Table 5: North of Celtic Deep pMCZ Evidence Assessment Summary**

Site (code)	Feature (code)	Evidence Assessment Results				2013 Tranche Feature
		Confidence in presence	Rationale for confidence in Feature presence	Confidence in extent	Rational for confidence in Feature extent	
North of Celtic Deep (ISCZ 05)	A4.2 Moderate energy circalittoral rock	Low (Low)	Only modelled data available.	Low (Low)	Only modelled data available.	No
	A5.1 Subtidal coarse sediment	High (Mod)	Multiple ground-truthing records available (more than five) for EUNIS A5.1 Subtidal coarse sediment with >90% agreement of parent Feature and >50% agreement in Feature type.	Mod (Mod)	Sample data are well distributed across the site, however based on expert judgement, the percentage agreement across the Feature is <90% .There is > 90% agreement of the parent Feature across the site.	Yes
	A5.2 Subtidal sand	High (Mod)	Multiple ground-truthing records available (more than five) for EUNIS A5.2 Subtidal sand with <90% agreement of parent Feature.	Mod (Low)	Sample data are well distributed across the site, however the percentage agreement across the Feature is <90%. There is > 90% agreement of the parent Feature across the site.	No
	HOCI_21 Subtidal sands and gravels	High (Mod)	Multiple ground-truthing records available (more than five), >50% agreement across records for Subtidal sands and gravels FOCI.	Mod (Mod)	Sample data are well distributed across the site, however, based on expert judgement, the percentage agreement across the Feature is <90% .There is > 90% agreement of the parent Feature across the site.	Yes

The blue text represents the 2012 assessment score.

For the full original 2012 assessment, see page 366 of the JNCC and NE advice (as amended): [MCZ Advice Amendments Report 2012](#).

An MCZ verification survey was completed for North Celtic Deep pMCZ in 2012 as part of MB0120<sup>22</sup> to collect new information for the site (report to be published soon)<sup>51</sup>. Grab samples and video image data were collected for this site. Further acoustic data have been collected in spring 2013 for this area and will be used to create a new habitat map for future consideration. However, the results of the acoustic data collection were not available in time for this 2013 evidence assessment.

Based only on the sample points from both historical data used in our previous evidence assessment in 2012 and the 2012 survey data, presence of A5.1 **Subtidal coarse sediment**, A5.2 **Subtidal sand**, A5.3 **Subtidal mud** and A5.4 **Subtidal mixed sediments** are verified (of which A5.4 and A5.3 were not mapped Features). There are also four data points recording **Horse mussel (*Modiolus modiolus*)** beds from the Marine Recorder **MNCR**<sup>49</sup> data.

A5.1 **Subtidal coarse sediment** now has **High** confidence in presence in comparison to the **Moderate** confidence score as in our advice document in 2012<sup>20</sup>. The **High** confidence score was based on there being more than 5 data points for the Feature within the site. However, our confidence in Feature extent has not changed and remains the same as in our 2012 evidence assessment.

Following our 2013 analyses, JNCC advises that the previous recommendation for HOCI\_21 **Subtidal sands and gravels** should not go forward separately for designation in 2013<sup>38</sup>. The definition of this habitat FOCI is very broad and effectively contains the Broad-Scale Habitats A5.1 **Subtidal coarse sediment** and A5.2 **Subtidal sand**. Protecting the individual Broad-Scale Habitat Features within the site will therefore protect the HOCI by default. JNCC recommends that the HOCI\_21 **Subtidal sands and gravels** is not taken forward to designation in 2013, and instead A5.2 **Subtidal sand**, for which we have **High** confidence in Feature presence and **Moderate** confidence in Feature extent, is designated as a Feature of the site in 2013. Such a replacement will still ensure protection of HOCI\_21 **Subtidal sands and gravels** by default.

Our review of available taxon data noted the presence of **Ocean quahog (*Arctica islandica*)** Species FOCI within North Celtic Deep pMCZ on two separate occasions between 1989 and 2012. The first occasion was during the 'BIOMOR southern Irish Sea sublittoral survey 1989 - 1991', where samples were found in grab samples at three locations within the site. MB0120 JNCC/Cefas MCZ verification survey in 2012 recorded a single juvenile specimen during ground-truthing of the site<sup>22</sup>. Using Protocol E<sup>32</sup> our confidence in the current presence of **Ocean quahog (*Arctica islandica*)** has been set as **Moderate** since there are multiple records, including one record recorded within the last six years.

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<sup>51</sup> North of Celtic Deep rMCZ Site Summary Report:  
<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221>



## 7.2.2 Advice on draft Conservation Objectives

In our 2012 assessment JNCC agreed with the Conservative Objectives set by the Irish Sea Conservation Zone regional project for A4.2 **Moderate energy circalittoral rock**, A5.1 **Subtidal coarse sediment**, A5.2 **Subtidal sands** and HOCI\_21 **Subtidal sands and gravels**. Our advice remains unchanged from the 2012 assessment following a review of recently available data (see [Table 1](#)). **Recover** objectives are still appropriate for A5.1 **Subtidal coarse sediment**, A5.2 **Subtidal sands** and HOCI\_21 **Subtidal sands and gravels** as no new evidence has been made available to indicate Feature condition should be revised. A summary of the assessments for the Conservation Objectives can be found below in [Table 6](#).

**Table 6: Summary of the review of conservation advice for Features in North of Celtic Deep pMCZ**

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F)	CO advised (MCZ Conservation Objective Guidance)	Certainty in CO (MCZ Technical Protocol I)	Site Risk (MCZ Technical Protocol G)	2013 Tranche Feature
North of Celtic Deep (ISC205)	A4.2 Moderate energy circalittoral rock	Low ( <i>Low</i> )	Maintain ( <i>Maintain</i> )	Less certain in maintain ( <i>Less certain in maintain</i> )	75% (75%)	No
	A5.1 Subtidal coarse sediment	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	More certain in recover ( <i>More certain in recover</i> )		Yes
	A5.2 Subtidal sand	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	More certain in recover ( <i>More certain in recover</i> )		No
	HOCI_21 Subtidal sands and gravels	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	More certain in recover ( <i>More certain in recover</i> )		Yes

The blue text represents the 2012 assessment score.

Following Protocol F<sup>32</sup>, low confidence in Feature condition accompanies the setting of any objective set through the vulnerability assessment approach unless further criteria are satisfied which is not the case here. JNCC therefore advises **Low** confidence in Feature condition for all Features in North Celtic Deep pMCZ. Further detail on the conservation advice for the North Celtic Deep pMCZ site Features can be found in our 2012 Advice document in Annex 7, Table 222 pages 1207-1208<sup>20</sup>.

While there has been additional ground-truthing data collected by a MB0120 MCZ site verification survey in 2012, no new habitat map or information to support an assessment of condition are available to inform our 2013 advice. A check of new data (see [Table 1](#)) did not reveal any new activities occurring on or near the Feature and therefore our advice to Defra from 2012 remains unchanged.

In addition to new survey data, one report and one consultation response were reviewed and JNCC concluded they could not be used to inform Feature condition. Fletcher *et al.* (2012) noted a recreational angling interest within the site, with four charter boats known to operate. However, without an indication of effort or whether the activity is likely to interact with benthic features it is not possible to use this information

to support an assessment of exposure to pressures on the Feature. Comité National des Pêches Maritime et des Elevages Marins' response to the 2013 consultation highlighted that members of their fleet had been engaged in fishing activity within the site boundary. However, there was insufficient information to determine whether such activity within the site is pelagic or demersal, nor could levels of effort be identified. Consequently exposure to pressures could not be assessed using these data and could not be used to inform assessment of the likely Feature Condition.

### 7.2.3 Assessment of certainty in the appropriateness of Feature Conservation Objectives

Our certainty in a Conservation Objective for A4.2 **Moderate energy circalittoral rock** depends on our knowledge of substrate hardness and community composition (see [Section 6.4](#)). We do not currently have appropriate additional information to allow any refinement to our assessment of Feature sensitivity at the site. However, there is clear evidence demonstrating the impacts of towed fishing gear on rocky substrata (see page 76<sup>42</sup>). VMS data indicates some demersal fishing is occurring over the Feature, and while the **Maintain** objective was set in light of those levels being regarded as relatively low, we are **Less certain the Maintain objective** set for this Feature is appropriate because a potentially damaging activity is occurring but its effect unknown.

A5.1 **Subtidal coarse sediment**, A5.3 **Subtidal sand** and HOCI\_21 **Subtidal sand and gravels** are known to be exposed to demersal trawling activities which are potentially damaging to these Broad-Scale Habitats (see page 33<sup>42</sup>). We currently do not have in-situ information on community composition which could refine our assessment of Feature sensitivity. However, these Features generally occur at depths around 100m that would suggest that a more physically stable environment prevails, since it is relatively removed from the influence of wind-driven currents (see wave-base models in UKSeaMap<sup>37</sup>) and there is evidence to indicate that **Ocean quahog (*Arctica islandica*)**, a very long-lived, sessile species, are present throughout the site. JNCC & NE<sup>42</sup> presents the evidence describing the likely effect of demersal fishing on stable environments (see pages 29 and 30). The communities present may therefore be more fragile and slower to recover than those in shallower environments which are subject to greater natural disturbance. We therefore advise we are **more certain in the Recover objective** for these Features.

### 7.2.4 Site Risk

The site risk for North Celtic Deep pMCZ Features is moderate (**75%**), since three out of the four recommended Features have **Recover** objectives. Our advice is unchanged from the 2012 assessment. The recover objectives are based on moderately or high vulnerability of the Features A5.1 **Subtidal coarse sediment**, A5.2 **Subtidal Sand** and HOCI\_21 **Subtidal sands and gravels** to pressures associated with demersal trawling. No new information is available to indicate objectives for the Features in North Celtic Deep pMCZ should be revised.



Should demersal trawling effort increase over the site, the risk of damage or deterioration to the Features would also be expected increase. For the Feature A4.2 **Moderate energy circalittoral rock** this would require review of the maintain objective.

## 7.3 North East of Farnes Deep pMCZ

North East of Farnes Deep pMCZ (originally called Rock Unique pMCZ) was recommended by the Net Gain regional MCZ project for the Broad-Scale Habitat Features A5.1 **Subtidal coarse sediment**, A5.2 **Subtidal sand** and A4.3 **Low energy circalittoral rock** and the HOCl **Subtidal sands and gravels**. A4.3 **Low energy circalittoral rock** was not proposed for designation in 2013<sup>19</sup>. JNCC provide advice for three new Features identified following new survey data collected in 2012 through MB0120<sup>22</sup>: A5.3 **Subtidal mud**, A5.4 **Subtidal mixed sediments** and HOCl\_18 **Sea-pens & burrowing megafauna**.

### 7.3.1 Assessment of Feature Presence and Feature Extent

A summary of the results of the assessment of Feature presence and Feature extent following Protocol E<sup>32</sup> and accompanying guidance<sup>35</sup> is presented below in [Table 7](#). The data and assessment can be viewed in full in [Annex 4](#), [Tables 20](#) and [21](#).

**Table 7: North East of Farnes Deep pMCZ Evidence Assessment Summary**

Site (code)	Feature (code)	Evidence Assessment Results				2013 Tranche Feature
		Confidence in feature presence	Rationale for confidence in Feature presence	Confidence in Feature extent	Rational for confidence in Feature extent	
North East of Farnes Deep pMCZ (NG 15)	A4.3 Low energy circalittoral rock	No (Low)	Recent survey in 2012 did not record EUNIS A4.3 Low energy circalittoral rock cropping out within the site and mapped a different habitat in place of the previously modelled rock feature.	No (Low)	Recent survey did not map outcropping rock within in the site.	No
	A5.1 Subtidal coarse sediment	High (Mod)	Presence of EUNIS A5.1 Subtidal coarse sediment is supported by a full coverage habitat map from survey with supporting ground truth sample data.	High (Mod)	Extent of EUNIS A5.1 Subtidal coarse sediment is supported by a full coverage habitat map from survey with ground-truth sample data.	Yes
	A5.2 Subtidal sand	High (Mod)	Presence of EUNIS A5.2 Subtidal sand is supported by a full coverage habitat map from survey with supporting ground-truth sample data.	High (Mod)	Extent of EUNIS A5.2 Subtidal sand supported by a full coverage habitat map from survey with ground-truth sample data.	Yes
	HOCl_21 Subtidal sands and gravels	High (Mod)	Presence of HOCl_21 Subtidal sands and gravels is supported by a full coverage habitat map from survey with supporting ground-truth sample data.	High (Mod)	Extent of HOCl_21 Subtidal sands and gravels supported by a full coverage habitat map from survey with ground-truth sample data.	Yes
	A5.3 Subtidal mud	High (*)	<b>New Feature</b> - Presence of EUNIS A5.3 Subtidal mud supported by a full coverage habitat map from survey with supporting ground-truth sample data.	High (*)	Extent of EUNIS A5.3 Subtidal mud supported by a full coverage habitat map from survey with ground-truth sample data.	No*
	A5.4 Subtidal mixed sediments	High (*)	<b>New Feature</b> - Presence of EUNIS A5.4 Subtidal mixed sediments is supported by a full coverage habitat map from survey with supporting ground-truth sample data.	High (*)	Extent of EUNISA5.4 Subtidal mixed sediments supported by a full coverage habitat map from survey with ground-truth sample data.	No*
	HOCl_18 Sea-pens & burrowing megafauna	High (*)	<b>New Feature</b> - Presence of HOCl_18 Sea pen & burrowing megafauna communities is supported by habitat data points which intersect with the full coverage habitat map from survey	Low (*)	Confidence in feature extent is Low due to the limited number of sample stations that identify HOCl_18 Sea pen & burrowing megafauna communities and the acoustic information is only capable of identifying the broader habitat definition at a coarser scale. A5.3 Subtidal Mud is also an indicator for the FOCl Sea pen and burrowing megafauna communities.	No*

The blue text represents the 2012 assessment score.

\* These Features are recently identified and added to our advice; therefore they have no score from a past assessment.

*For the full original 2012 assessment, see page 426 of the JNCC and NE advice (as amended): [MCZ Advice Amendments Report 2012](#)*

The 2013 assessment used a new habitat map, developed using the same semi-automated classification method as mentioned in [Section 7.1.1](#) for East of Haig Fras pMCZ, from a survey undertaken by Cefas in 2012 as part of the MB0120<sup>22</sup> contract to collect new information for the site. These data are currently considered the best-available evidence for assessing Feature presence and Feature extent. The resulting map has a high MESH confidence score (>58%)<sup>32</sup> and used multiple ground-truth validation points. This new map identified Features within the site that were not originally put forward by the regional project: Broad-Scale Habitats A5.3 **Subtidal mud** and the HOCI\_18 **Seapens and burrowing megafauna** communities within the western area of the site, and A5.4 **Subtidal mixed sediments** across the whole of the site, summarised above in [Table 7](#). JNCC considered these additional Features in our 2013 assessment. All Features, with the exception of A4.3 **Low energy circalittoral rock**, have **High** confidence in presence. We recommend all six Features with **High** confidence in presence are designated as Features of North East of Farnes Deep pMCZ.

The 2012 survey did not identify the presence of A4.3 **Low energy circalittoral rock** within the site boundary using multi-beam sonar and ground samples. JNCC subsequently investigated the provenance of the assignment of this Feature further, as requested by the JNCC MCZ Evidence QA Group. The Feature was originally recommended since it was shown on UKSeaMap<sup>37</sup>, which itself had used a rock and hard substrate map provided by BGS. BGS based their map interpretation on the best-available data at that time (existing samples, seismic, and Admiralty charts). The BGS hard-substrate polygons map the rock that occurs within 0.5m of the seabed surface, whereas A4.3 **Low energy circalittoral rock** listed in the ENG<sup>16</sup> refers to rock outcrops above seabed surface where associated epifaunal communities would occur. The 2012 survey data of seabed surface does not show any A4.3 **Low energy circalittoral rock** out-cropping within the site. The five BGS data points in [Table 20](#) of [Annex 4](#) describe the core and dredge samples taken in this area as fine-/medium-grained sand on top of chalk, and the chalk is recorded at depths of >0.2m. In summary, there is no evidence for the habitat A4.3 **Low energy circalittoral rock** within the site at present, altering the previous **Low** confidence score to one of **No confidence**, although we recognise that this judgement may alter in the future if the overlying sediment moves due to natural change.

The BGS data points used in the original 2012 assessment verify the presence of Features A5.1 **Subtidal coarse sediment** and A5.2 **Subtidal sand** in the site. There is some disagreement between the BGS interpreted data points and the 2013 habitat map classes that may be due to the patchy nature/mosaic of the habitat presented in map, or a reflection of lower precision in older positioning systems used on survey, i.e. pre-Global Positioning System (GPS). However, the most-current data justify a **High** confidence score for presence and extent, raised from **Moderate** in our 2012 advice.

Recent survey outputs provided a map of 'potential Seapens and burrowing megafauna communities' derived from polygons showing the distribution of mud. These data identified HOCI\_18 **Sea-pens and burrowing megafauna** Feature in this site<sup>52</sup>. However, the ground-truthing samples verifying the presence of the Feature occur outside of this mud habitat polygon. Consequently, we have **High** confidence in the Feature's presence within the site, but **Low** confidence in its extent based on current information. Further data analysis or even additional data collection is necessary to be clear of the extent of the HOCI\_18 **Sea-pens and burrowing megafauna** communities within the pMCZ, particularly to determine whether the area shown as mud reflects its distribution. The recently identified Features A5.3 **Subtidal mud** and A5.4 **Subtidal mixed sediments** both have **High** confidence in extent following the recent survey data.

JNCC reviewed available taxon data and noted the presence of **Ocean quahog (*Arctica islandica*)** species FOCI within North East of Farnes Deep pMCZ on two separate surveys in 1986 and 2012. The earlier records came from a Cefas North Sea benthos survey in 1986, where a single specimen was found in a grab sample. The later records came from the JNCC/Cefas MCZ verification survey in 2012, where 13 samples were recorded during ground-truthing of the site; 4 by video and 9 through pre-inspection of Particle Size Analysis (**PSA**) samples. Through the application of Protocol E<sup>32</sup> and the accompanying guidance<sup>35</sup>, a **High** confidence was set for the presence of this Feature within North East of Farnes Deep pMCZ since more than 5 samples were collected during the 2012 survey.

### 7.3.2 Advice on draft Conservation Objectives

**Maintain** objectives were recommended by the Net Gain regional project for the Feature A4.3 **Low energy circalittoral rock**, A5.1 **Subtidal coarse sediment**, A5.2 **Subtidal sand** and HOCI\_21 **Subtidal sands and gravels**. Net Gain recommended these objectives on the basis that there were no activities occurring on or near the site that they thought would impair the Feature's condition. JNCC advised in our 2012 assessment that these Conservation Objectives were appropriate (except for the Feature A4.3 **Low energy circalittoral rock** where no advice was required); following our review of available data in 2013 (see [Table 1](#)), our view remains unchanged. A summary of the 2013 assessments is presented in [Table 8](#).

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<sup>52</sup> North East of Farnes Deep rMCZ Site Summary Report:  
<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221>

**Table 8: Summary of the review of conservation advice for Features in North East of Farnes Deep pMCZ**

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F)	CO advised (MCZ Conservation Objective Guidance)	Certainty in CO (MCZ Technical Protocol I)	Site Risk (MCZ Technical Protocol G)	2013 Tranche Feature
North East of Farnes Deep (NG 15)	A4.3 Low energy circalittoral rock	N/A (N/A)	N/A (N/A)	N/A (N/A)	0% (0%)	No
	A5.1 Subtidal coarse sediment	Low (Low)	Maintain (Maintain)	More certain in maintain (More certain in maintain)		Yes
	A5.2 Subtidal sand	Low (Low)	Maintain (Maintain)	More certain in maintain (More certain in maintain)		Yes
	HOCI_21 Subtidal sands and gravels	Low (Low)	Maintain (Maintain)	More certain in maintain (More certain in maintain)		Yes
	A5.3 Subtidal mud	Low (*)	Maintain (*)	More certain in maintain (*)		No*
	A5.4 Subtidal mixed sediments	Low (*)	Maintain (*)	More certain in maintain (*)		No*
	HOCI_18 Sea-pens & burrowing megafauna	Low (*)	Maintain (*)	More certain in maintain (*)		No*

The blue text represents the 2012 assessment score.

\* These Features are recently identified and added to our advice; therefore they have no score from a past assessment.

Following Protocol F<sup>32</sup>, low confidence in Feature condition accompanies the setting of any objective set through the vulnerability assessment approach unless further criteria are satisfied which is not the case here. JNCC therefore advises **Low** confidence in condition for all Features, including those newly identified, in North East of Farnes Deep pMCZ.

Three new Features were identified within the site following the 2012 survey. While HOCI\_18 **Sea-pens and burrowing megafauna** may be more sensitive to certain pressures than A5.3 **Subtidal mud**, the HOCI will be subject to the same exposure to pressures as A5.3 **Subtidal mud** given that both Features have been mapped with the same Feature extent. Given that the Feature A5.3 **Subtidal mud** was assessed as not exposed to any pressure above the benchmark, a **Maintain** objective was assigned to HOCI\_18 **Sea-pens and burrowing megafauna**.

There are no activities occurring on or near the site which we regard as impairing the Feature's condition and therefore we advise that the three new Features (A5.3 **Subtidal mud**, A5.4 **Subtidal mixed sediment** and HOCI\_18 **Sea-pens and burrowing megafauna**) are assigned **Maintain** Conservation Objectives.

### 7.3.3 Assessment of certainty in the appropriateness of Feature Conservation Objectives

There is no evidence available to indicate the condition of the Features of the site is impaired. Additionally, there is no evidence to suggest that these Features are currently at risk of any damage or disturbance from human activities. The multibeam bathymetry data acquired during the 2012 survey of the site recorded no

observations of human impacts or activities, aside from a few shipwrecks. We therefore advise we are **more certain in the Maintain objectives** for the Features in North East of Farnes Deep pMCZ.

#### 7.3.4 Site Risk

Following Protocol G<sup>32</sup>, JNCC assesses site risk to be very low (at **0%**) because all Features have a **Maintain** objective; as noted earlier, the site will not have zero risk as this is an anomaly of the risk calculation. Based on the information available, none of the Features in North East of Farnes Deep pMCZ are thought to be facing moderate or high risk of damage or deterioration from human activities. However, some risks are unquantifiable because there is not enough information available to assess the Features' vulnerability to some pressures, e.g. pressures associated with climate change.

Fishing **VMS** data (2006-9) indicates that there are currently extremely low levels of demersal trawling activity occurring in the pMCZ. These levels are so low as to likely be an artefact of data processing and may well not represent fishing effort. Effort values across the site of 2 to 4 hours cumulative over a three year period were typically recorded with one gridded cell up to 18 hours effort. However, should demersal trawling effort increase over the site, the risk of damage or deterioration to the Features would also be expected to increase. It should also be noted that the HOCl\_18 **Sea-pens and burrowing megafauna** are particularly susceptible to a single damaging event.

Similarly, should the inactive cable which overlaps the site be decommissioned or recommissioned, the pressures associated with this activity may also present an increased risk of damage or deterioration to the Features.

## 7.4 South-West Deeps (West) pMCZ

South-West Deeps (West) pMCZ was recommended by the Finding Sanctuary regional MCZ project for the Features A5.1 **Subtidal coarse sediment**, A5.2 **Subtidal sand**, A5.4 **Subtidal mixed sediments** and the geological feature **Celtic Sea Relict Sandbanks**. Defra did not propose A5.1 **Subtidal coarse sediment** and A5.4 **Subtidal mixed sediments** Features for designation in 2013<sup>19</sup>.

### 7.4.1 Assessment of Feature Presence and Feature Extent

A summary of the results of the assessment of Feature presence and Feature extent following Technical Protocol E and accompanying guidance is presented below in [Table 9](#). The data and assessment can be viewed in full in [Annex 4](#), [Tables 22](#) and [23](#).

**Table 9: South-West Deeps (West) pMCZ Evidence Assessment Summary**

Site (code)	Feature (code)	Evidence Assessment Results				2013 Tranche Feature
		Confidence in presence	Rationale for confidence in Feature presence	Confidence in extent	Rational for confidence in Feature extent	
South-West Deeps (West) (FS 02)	Subtidal coarse sediment (A5.1)	High <i>(Mod)</i>	The presence of A5.1 Subtidal coarse sediment is supported by interpreted ground-truthing data with more than 90% agreement.	Low <i>(Low)</i>	Sample data covers more than 50% of A5.1 Subtidal coarse sediment. However, our confidence in the extent of A5.1 Subtidal coarse sediment is reduced due to the limited number of sample points and so using expert judgement and the precautionary approach JNCC have assessed our confidence in feature extent as Low.	No
	Subtidal sand (A5.2)	High <i>(Mod)</i>	The presence of A5.2 Subtidal sand is supported by interpreted ground-truthing data with more than 90% agreement.	Mod <i>(Mod)</i>	Sample data covers more than 50% of A5.2 Subtidal sand but confidence has been set as Moderate rather than High as the spatial accuracy of the sample points used to determine the extent of the feature is not known.	Yes
	Subtidal mixed sediments (A5.4)	Mod <i>(Mod)</i>	The presence of A5.4 Subtidal mixed sediments is supported by interpreted ground-truthing data with more than 90% agreement. However, there are only two points validating the presence of the feature so the confidence is judged to be moderate (see Protocol E guidance).	Low <i>(Low)</i>	Sample data covers more than 50% of A5.4 Subtidal mixed sediments. However, our confidence in the extent of A5.4 Subtidal mixed sediments is reduced due to the limited number of data points.	No
	Celtic Sea Relict Sandbanks	High <i>(High)</i>	Confidence in morphology is a direct parallel of confidence in the presence of a geo-feature and morphological confidence in maps is generally high.	High <i>(High)</i>	Confidence in morphology is a direct parallel of confidence in the presence of a geo-feature and morphological confidence in maps is generally high.	Yes

The blue text represents the 2012 assessment score.

For the full original 2012 assessment, see page 341 of the JNCC and NE advice (as amended): [MCZ Advice Amendments Report 2012](#)

No new data are available for South-West Deeps (West) pMCZ. The 2012 assessment was conducted on the UKSeaMap<sup>37</sup> modelled habitat and available point data from British Geological Survey (BGS) sediment sample database and these remain the best-available evidence for Feature presence and Feature extent in the site. However, following a review of the previous assessment of confidence in the presence of A5.1 **Subtidal coarse sediment** and A5.2 **Subtidal sand** with the site, these confidence scores have increased

to **High**. Previously on page 58 our Amendments Report<sup>36</sup> published in December 2012, we stated that 'levels of confidence were lowered when the only supporting data source available had no QA information associated with it'. For the sediment sample data which underpins the confidence in both A5.1 and A5.2, there were ongoing QA checks within BGS to ensure the survey information of the data that it had provided were accurate and thus JNCC assigned Moderate confidence to A5.1 and A5.2 in 2012 as a precautionary measure. For the assessment in 2013, BGS have confirmed that the QA of the survey information is complete for the South-West Deep (West) pMCZ data and it resulted in no changes to that data. Consequently, our confidence in the presence of A5.1 **Subtidal coarse sediment** and A5.2 **Subtidal sand** has reverted to **High**, following Protocol E<sup>32</sup> and accompanying guidance<sup>35</sup>.

In the July 2012 advice, JNCC advised that the Features A5.1 **Subtidal coarse sediment** and A5.4 **Subtidal mixed sediments**, recommended by Finding Sanctuary, should also be listed for designation. These Features were not put forward for designation in Tranche One. JNCC's 2012 advice remains unchanged and we recommend the inclusion of these Features in the designation of South-West Deep (West) pMCZ.

A review of available data did not show the presence of Species FOCI within South-West Deep (West) pMCZ.

#### 7.4.2 Advice on draft Conservation Objectives

**Recover** objectives were recommended by the Finding Sanctuary regional project for the Features A5.1 **Subtidal coarse sediments**, A5.2 **Subtidal sand** and A5.4 **Subtidal mixed sediments**. JNCC advised in our 2012 assessment that these Conservation Objectives were appropriate and our view remains unchanged after a review of newly available data in 2013 (see [Table 1](#)). A summary of the 2012 assessments is presented in [Table 10](#).

For all geological and geomorphological features, such as the **Celtic Sea Relict Sandbanks** the default Conservation Objective is set to **Maintain** and confidence in Feature condition is by default high for relict geomorphological and geological features (see [Section 6.3](#) for further details).



**Table 10: Summary of the review of conservation advice for Features in South-West Deep (West) pMCZ**

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F)	CO advised (MCZ Conservation Objective Guidance)	Certainty in CO (MCZ Technical Protocol I)	Site Risk (MCZ Technical Protocol G)	2013 Tranche Feature
South-West Deep (West) (FS 02)	A5.1 Subtidal coarse sediment	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	More certain in recover ( <i>More certain in recover</i> )	75% ( <i>75%</i> ) Note - 100% if geological feature is removed from the calculation	No
	A5.2 Subtidal sand	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	More certain in recover ( <i>More certain in recover</i> )		Yes
	A5.4 Subtidal mixed sediments	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	Less certain in recover ( <i>Less certain in recover</i> )		No
	Celtic Sea Relict Sandbanks	High ( <i>High</i> )	Maintain ( <i>Maintain</i> )	More certain in maintain ( <i>More certain in maintain</i> )		Yes

The blue text represents the 2012 assessment score.

Following Protocol F<sup>32</sup>, JNCC advises that confidence in the condition of the **Celtic Sea Relict Sandbanks** geological Feature is **High** reflecting the high confidence in the extent of this Feature. However for all non-geological Features, JNCC advises **Low** confidence in Feature condition as low confidence in Feature condition accompanies the setting of any objective set through the vulnerability assessment approach unless further criteria are satisfied which is not the case here.

JNCC completed an acoustic survey on this site in 2012 that was subsequently ground-truthed in May 2013 under the MB0120 contract<sup>22</sup>. The interpreted results were not available for this assessment and thus the condition of the site Features will be reviewed in due course.

In our 2012 assessment, JNCC advised **Recover** objectives for the Features A5.1 **Subtidal coarse sediment**, A5.2 **Subtidal sand** and A5.4 **Subtidal mixed sediments** as they were considered to be moderately or highly vulnerable to pressures associated with demersal trawling. Our assessment of condition remains unchanged as there are no new data available to support an assessment of condition in 2013, and no new activities are known to be taking place on or near this site which may impact the condition of the Features.

Full detail of JNCC's 2012 advice relating to these Features can be found in the 2012 Advice document in Annex 7, Table 222 pages 1186-1187<sup>20</sup>.

### 7.4.3 Assessment of certainty in the appropriateness of Feature Conservation Objectives

A5.1 **Subtidal coarse sediment** and A5.2 **Subtidal sand** are known to be exposed to demersal trawling which are potentially damaging to these Broad-Scale Habitat Features; see pages 29 and 33<sup>42</sup>. We currently do not have information on in-situ community composition which could refine our assessment of Feature sensitivity. For South West Deep (West) pMCZ, our certainty in the objectives for these Features is based on a judgement of the stability of the sediment. As much of these Features occur at depths around 100m, this would suggest that a more physically stable environment prevails since it is likely to be beyond

the influence of wind-driven currents (see wave-base models in UKSeaMap<sup>37</sup>). JNCC and NE<sup>20</sup> present the evidence describing the likely effect of demersal fishing on stable environments; see pages 29 and 30. The communities present may therefore be more fragile and slower to recover than those in shallower environments which are subject to greater natural disturbance. JNCC are therefore **more certain the Recover objective** for this Feature is appropriate.

Unfortunately, there is limited research on A5.4 **Subtidal mixed sediments'** sensitivity to pressures associated with fishing activities and therefore the scores in the MB0102 sensitivity matrix<sup>39</sup> had low confidence. JNCC and NE<sup>20</sup> set out the evidence describing the impact of demersal fishing activity on A5.4 **Subtidal mixed sediments**. There are limited data on the nature of or distribution of sub-habitats within the Feature in South-West Deeps (West) pMCZ. Due to such uncertainty in sensitivity information for A5.4 **Subtidal mixed sediments**, JNCC are **less certain the Recover objective** is appropriate for this Feature.

Following Protocol I<sup>32</sup>, more certainty accompanies a Conservation Objective where confidence in Feature condition is high, as is the case with the **Celtic Sea Relict Sandbanks**. JNCC is **more certain in the Maintain objective** for the **Celtic Sea Relict Sandbanks** Feature in South-West Deeps (West) pMCZ.

#### 7.4.4 Site Risk

Following Protocol G<sup>32</sup>, JNCC considers that South-West Deeps (West) pMCZ is at higher risk of damage or deterioration as all the non-geological Features of South-West Deeps (West) pMCZ have a **Recover** objective. Site risk would be very high (**100%**) for the ecological Features if such an approach were allowed within the protocol. Including the **Celtic Sea Relict Sandbanks'** default **Maintain** objective in the calculation as set out in the protocol gives a site risk of moderate (**75%**). All non-geological Features have been assigned **Recover** objectives because they are considered likely to be in unfavourable condition. All the non-geological Features are considered at risk of damage or deterioration from demersal trawling.

## 7.5 Swallow Sand pMCZ

Swallow Sand pMCZ was recommended by the Net Gain regional MCZ project for the Broad-Scale Habitats A5.1 **Subtidal coarse sediment**, A5.2 **Subtidal sand**, the HOCI\_21 **Subtidal sands and gravels**, and the geological Feature **North Sea glacial tunnel valleys (Swallow Hole)**. Defra did not propose A5.2 **Subtidal sand** for designation in 2013<sup>20</sup>.

### 7.5.1 Assessment of Feature Presence and Feature Extent

The 2013 assessment was conducted using UKSeaMap<sup>37</sup> modelled habitat and recent ground-truthing data from MB0120<sup>22</sup> which are the best-available evidence for Feature presence and Feature extent. A summary of the results of the assessment is presented below in [Table 11](#). The data and assessment can be viewed in [Annex 4](#), [Tables 24](#) and [25](#).

**Table 11: Swallow Sand pMCZ Evidence Assessment Summary**

Site (code)	Feature (code)	Evidence Assessment Results				2013 Tranche Feature
		Confidence in presence	Rationale for confidence in Feature presence	Confidence in extent	Rational for confidence in Feature extent	
Swallow Sand (NG 16)	A5.1 Subtidal coarse sediment	High (Mod)	Presence of A5.1 Subtidal coarse sediment supported by multiple ground-truthing records (more than five) >90% agreement with the parent Feature EUNIS A5 Sublittoral sediment.	Mod (Mod)	Sample data well distributed across >50% of the recommended extent of A5.1 Subtidal coarse sediment. However based on expert judgement we have retained a moderate score because, the percentage agreement across the Feature is <90%. There is >90% agreement of the parent Feature across the site.	Yes
	A5.2 Subtidal sand	High (High)	Presence of A5.2 Subtidal sand supported by multiple ground-truthing records, >50% agreement across records for EUNIS A5.2 Subtidal sand and >90% agreement with the parent EUNIS A5 Sublittoral sediment. Confidence in presence remains high. This is to account for the fact that there is a high ratio of video tow data points (across only two stations) compared to the grab data points. The latter are more evenly spaced across the site and therefore collectively are more representative of the presence of sand site. If the video tow data were aggregated within each of the two stations, the % agreement would increase to 89%.	High (High)	Sample data well distributed across >50% of the recommended extent of EUNIS A5.2 Subtidal sand.	No
	HOCI_21 Subtidal sands and gravels	High (High)	Presence of HOCI_21 Subtidal sands and gravels supported by multiple ground-truthing records >50% agreement across records for HOCI_21 Subtidal sands and gravels. This would result in a Moderate confidence score because of the conflicting data reflected in the percent agreement in A5.1 Subtidal coarse sediment. However, expert judgement was applied and we have high confidence in the presence of the feature due to the high confidence in the presence of A5.2 Subtidal sand.	High (High)	Sample data well distributed across >50% of the recommended extent of HOCI_21 Subtidal sands and gravels.	Yes
	North Sea glacial tunnel valleys (Swallow hole)	High (High)	Confidence in morphology is a direct parallel of confidence in the presence of a geo-feature and morphological confidence in maps is generally high.	High (High)	Confidence in morphology is a direct parallel of confidence in the presence of a geo-feature and morphological confidence in maps is generally high.	Yes

The blue text represents the 2012 assessment score.

For the full original 2012 assessment, see page 434 of the JNCC and NE advice (as amended): [MCZ Advice Amendments Report 2012](#).

An MCZ verification survey was completed for Swallow Sand pMCZ in 2012 as part of MB0120<sup>22</sup> to collect new data for the site. A5.2 **Subtidal sand** sample points verify the presence and extent of the Feature and

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broadly match the UKSeaMap<sup>37</sup> modelled habitat distribution of A5.2 **Subtidal sand**. A5.1 **Subtidal coarse sediment** is now assigned **High** confidence in Feature presence in accordance with the guidance on the application of Protocol E<sup>32</sup> based on ground-truth information confirming presence. The ground-truth data points for Swallow Sand pMCZ from both older survey data (see 2012 assessment<sup>20</sup>) and the recently collected MB0120<sup>22</sup> data verify the presence of A5.1 **Subtidal coarse sediment**, A5.2 **Subtidal sand**, A5.3 **Subtidal mud** and A5.4 **Subtidal mixed sediments**.

Following our analyses, JNCC advises that the previous recommendations for HOCI\_21 **Subtidal sands and gravels** should not go forward separately for designation in 2013<sup>38</sup>. The definition of this HOCI is very broad and effectively contains the Broad-Scale Habitats A5.1 **Subtidal coarse sediment** and A5.2 **Subtidal sand**. Protecting the constituent Broad-Scale Habitat will therefore protect the HOCI by default. While HOCI\_21 **Subtidal sands and gravels** was proposed for designation in 2013 by Defra, JNCC recommends it is not taken forward and instead A5.2 **Subtidal sand**, for which we have **High** confidence in Feature presence and **High** confidence in Feature extent, is designated as a Feature of the site. Such a change will still ensure protection of HOCI\_21 **Subtidal sands and gravels** by default.

JNCC reviewed available taxon data and noted the presence of **Ocean quahog (*Arctica islandica*)** Species FOCI within Swallow Sand pMCZ from six surveys between 2000 and 2012. 35 samples were found during the MB0120 JNCC/Cefas MCZ site verification survey in 2012 (report not yet published)<sup>22</sup>. Species presence is clearly supported by multiple records at one or more locations. Given the high number of data points less than six years old, confidence in this Feature's presence is **High**.

## 7.5.2 Advice on draft Conservation Objectives

Net Gain regional project set **Maintain** Conservation Objectives for the Features A5.1 **Subtidal coarse sediment** and **North Sea glacial tunnel valleys** (Swallow Hole). JNCC advised in our 2012 assessment<sup>20</sup> that these Conservation Objectives were appropriate. After the review of newly available data (see [Table 1](#)) our view remains unchanged in 2013.

In July 2012, JNCC advised that the Features A5.2 **Subtidal sand** and HOCI\_21 **Subtidal sands and gravels**, recommended by NG, should be assigned a **Recover** objective. Our advice remains unchanged in 2013.

**Table 12: Summary of the review of conservation advice for Features in Swallow Sand pMCZ**

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F)	CO advised (MCZ Conservation Objective Guidance)	Certainty in CO (MCZ Technical Protocol I)	Site Risk (MCZ Technical Protocol G)	2013 Tranche Feature
Swallow Sand (NG 16)	A5.1 Subtidal coarse sediment	Low ( <i>Low</i> )	Maintain ( <i>Maintain</i> )	Less certain in maintain ( <i>Less certain in maintain</i> )	50% ( <i>50%</i> ) Note - 66% if geological feature is removed from the calculation	Yes
	A5.2 Subtidal sand	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	Less certain in recover ( <i>Less certain in recover</i> )		No
	HOCI_21 Subtidal sands and gravels	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	Less certain in recover ( <i>Less certain in recover</i> )		Yes
	North Sea glacial tunnel valleys (Swallow hole)	High ( <i>High</i> )	Maintain ( <i>Maintain</i> )	More certain in maintain ( <i>More certain in maintain</i> )		Yes

The blue text represents the 2012 assessment score.

Following Technical Protocol F<sup>32</sup>, JNCC advises that confidence in the condition of the **North Sea glacial tunnel valleys (Swallow Hole)** geological Feature is **High** reflecting the high confidence in the extent of this Feature. However for all ecological Features, JNCC advises **Low** confidence in Feature condition as any objective set through the vulnerability assessment approach defaults to low unless further criteria are satisfied which is not the case here.

There have been additional ground-truthing data collected by a MCZ site verification survey in 2012 (MB0120<sup>22</sup>), although no new habitat map is currently available to inform this present advice in 2013. JNCC is unable to complete a new vulnerability assessment for this site until the 2012 data and revised habitat maps are available.

The Features recommended by Net Gain were assessed for their vulnerability and subsequent likely condition in our 2012 assessment. A check of updated activities data in 2013 has not revealed any new activities occurring on or near the Features, and so the assessments of Feature condition and the conservation objectives do not require revision.

The Crown Estate identified three inactive cables in the site in their consultation response, which had not been considered in the Net Gain final recommendations or by JNCC in our 2012 advice. While there may be pressures associated with future activity in relation to these cables, there is no indication of such activities at present and so there is no amendment to the 2012 assessment for the Features in this site.

Further information on the vulnerability assessment for the Swallow Sand pMCZ site Features can be found in the 2012 Advice document in Annex 7 pages 1220 - 1225.

### 7.5.3 Assessment of certainty in the appropriateness of Feature Conservation Objectives

The Feature HOCI\_21 **Subtidal sands and gravels** shares the same distribution as the A5.2 **Subtidal sand** Feature within this site. There is clear evidence demonstrating fishing activity impacts these Features; see page 46<sup>42</sup>. There is evidence to indicate that the Broad-Scale Habitat within the site are relatively stable; for example **Ocean quahog (*Arctica islandica*)**, a very long-lived, sessile species, is present throughout the site. However, JNCC are uncertain that **Recover** objective is appropriate because the spatial coverage of the fishing effort within the site is relatively limited in relation to the large area of the Features. Therefore, JNCC is **less certain in any objective** for these Features on the basis of the evidence currently available. JNCC recognise that for these Features, differential management may be required owing to the variation in current levels of fishing activity across the site.

Confidence in the condition of A5.1 **Subtidal coarse sediment** is **Low** and confidence in its extent is **Moderate**. JNCC and NE<sup>42</sup> set out the evidence describing the impact of demersal fishing activity on A5.1 **Subtidal coarse sediment**. Our certainty in a Conservation Objective for this Feature depends on knowledge about the Feature's stability, and we have no further information regarding Feature stability. JNCC is **less certain in the Maintain objective** for this Feature.

Following Protocol I<sup>32</sup>, more certainty accompanies a Conservation Objective where confidence in Feature condition is high. Therefore, JNCC is **more certain in the Maintain objective** for the **North Sea glacial tunnel valleys (Swallow Hole)**.

### 7.5.4 Site Risk

Following Protocol G<sup>32</sup>, JNCC considers that the site risk for Swallow Sand pMCZ is moderate (**50%**) because two of the four Features within the site were assigned **Recover** objectives, reflecting moderate or high vulnerability to pressures associated with demersal trawling. Site risk is higher (**66%**) for the ecological Features if the **North Sea glacial tunnel valleys (Swallow Hole)** geological Feature is removed from the site risk calculation (see [Section 6.5](#)).

Should demersal trawling effort increase over the site, the risk of damage or deterioration to the Features would be expected to increase. For A5.1 **Subtidal coarse sediment** this would require a review of the **Maintain** Conservation Objective. Similarly, should the inactive cables that overlap the site be decommissioned or recommissioned, the pressures associated with such activity may also increase risk of damage or deterioration to the Features and would trigger a review of the Features' Conservation Objective.

## 7.6 The Canyons pMCZ

The Canyons pMCZ was recommended by the Finding Sanctuary regional MCZ project for the Features A5.1 **Subtidal coarse sediment**, A5.2 **Subtidal sand**, A6 **Deep-sea bed** and the HOCI\_2 **Cold-water coral reefs**. Defra did not put forward A5.1 **Subtidal coarse sediment** and A5.2 **Subtidal sand** for designation in 2013<sup>19</sup> and these Features are no longer being considered for designation within the site (see Annex A1 Part 2.1<sup>19</sup>).

### 7.6.1 Assessment of Feature Presence and Feature Extent

JNCC conducted the 2013 assessment on the UKSeaMap modelled habitat distribution<sup>37</sup>, a MESH habitat map from survey and available ground-truthing, which are currently the best-available evidence for Feature presence and Feature extent. No new data were available for The Canyons pMCZ in 2013, so no new assessments of confidence were conducted and therefore the scores remain unchanged from 2012. A summary of the results of the assessment of Feature presence and Feature extent following Protocol E<sup>32</sup> and accompanying guidance is presented below in [Table 13](#). The data and assessment can be viewed in full assessment can be found in [Annex 4](#), [Tables 26](#) and [27](#).

**Table 13: The Canyons pMCZ Evidence Assessment Summary**

Site (code)	Feature (code)	Evidence Assessment Results				2013 Tranche Feature
		Confidence in presence	Rationale for confidence in Feature presence	Confidence in extent	Rational for confidence in Feature extent	
The Canyons (FS 01)	A5.1 Subtidal coarse sediment	Low (Low)	Only modelled data available	Low (Low)	Only modelled data available	No
	A5.2 Subtidal sand	Low (Low)	Only modelled data available	Low (Low)	Only modelled data available	No
	A6 Deep-sea bed	High (High)	The MESH South-West Approaches Canyons habitat map is based on survey data, including acoustic and biological ground-truthing, and has a confidence score >58%. The polygon for Broad-Scale Habitat A6 Deep-seabed contains biological validation samples.	High (High)	The MESH South-West Approaches Canyons habitat map covers more than 50% of the recommended location for the EUNIS broad-scale habitat A6 Deep-sea bed, with the remainder of the feature covered by UKSeaMap 2010. The extent of EUNIS broad-scale habitat A6 Deep-sea bed is defined solely by the bathymetry which there is good data for.	Yes
	HOCI_2 Cold-water coral reefs	High (High)	The MESH South-West Approaches Canyons habitat map is based on survey data, including acoustic and biological ground-truthing, and has a confidence score >58%. Polygons for the habitat FOCI cold-water coral reefs contain biological validation samples.	High (High)	The MESH South-West Approaches Canyons habitat map covers 100% of the recommended location for the habitat FOCI Cold-water coral reefs.	Yes

The blue text represents the 2012 assessment score

For the full original 2012 assessment, see page 344 the JNCC and NE advice (as amended): [MCZ Advice Amendments Report 2012](#)

With only modelled data to confirm the presence and extent of A5.1 **Subtidal coarse sediment** and A5.2 **Subtidal sand**, and no new data for the site since the advice in 2012, the confidence scores for Feature presence and Feature extent remain as **Low**. Our confidence in Feature presence and Feature extent for both A6 **Deep-sea bed** and HOCI\_2 **Cold-water coral reefs** both remain **High** in 2013.



JNCC reviewed available taxon data and noted the presence of **Native Oyster (*Ostrea edulis*)** Species FOCI within The Canyons pMCZ at two separate locations, recorded during CEFAS Celtic Sea 2m beam trawl surveys between 2000 and 2002. Since the dataset provides a range of dates, JNCC adopted a conservative approach by assigning the year to 2000 for these records. Following Protocol E<sup>32</sup> our confidence in Feature presence is **Low**.

## 7.6.2 Advice on draft Conservation Objectives

**Recover** objectives were recommended by the Finding Sanctuary regional project for the Features A6 **Deep-sea bed** and HOCI\_2 **Cold-water coral reefs**. JNCC advised that these Conservation Objectives were appropriate in our 2012 assessment<sup>20</sup> and after a review of newly available data (see [Table 1](#)), our view remains unchanged in 2013. A summary of the 2012 assessments is presented in [Table 14](#).

In 2012, JNCC advised that the Features A5.1 **Subtidal coarse sediment** and A5.2 **Subtidal sand** should not be listed for designation in the future. We highlighted that it may not be possible to set Conservation Objectives for these two Features as they only cover very small areas of the seafloor within the site boundary. No additional evidence is available and so our advice in 2013 remains unchanged that we do not recommend these Features progress to designation.

**Table 14: Summary of the review of conservation advice for Features in The Canyons pMCZ**

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F)	CO advised (MCZ Conservation Objective Guidance)	Certainty in CO (MCZ Technical Protocol I)	Site Risk (MCZ Technical Protocol G)	2013 Tranche Feature
The Canyons (FS 01)	A5.1 Subtidal coarse sediment	Low ( <i>Low</i> )	Not possible, see 2012 advice <sup>33</sup>		100% ( <i>100%</i> )	No
	A5.2 Subtidal sand	Low ( <i>Low</i> )				No
	A6 Deep-sea bed	Low ( <i>Low</i> )	Recover ( <i>Recover</i> )	More certain in recover ( <i>More certain in recover</i> )		Yes
	HOCI_2 Cold-water coral reefs	High ( <i>High</i> )	Recover ( <i>Recover</i> )	More certain in recover ( <i>More certain in recover</i> )		Yes

The blue text represents the 2012 assessment score

Following Protocol F<sup>32</sup>, JNCC has **High** confidence in the condition of the HOCI\_2 **Cold-water coral reef** and **Low** confidence in the condition of A6 **Deep sea bed**. Our advice is unchanged from our 2012 assessments<sup>20</sup> as no new data have become available to justify any revision.

## 7.6.3 Assessment of certainty in the appropriateness of Feature Conservation Objectives

Following Protocol I<sup>32</sup>, more certainty accompanies a Conservation Objective where confidence in Feature condition is **High**, as is the case with HOCI\_2 **Cold-water coral reefs**. JNCC is **more certain the Recover objective** for this Feature is appropriate.

Survey results show that A6 **Deep-sea bed** contains sub-habitats A6.5 **Deep-sea mud** and HOCl\_2 **Cold water coral reefs** for which MB0102 sensitivity matrix<sup>39</sup> indicates are highly sensitivity to pressures associated with demersal trawling; there is moderate or high confidence in the sensitivity rating. There is good evidence that the demersal trawling activity occurring over the Feature is potentially damaging these sub-habitat types; see pages 46 and 50<sup>42</sup>. In addition, the sub-features within the Broad-Scale Habitat Feature are unlikely to experience high levels of natural physical disturbance by wave action by virtue of the deep water in which they occur. Taking these points into consideration, JNCC is **more certain the Recover objective** is appropriate for this Feature.

#### 7.6.4 Site Risk

Following Protocol G<sup>32</sup>, JNCC considers that The Canyons pMCZ has very high risk of damage or deterioration (**100%**) by human activities as the two Features assessed have a **Recover** objective. The risk remains unchanged from our 2012 advice as there is no new evidence to indicate site risk should be revised.

There is strong evidence that HOCl\_2 **Cold-water coral reef** is severely damaged and is at considerable risk of further damage or deterioration from demersal trawling, shown to occur over the site from VMS data. It is at risk because it is highly sensitive to a range of pressures, many of which are associated with demersal trawling. These pressures include surface, shallow and structural abrasion and removal of non-target species.

## 8 Acronyms

Acronyms	Meaning
ABPmer	ABP Marine Environmental Research Ltd
BGS	British Geological Survey
Cefas	Centre for Environment, Fisheries and Aquaculture Science
COG	Conservation Objective Guidance
Defra	Department of Environment, Food & Rural Affairs
ENG	Ecological Network Guidance
EUNIS	European Nature Information System
FOCI	Feature of Conservation Importance
GPS	Global Positioning System
HOCI	Habitat Features of Conservation Importance
JNCC	Joint Nature Conservation Committee
MCAA	Marine and Coastal Access Act 2009
MCZ	Marine Conservation Zone
MESH	Mapping European Seabed Habitats
MMO	Marine Management Organisation
MNCR	Marine Nature Conservation Review
MPA	Marine Protected Area
NE	Natural England
pMCZ	The Marine Conservation Zones <i>proposed</i> for designation in the 2013 Tranche
PSA	Particular Size Analysis
QA	Quality Assurance
REC	Regional Environmental Characterisation
rMCZ	The 127 MCZs <i>recommended</i> by the regional projects
SAC	Special Area of Conservation
SAP	Science Advisory Panel
VMS	Vessel Monitoring System

## 9 References

- Anon, 2010.** Ecosystem concepts for sustainable bivalve mariculture. Committee on best practices for shellfish mariculture and the effects of commercial activities in Drakes Estero, Pt. Reyes National Seashore, California. ISBN: 0-309-14696-8, 190 pp. Downloaded from:  
<http://www.nap.edu/catalog/12802.html> [Accessed March 2011]
- Bergmann *et al.*, 2000.** Bergmann, M.J.N. and Van Santbrink, J.W. 2000. Fishing mortality and populations of megafauna in sandy sediments. In: Kaiser, M.J. and de Groot S.J. (eds.) Effects of fishing on non-target species and habitats. Blackwell, Oxford.
- Collie *et al.*, 2000.** Collie, J.S., Hall S.J., Kaiser, M.J., and Poiner, I.R. 2000 A quantitative analysis of fishing impacts on shelf-sea benthos. *Journal of Animal Ecology* 69 (5), 785–798.
- Collie *et al.*, 2005.** Collie, J.S., Hermesen, J.M., Valentine, P.C. and Almeida, F.P. 2005. Effects of fishing on gravel habitats: assessment and recovery of benthic megafauna on Georges Bank. American Fisheries Society Symposium. American Fisheries Society. 325pp.
- Davies *et al.*, 2004.** Davies, C.E. and Moss, D., 2004. EUNIS Habitat Classification Marine Habitat Types: Revised Classification and Criteria. C02492NEW. 2004. Centre for Ecology & Hydrology (CEH) Dorset  
<http://www.pom-habitat.eu/en/images/stories/dokumenty/jawne/eunis%20habitat%20classification%20marine%20habitat%20types.pdf> [Accessed May 2013]
- Davies *et al.*, 2007.** Davies, J., Guinan, J., Howell, K., Stewart, H. and Verling, E. 2007. MESH South West Approaches Canyons Survey Final Report (MESH Cruise 01-07-01) Available at:  
[http://www.searchmesh.net/PDF/SWCanyons\\_FinalReport\\_v1.4\\_final.pdf](http://www.searchmesh.net/PDF/SWCanyons_FinalReport_v1.4_final.pdf)
- Defra, 2009.** Accessing and developing the required biophysical datasets and data-layers for Marine Protected Areas network planning and wider marine spatial planning purposes. Report No 8 Task 2A. Mapping of Geological and Geomorphological Features. **MB0102** Marine Biodiversity R&D Programme. Available here: [http://randd.defra.gov.uk/Document.aspx?Document=mb0102\\_8589\\_TRP.pdf](http://randd.defra.gov.uk/Document.aspx?Document=mb0102_8589_TRP.pdf)
- Defra, 2012.** Marine Conservation Zones: Consultation on sites proposed for designation in 2013. Available from: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/82730/mcz-condoc-121213.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/82730/mcz-condoc-121213.pdf)
- Defra, 2013.** Defra R&D Data Collection Programme for recommended Marine Conservation Zones Defra Contract MB0120, Technical Report **MB0120**, London: Defra, 2013. Available from:  
<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18221&Fro>

[mSearch=Y&Publisher=1&SearchText=MB0120&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description](#)

**Defra, 2013.** MB0116 Final Project Report. Report to the Department of Environment, Food and Rural Affairs. Defra Contract No. **MB0116**. ABP Marine Environmental Research Ltd. Available from: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18125>

**Eggleton, J. and Downie, A. 2013.** East of Haig Fras rMCZ Post-survey Site Report 2013. Report Number 6. Version 8. Available from: [http://randd.defra.gov.uk/Document.aspx?Document=11017\\_EastHaigFrasrMCZ\\_SummarySiteReport\\_V8.pdf](http://randd.defra.gov.uk/Document.aspx?Document=11017_EastHaigFrasrMCZ_SummarySiteReport_V8.pdf)

**Engel and Kvitek, 1998.** Engel, J. and Kvitek, R. 1998. Effects of otter trawling on a benthic community in Monterey Bay National Marine Sanctuary. *Conservation Biology*, **12**: 1204–1214.

**Eno et al., 1996.** Eno, N.C., MacDonald, D. and Amos, S.C. 1996. A study on the effects of fish (Crustacea/Molluscs) traps on benthic habitats and species. Final report to the European Commission. Study Contract, no. 94/076.

**Fletcher et al., 2012.** Fletcher, S. J. Saunders, R., Herbert, C. Roberts, and Dawson, K.. Descriptions of the ecosystem services provided by broadscale habitats and features of conservation importance that are likely to be protected by Marine Protected Areas in the Marine Conservation Zone Project area. Natural England Commissioned Reports, Number 088, Sheffield: Natural England, 2012.

**Foden et al., 2010.** Foden, J., Rogers, S.I. and Jones, A.P. 2010. Recovery of UK seabed habitats from benthic fishing and aggregate extraction- towards a cumulative impact assessment. *Marine Ecology Progress Series*, **411**: 259–270.

**Fosså et al., 2000.** Fosså, J.H., Mortensen P. B. and Furevik, D.M. 2000. Lopheliakorallrev langs norskekysten. Forekomst og tilstand (*Lophelia* coral reefs in Norway. Distribution and effects of fishing) Fisken og Havet, No 2. 94 pp. (in Norwegian with abstract and legends to tables and figures in English).

**Fosså et al., 2002.** Fosså, J.H., Mortensen, P.B. and Furevik, D.M. 2002. The deep-water coral *Lophelia pertusa* in Norwegian waters: distribution and fishery impacts. *Hydrobiologia*, **471**: 1–12

**Freese et al., 1999.** Freese, L., Auster, P.J., Heifetz, J. and Wing, B.L. 1999. Effects of trawling on seafloor habitat and associated invertebrate taxa in the Gulf of Alaska. *Marine Ecology Progress Series*, **182**: 119–126

**Gafeira et al., 2010.** Gafeira, J., Green S., Dove, D., Morando, A., Cooper, R., Long, D. and Gatliff, R. W., 2010 Developing the necessary data layers for Marine Conservation Zone selection - Distribution of rock/hard substrate on the UK Continental Shelf. MB0103 Final Report. Available from: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16370>

**Graham-Bryce. 2011** Independent review of the evidence process for selecting marine special areas of Conservation. July 2011. Report to Defra. Available from: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/69445/pb13598-graham-bryce-independent-review-marine-sacs-110713.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69445/pb13598-graham-bryce-independent-review-marine-sacs-110713.pdf)

**Hall et al., 2008.** Hall, K., Paramor, O.A.L., Robinson L.A., Winrow-Giffin, A., Frid C.L.J., Eno, N.C., Dernie, K.M., Sharp, R.A.M., Wyn, G.C. and Ramsay, K. 2008. Mapping the sensitivity of benthic habitats to fishing in Welsh waters- development of a protocol. CCW [Policy Research] Report No: [8/12], 85pp Available from: <http://www.ccw.gov.uk/idoc.ashx?docid=81dace10-269b-4a57-b721-0481acf4f58a&version=-1&lang=en>

**Hall-Spencer et al., 2002.** Hall-Spencer, J., Allain, V. and Fosså, J.H. 2002. Trawling damage to Northeast Atlantic ancient coral reefs. *Proceedings of the Royal Society, London B*, **269**: 507–511

**Hinz et al., 2011.** Hinz, H., Tarrant, D., Ridgeway, A., Kaiser, M.J. and Hiddink, J.G. 2011. Effects of scallop dredging on temperate reef fauna. *Marine Ecology Progress Series* 432, 91–102

**JNCC, 2010.** JNCC (2010) Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection. Available from: <http://jncc.defra.gov.uk/page-3365>

**JNCC & Natural England, 2011.** Advice from the Joint Nature Conservation Committee and Natural England with regard to fisheries impacts on Marine Conservation Zone habitat features. Available from: <http://jncc.defra.gov.uk/page-4884>

**JNCC & Natural England 2011.** JNCC & Natural England **Conservation Objective Guidance**. August, 2011. Available from: [http://jncc.defra.gov.uk/pdf/MCZ%20Project%20Conservation%20Objective%20Guidance\\_v2.pdf](http://jncc.defra.gov.uk/pdf/MCZ%20Project%20Conservation%20Objective%20Guidance_v2.pdf)

**JNCC & Natural England, 2012a.** JNCC and Natural England's Advice to Defra on recommended Marine Conservation Zones. Available from: <http://jncc.defra.gov.uk/PDF/MCZProjectSNCBAdviceBookmarked.pdf>

**JNCC & Natural England, 2012b.** JNCC and Natural England's advice on recommended Marine Conservation Zones - **Amendments Report**: December, 2012. Available from: [http://jncc.defra.gov.uk/PDF/MCZAdvice\\_AmendmentsReport\\_v2FULL.pdf](http://jncc.defra.gov.uk/PDF/MCZAdvice_AmendmentsReport_v2FULL.pdf)

**JNCC & Natural England, 2012c.** SNCB MCZ Advice Project **Technical Protocol E** –Assessing the scientific confidence in the presence and extent of features in recommended Marine Conservation Zones. Available from:

[http://jncc.defra.gov.uk/pdf/120111\\_SNCB%20MCZ%20Advice\\_Protocol\\_Feature%20Evidence%20V5.0.pdf](http://jncc.defra.gov.uk/pdf/120111_SNCB%20MCZ%20Advice_Protocol_Feature%20Evidence%20V5.0.pdf)

**JNCC & Natural England, 2012d.** SNCBs' MCZ Advice Project **Technical Protocol F** – Assessing scientific confidence of Feature condition. Available from:

[http://jncc.defra.gov.uk/pdf/120106\\_SNCBs%20MCZ%20Advice%20protocol%20F\\_confidence%20in%20feature%20condition\\_v5%200\\_FINAL.pdf](http://jncc.defra.gov.uk/pdf/120106_SNCBs%20MCZ%20Advice%20protocol%20F_confidence%20in%20feature%20condition_v5%200_FINAL.pdf)

**JNCC and Natural England, 2012e.** SNCB MCZ Advice Project **Technical Protocol G** – Assessing risk to recommended Marine Conservation Zones. Available from: [http://jncc.defra.gov.uk/pdf/protocol-G\\_tcm6-28393.pdf](http://jncc.defra.gov.uk/pdf/protocol-G_tcm6-28393.pdf)

**JNCC & Natural England, 2013a.** SNCBs' MCZ Advice Project **Technical Protocol I** – Assessing certainty in the appropriateness of conservation objectives. Available from:

[http://jncc.defra.gov.uk/pdf/080413\\_SNCBs%20MCZ%20Advice%20Protocol%20I\\_certainty%20in%20conservation%20objectives\\_v2.0.pdf](http://jncc.defra.gov.uk/pdf/080413_SNCBs%20MCZ%20Advice%20Protocol%20I_certainty%20in%20conservation%20objectives_v2.0.pdf)

**JNCC & Natural England, 2013b.** Guidance on aspects of the practical application of the Protocol E for MPA work. Assessing the scientific confidence in the presence and extent of features in proposed and recommended Marine Conservation Zones. Available from: <http://jncc.defra.gov.uk/page-5999>

**JNCC & Natural England, 2013c.** JNCC & Natural England's advice on recommended Marine Conservation Zones: Supplementary advice on the Marine Conservation Zone Feature of Conservation Importance **Subtidal sands and gravels**. Available from: <http://jncc.defra.gov.uk/page-6229>

**Kaiser et al., 2006.** Kaiser M.J., Clarke, K.R., Hinz, H., Austen, M.C.V., Somerfield P.J. and Karakassis, I. 2006. Global analysis of response and recovery of benthic biota to fishing. *Marine Ecology Progress Series*, **311**: 1–14.

**Løkkeborg, S. 2005.** Impacts of trawling and scallop dredging on benthic habitats and communities. FAO Fisheries Technical Paper. No. 472. Rome, FAO, 58pp.

**Murray et al., 2013.** Murray, J. Downie, A., Stephens, D. and Diesing, M. 2013. North East of Farnes Deep rMCZ Post-survey Site Report. Report Number 5. Version 6. Available from:

[http://randd.defra.gov.uk/Document.aspx?Document=11019\\_RockUniquerMCZ\\_SummarySiteReport\\_V6.pdf](http://randd.defra.gov.uk/Document.aspx?Document=11019_RockUniquerMCZ_SummarySiteReport_V6.pdf)



**Natural England & JNCC, 2010.** The Marine Conservation Zone Project: **Ecological Network Guidance**. Sheffield and Peterborough, UK: Natural England and JNCC, 2010. Available from: [http://jncc.defra.gov.uk/pdf/100705\\_ENG\\_v10.pdf](http://jncc.defra.gov.uk/pdf/100705_ENG_v10.pdf)

**Roberts *et al.*, 2010.** Roberts, C., Smith, C., Tillin, H. Tyler-Walters, H, 2010. Review of existing approaches to evaluate marine habitat vulnerability to commercial fishing activities. Environment Agency report No SC080016/R3 Available from: <http://cdn.environment-agency.gov.uk/scho1110bteq-e-e.pdf>

**Sciberras *et al.*, 2013.** Sciberras, M., Hinz, H., Bennell, J.D., Jenkins, S.R., Hawkins, S.J and Kaiser, M. J. 2013. Benthic community response to a scallop dredging closure within a dynamic seabed habitat. MEPS 480:83-98

**Tyler-Walters, H, 2008.** *Lophelia* reefs. Marine Life Information Network: Biology and Sensitivity Key Information Sub-programme [on-line]. Plymouth: Marine Biological Association of the United Kingdom. Available from: <http://www.marlin.ac.uk/habitatsensitivity.php?habitatid=294&code=1997> [Accessed June 2013]

# Annex 1: Summary of key documents contributing to the MCZ process

Date	Report	Link
2008	MB0102 contract – gathering/developing and accessing the data for the planning of a network of MCZs	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0102 Report]
2010	Ecological Network Guidance (ENG)	<a href="http://jncc.defra.gov.uk/page-4881">http://jncc.defra.gov.uk/page-4881</a> [Ecological Network Guidance]
2011	Conservation Objective Guidance (COG)	<a href="http://jncc.defra.gov.uk/page-4881">http://jncc.defra.gov.uk/page-4881</a> [Conservation Objective Guidance]
2011	Regional Project MCZ Recommendations	<a href="http://jncc.defra.gov.uk/page-6230">http://jncc.defra.gov.uk/page-6230</a>
2012	JNCC and NE Advice on Regional Project Recommendations	<a href="http://jncc.defra.gov.uk/page-6229">http://jncc.defra.gov.uk/page-6229</a> [JNCC and Natural England's Advice on recommended Marine Conservation Zones pdf]
2012	JNCC and NE Amendments Report	<a href="http://jncc.defra.gov.uk/page-6229">http://jncc.defra.gov.uk/page-6229</a> [JNCC and Natural England's advice on recommended Marine Conservation Zones - Amendments Report December 2012 pdf]
2012	MB0116 contract – external review of evidence underpinning MCZs	<a href="http://randd.defra.gov.uk">http://randd.defra.gov.uk</a> [MB0116 Report]
2013	MB0120 contract– R&D data collection programme for proposed MCZs	<a href="http://randd.defra.gov.uk">http://randd.defra.gov.uk</a> [MB0120 Report]
2011 - 2013	Technical MCZ Protocols A. Strategic protocol – the principles by which advice will be formulated B. Quality control, assurance and peer review C. Document style and format D. Audit trail – version control and record keeping E. Assessing the scientific certainty of sites and features F. Assessment of the scientific certainty of conservation objectives G. Assessment of the risk to features (not published at present) H. Assessing the contribution of existing sites to the network I. Assessing certainty in the appropriate of conservation objectives	<a href="http://jncc.defra.gov.uk/page-5999">http://jncc.defra.gov.uk/page-5999</a> [Technical Protocols]

## **Annex 2: Defra MB0116 contract note**

***How the findings of the contract MB0116, the 'In depth review of evidence supporting the recommended marine conservation zones' were considered in the 2013 JNCC advice on the Marine Conservation Zones in Tranche One.***

### **Introduction**

Defra commissioned a review of the MCZ evidence-base to build on and extend the work of the Regional MCZ Projects & JNCC/NE and to support the designation of MCZs. The project aimed to deliver a comprehensive review of the MCZ evidence and identify any new sources of evidence. The project only covered ecological features (as defined within the ENG) and provided opinions on the level of confidence in the data supporting the recommended MCZs. JNCC and NE provided a note on the final Report which was published alongside the MB0116 outputs<sup>21</sup>. The final Report found that the majority of the most relevant data sources had already been utilised by the Regional MCZ Projects. In the cases where the MB0116 contract identified new data sources not previously used in the assessment, the 'new data' were taken into consideration when updating the assessment of confidence in the presence and extent of features for the features in the MCZs in Tranche One.

### **Quality Assessment of data**

The MB0116 Report has been used in QA of the data used in JNCC's 2013 assessments. ABPMer applied QA to all data used in the MB0116 Report, conducting basic quality checks prior to acceptance within the project geo-database, and assessment for suitability as spatial data. The QA process is described in the MB0116 Report in Section 3, paragraphs 3.5 – 3.9<sup>21</sup>.

### **Method for cross-checking JNCC data sources with the data sources identified in the MB0116 Report**

Appendix J (entitled: Confidence Assessment Detailed Methodology Guidance) of the MB0116 Report refers to the following for spreadsheets, which summarised the data sources used during the MB0116 contract (including those identified by the Regional MCZ Projects and the SNCBs), divided into Regional MCZ Project regions (BS – Balanced Seas, FS – Finding Sanctuary, IS CZ – Irish Sea Conservation Zones, NG – Net Gain):

- BS\_Spatial\_Data\_Summary.xls
- FS\_Spatial\_Data\_Summary.xls
- IS\_Spatial\_Data\_Summary.xls
- NG\_Spatial\_Data\_Summary.xls

These inventories were cross-checked with the data sources used by JNCC in the 2012 advice package. The MB0116 data inventories specified a 'Data Source Category'. JNCC used this category to filter out the datasets which were already in use by JNCC (see [Table 15](#)) provides details specifically which 'data source categories' corresponded to datasets which were already in use by JNCC). All remaining data sources were then manually checked to determine whether any new datasets had been identified by the MB0116 contract for the Tranche One sites. No new information was identified for habitat features in Tranche One MCZs that had not already been used by JNCC in the previous 2012 assessment of confidence in feature presence and feature extent.

Please note that the MB0116 data inventories will continue to be used in this way when assessing future site features. There were some new data sources identified for species FOCI which were not originally proposed as features for designation in the MCZ Tranche One offshore sites and these datasets may be used in future assessments.

### **A note of the data source prioritisation exercise carried out by the MB0116 contract**

The MB0116 Report listed the data that were a 'priority' to obtain for further assessments. However JNCC note that this prioritisation was done from the perspective of the contractor who carried out the MB0116 and did not list the data which would be considered a priority by JNCC. This difference is highlighted by the fact that the list of 'priority datasets' in the Report contains data that JNCC had already used in their 2012 assessment. JNCC would have offered a different list of 'priority' data to compliment their existing data rather than duplicate.

**Table 15: List of data sources used in the 2012 advice and MB0116**

<b>'DATA SOURCE CATEGORY'</b>	<b>JNCC Comment on 2012 assessment use</b>
MESH	MESH habitat maps with a greater confidence than >58% were used in the original assessment
UK Sea map	UKSeaMap habitat maps were integral to the original assessment in 2012
Regional Projects	Much of the Regional projects data supplied by JNCC and used in 2012 assessments where appropriate
Regional Environmental Characterisation (REC)	The Humber, Thames, East coast and Eastern English channel REC data were used in the original assessment in 2012
MB0120	The MB0120 data were used in the original assessment
CEFAS (identified as 'NEW' in this Field)	This was listed as CEFAS in the 'DATA DERIVED FROM' field. Cefas data were provided to JNCC through a JNCC commissioned contract for data mining information and used in the original SNCB Assessment.
JNCC (identified as 'NEW' in this Field)	This was listed as JNCC in the 'DATA DERIVED FROM' field. This was The Canyons rMCZ deep-sea survey data commissioned by JNCC and subsequently provided to ABPMer.
Habmap (identified as 'NEW' in this Field)	This was listed as Habmap in the 'DATA DERIVED FROM' field. The point information was part of the Marine recorder data and the modelled habitat map was superseded by UKSeaMap 2010.

## **Annex 3: JNCC MCZ Evidence Quality Assurance Group**

A copy of the Terms of Reference of the JNCC MCZ Evidence Quality Assurance Group is included here.

### **Copy of the Terms of Reference**

#### **Introduction**

The first public consultation on the proposed Marine Conservation Zones (pMCZs) will end on 31<sup>st</sup> March 2013. JNCC will then re-assess the evidence underpinning the offshore pMCZs within the first tranche of sites proposed for designation in 2013, to take into account new data arising from the consultation process, the MB0120 Defra Research and Development Data Collection Programme for recommended Marine Conservation Zones (rMCZ), the data mining exercise carried out under the MB0116 contract, and any other sources. This process will continue for future pMCZ public consultations.

The JNCC MCZ Evidence Quality Assurance (QA) Group has been established to review which evidence will be used to inform the post-consultation advice to Defra. When reviewing the evidence, the Group will:

- Consider whether the data will inform one or more of the following:
  - Confidence in the presence and extent of features in pMCZs;
  - The condition of features (e.g. evidence of damage to features);
  - The risk of damage to features.
- Consider the time likely to be required to access, process and interpret the data. Some data sources may be excluded from the assessments/ advice package, on the basis that it would take prohibitively long to prepare the data.
- Consider whether data used in previous data confidence assessments has been superseded by newer data. In our original advice on the rMCZs in 2012, JNCC used all available data to inform the evidence assessments and advice provided to Defra. It may be appropriate to start excluding datasets, e.g. to ensure that confidence in feature presence and feature extent are not compromised by data which are less reliable than data collected during recent surveys. The JNCC MCZ Evidence QA Group will review any such instances on a dataset/feature/site basis, to ensure that the 'best available evidence' is used to inform confidence in Feature presence and Feature extent. The rationale for excluding datasets from the assessment process will be audited and published alongside the evidence assessment results.
- Review approaches for dealing with situations where feature boundaries differ significantly from the Regional MCZ Project recommended feature extents (see guidance on Technical Protocol E).
- Provide advice to Defra on any new site boundaries which were submitted by stakeholders during the consultation.

- Document all data considered by the Panel and any decisions made relating to use of individual datasets. Where advice on data is sought from individuals/organisations outside of the Group, this will also be documented.
- Take into consideration the JNCC operational guidance on evidence quality assurance, Technical Protocol B.

A key role of the Group will be to evaluate/quality assure any application of expert judgement when applying Technical Protocol E (and the accompanying guidance).

The Group will prioritise data sources which relate to the pMCZs put forward for designation in the Defra pMCZ consultation. The data prioritisation exercises undertaken as part of the MB0116 contract will be taken into consideration. The Group will not consider socio-economic data (Defra will assess any socio-economic evidence supplied during the consultation).

The Group will provide a representative to join the Natural England MCZ Evidence Panel, to facilitate exchange of information between these two groups, particularly in relation to 'joint sites'. The Group will provide feedback to Defra where appropriate.

## **Members**

The members of the Group have been selected to provide expertise in the MCZ project, marine data in the offshore environment and previous evidence assessments.

The Group will consist of:

- Jon Davies (Marine Protected Areas Programme Leader) (Chair)
- Ollie Payne (Senior MPA Advisor)
- Neil Golding (Offshore Data & Survey Manager)
- Nicola Church (MPA Advisor)
- Alice Ramsay (MPA Advisor)
- Andrew Eggett (MPA Advisor)
- Steve Wilkinson (Head of Data Services)
- Natalie Askew (Marine Mapping and Monitoring Manager)
- Natural England representative(s)

Further assistance may be sourced from outside the Group, in situations where this would help to inform decisions regarding the use of data. Any outside assistance will be documented.

## **Reporting Structure**

The Chair will provide a single point of contact for the formal disclosure of advice from the panel to its customer organisations. Individual panel members should not disclose partial or incomplete advice being developed by the Panel without written permission from the Chair.

The Panel will commence on the 22<sup>nd</sup> April 2013 and will meet where required post pMCZ consultations.



## Annex 4: Assessment of Confidence in Feature Presence and Feature Extent

The tables in [Annex 4](#) provide the detailed results that inform the advice in [Section 7](#) of this report. The Data tables critique the data sources used in the assessments, and the Confidence Assessment tables detail the new assessments completed since the close of the 2013 public consultation on MCZs, incorporating any new evidence not available for the 2012 advice on the pMCZs. Please note that where a habitat map has been derived from an MB0120 survey, many of the numerical columns in the table do not need to be populated for the assessment of confidence in Feature presence and Feature extent. This is only applicable to [Tables 16, 17, 20 and 21](#) for East of Haig Fras pMCZ and North East of Farnes Deep pMCZ

**Table 16: East of Haig Fras pMCZ Data Table**

East of Haig Fras pMCZ - Data													
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	Data Source	Data Type	Collection Method if point data	Number of points which disagree with the ENG feature and	Number of points recorded by points	Number of points recorded only the	Number of points recorded by parent feature points	Name of habitat recorded by parent feature points	Year collected (for species FOCI and	Comment on data source	External data source reference
A4.2 Moderate energy circalittoral rock	FS 07_A4.2	BSH	UKSeaMap 2010	Habitat map (modelled)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<a href="http://jncc.defra.gov.uk/">http://jncc.defra.gov.uk/</a> [UK SeaMap 2010 Interactive Map]
A4.2 Moderate energy circalittoral rock	FS 07_A4.2	BSH	MB102 Task 2E	Combined Kinetic Energy map (modelled)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Moderate energy is identified within both the recommended extent of the EUNIS A4.2 Moderate energy circalittoral rock broad-scale habitat and across the whole site.	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 report no. 10 pdf]
A4.2 Moderate energy circalittoral rock	FS 07_A4.2	BSH	BGS hard substrate	Hard substrate map	N/A	N/A	N/A	N/A	N/A	N/A	N/A	The interpretation of the BGS hard substrate maps was based on a variety of data sourced from within the British Geological Survey and externally. The data source for the polygon within site was identified as "Data Source: BGS, Admiralty charts, Samples, Seismic, multibeam" The Polygons BGS ID are: BGS_1656.	British Geological Society <a href="mailto:enquiries@bgs.ac.uk">enquiries@bgs.ac.uk</a>

East of Haig Fras pMCZ - Data													
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	Data Source	Data Type	Collection Method if point data	Number of points which disagree with the ENG feature and	Number of points recorded by points	Number of points recorded only the	Number of habitat feature points	Name of habitat recorded by parent feature points	Year collected (for species FOCI and	Comment on data source	External data source reference
A4.2 Moderate energy circalittoral rock	FS 07_A4.2	BSH	Cefas - MCZ verification survey	Habitat Map (survey)	Cefas data standards	N/A	N/A	N/A	N/A	N/A	N/A	Cefas survey: Survey ID: CEND 3_12a Habitat map - A full coverage habitat map from survey verified presence and extent of EUNIS A4.2 Moderate energy circalittoral rock with greater than one validating ground-truth sample. However there is a very patchy extent of the feature. The CEFAS survey 'Patches of hard substrate, in the form of cobbles and boulders, are associated with the 'A5.1/A5.4 Subtidal coarse/mixed sediments' features. The cobbles and boulders form stable hard surfaces supporting a variety of epifaunal organisms, particularly hydroids, and some mobile fauna typically associated with moderate energy rock habitats, and are consequently classified as 'A4.2 Moderate Energy Circalittoral Rock'. The potential circalittoral rock habitat covers approximately 3% of the area. However, the area cover estimate is very uncertain due to an overlap in the acoustic and topographical properties used to map the hard substrate with those identified for the coarse and mixed sediments.' East of Haig Fras rMCZ: Post-survey Site Report 18	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]
A5.3 Subtidal Mud	FS 07_A5.3	BSH	Cefas - MCZ verification survey	Habitat Map (survey)	MESH	7	N/A	N/A	N/A	N/A	N/A	Cefas survey Survey ID: CEND 3_12a Habitat map - A full coverage habitat map from survey verified presence and extent of A5.3 Subtidal Mud with greater than one validating ground-truth sample. 18% of the area of the rMCZ consists of A5.3 Subtidal mud.	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]
A5.1 Subtidal coarse sediment/ A5.4 Subtidal mixed sediments	FS 07_A5.1	BSH	Cefas - MCZ verification survey	Habitat Map (survey)	MESH	5	N/A	N/A	N/A	N/A	N/A	Cefas survey Survey ID: CEND 3_12a Habitat map - "The two broadscale habitats 'A5.1 Subtidal coarse sediment' and A5.4 Subtidal mixed sediments are presented in the map as a complex 'A5.1/A5.4 Subtidal coarse/mixed sediments'. They show no differentiation in their acoustic or topographical properties that would enable them to be mapped separately." - East of Haig Fras rMCZ: Post-survey Site Report 18	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]
A5.1 Subtidal coarse sediment	FS 07_A5.1	BSH	UKSeaMap 2010	Habitat map (modelled)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<a href="http://jncc.defra.gov.uk/">http://jncc.defra.gov.uk/</a> [UK SeaMap 2010 Interactive Map]

East of Haig Fras pMCZ - Data														
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	Data Source	Data Type	Collection Method if point data	Number of points	Number of points which disagree with the ENG feature and	Name of habitat recorded by points	Number of points recording only the	Name of habitat recorded by parent feature points	Year collected (for species FOCI and		Comment on data source	External data source reference
A5.1 Subtidal coarse sediment	FS 07_A5.1	BSH	BGS seabed sediments data points	PSA points	Grabs	N/A	N/A	N/A	N/A	N/A	N/A	Particle Size Analysis used to provide habitat type in Modified Folk classification. This has been converted by JNCC to the EUNIS habitat using JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at <a href="http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf">http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf</a>	Yes	British Geological Society <a href="mailto:enquiries@bgs.ac.uk">enquiries@bgs.ac.uk</a>
A5.1 Subtidal coarse sediment	FS 07_A5.1	BSH	Cefas - MCZ verification survey	Habitat Map (survey)	MESH	5	N/A	N/A	N/A	N/A	N/A	Cefas survey Survey ID: CEND 3_12a Habitat map - A full coverage habitat map from survey	No	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]
A5.2 Subtidal sand	FS 07_A5.2	BSH	Cefas - MCZ verification survey	Habitat Map (survey)	MESH	31	N/A	N/A	N/A	N/A	N/A	Cefas survey Survey ID: CEND 3_12a Habitat map - A full coverage habitat map from survey verified presence and extent of A5.2 Subtidal sand with greater than one validating ground-truth sample. A5.2 Subtidal sand' is the most widespread, covering approximately 47% of the area of the rMCZ.	No	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]
A5.2 Subtidal sand	FS 07_A5.2	BSH	UKSeaMap 2010	Habitat map (modelled)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	<a href="http://jncc.defra.gov.uk/">http://jncc.defra.gov.uk/</a> [UK SeaMap 2010 Interactive Map]
A5.2 Subtidal sand	FS 07_A5.2	BSH	BGS seabed sediments data points	PSA points	Grabs	N/A	N/A	N/A	N/A	N/A	N/A	Particle Size Analysis used to provide habitat type in Modified Folk classification. This has been converted by JNCC to the EUNIS habitat using JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at <a href="http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf">http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf</a>	Yes	British Geological Society <a href="mailto:enquiries@bgs.ac.uk">enquiries@bgs.ac.uk</a>

\* See JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at [http://jncc.defra.gov.uk/pdf/EUNIS\\_Correlation\\_2007-11\\_20101206v2.pdf](http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf). For correlation between the EUNIS classification and PSA/ modified Folk substrata see: <http://www.searchmesh.net/PDF/BGS>. Sand and muddy sand habitats are EUNIS A5.2 Subtidal sand, Mud and Sandy mud habitats are EUNIS A5.3 Subtidal mud, Coarse sediment habitat is EUNIS A5.1 Subtidal coarse sediment and mixed sediments habitat is EUNIS A5.4 Subtidal mixed sediments.

**Table 17: East of Haig Fras pMCZ Confidence Assessment**

[illegible]

[illegible]

East of Haig Fras pMCZ – Confidence Assessment																			
General comments on decision made																			
Data source of presence and extent map used to assess confidence supplied by the regional MCZ project																			
Justification for confidence in ENG feature extent																			
Confidence in ENG feature extent																			
Justification for confidence in ENG feature presence																			
Confidence in ENG feature presence																			
Expert judgment used.																			
Number of ENG species data points 6 yrs old or less.																			
Number of ENG species data points between 6 & 12 yrs old																			
Number of ENG species data points older than 12 yrs.																			
% agreement with ENG's parent feature (No BGS points)																			
% agreement with ENG feature (no BGS points)																			
% agreement with ENG's parent feature																			
% agreement with ENG feature																			
Points that have been used in the assessment of ENG feature across the recommended extent.																			
Points which agree only with the ENG's parent feature																			
Points which disagree with the ENG feature and parent feature																			
Points which verify the ENG feature.																			
Site/Feature Code (Unique ID)																			
ENG feature																			
A5.3 Subtidal Mud																			
A5.1 Subtidal coarse sediment/ A5.4 Subtidal Mixed sediments																			

**Table 18: North of Celtic Deep pMCZ Data Table**

North of Celtic Deep pMCZ - Data												
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	Data Source	Data Type	Collection Method if point data	Number of points which verify the ENG feature	Number of points which disagree with the ENG feature and ENG's parent feature	Name of habitat recorded by points not in agreement	Number of points recording only the ENG's parent feature	Name of habitat recorded by parent feature points	Year collected (for species FOCI & temporally varying habitats)	External data source reference
A4.2 Moderate energy circalittoral rock	IS CZ 05_A4.2	BSH	HabMap	Habitat map (modelled)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ROBINSON, K., RAMSAY, K., WILSON, J., MACKIE A., WHEELER, A., O'BEIRN F., LINDENBAUM, C., VAN LANDEGHAM, K., MCBREEN, F., MITCHELL, N. 2007. HABMAP: Habitat Mapping for conservation and management of the southern Irish Sea. Report to the Welsh European Funding Office. CCW Science Report Number 810. Countryside Council for Wales, Bangor. 233 pp plus appendices. Referenced within 'Irish Seas Conservation Zones Final Recommendations for Marine Conservation Zones in the Irish Seas' and available at <a href="http://tna.europarchive.org/20120502154708/http://www.irishseaconservation.org.uk/node/92">http://tna.europarchive.org/20120502154708/http://www.irishseaconservation.org.uk/node/92</a> [Accessed 01/11/2012].
A4.2 Moderate energy circalittoral rock	IS CZ 05_A4.2	BSH	MB102 Task 2E	Combined Kinetic Energy map	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 report no. 10 pdf]



North of Celtic Deep pMCZ - Data																
External data source reference																
Data layer used for extent?																
Data layer used for presence?																
Conversion to EUNIS habitat using JNCC correlation table *																
Comment on data source																
Year collected (for species FOCI & temporally varying habitats )																
Name of habitat recorded by parent feature points																
Number of points recording only the ENG's parent feature																
Name of habitat recorded by points not in agreement																
Number of points which disagree with the ENG feature and ENG's parent feature																
Number of points which verify the ENG feature																
Collection Method if point data																
Data Type																
Data Source																
ENG Feature Type																
Site/Feature Code (Unique ID)																
ENG Feature																
A4.2 Moderate energy circalittoral rock																
A4.2 Moderate energy circalittoral rock																

North of Celtic Deep pMCZ - Data																
External data source reference	Data layer used for extent?	Data layer used for presence?	Conversion to EUNIS habitat using JNCC correlation table *	Comment on data source	Year collected (for species FOCI & temporally varying habitats )	Name of habitat recorded by parent feature points	Number of points recording only the ENG's parent feature	Name of habitat recorded by points not in agreement	Number of points which disagree with the ENG feature and ENG's parent feature	Number of points which verify the ENG feature	Collection Method if point data	Data Type	Data Source	ENG Feature Type	Site/Feature Code (Unique ID)	ENG Feature
ROBINSON, K., RAMSAY, K., WILSON, J., MACKIE A., WHEELER, A., O'BEIRN F., LINDENBAUM, C., VAN LANDEGHAM, K., MCBREEN, F., MITCHELL, N. 2007. HABMAP: Habitat Mapping for conservation and management of the southern Irish Sea. Report to the Welsh European Funding Office. CCW Science Report Number 810. Countryside Council for Wales, Bangor. 233 pp plus appendices. Referenced within 'Irish Seas Conservation Zones Final Recommendations for Marine Conservation Zones in the Irish Seas' and available at <a href="http://tna.europarchive.org">http://tna.europarchive.org</a> [Accessed 01/11/2012].	No	No	No	These data from HabMap were superseded by UKSeaMap 2010. These data were not used in the SNCB assessment but have been noted here because it is listed in the regional MCZ project final report for this site as a data source. Ground-truthing samples were utilised via Marine Recorder.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Habitat map (modelled)	HabMap	BSH	ISCZ 05_A5.1	A5.1 Subtidal coarse sediment

North of Celtic Deep pMCZ - Data																
External data source reference																
Data layer used for extent?																
Data layer used for presence?																
Conversion to EUNIS habitat using JNCC correlation table *																
Comment on data source																
Year collected (for species FOCI & temporally varying habitats )																
Name of habitat recorded by parent feature points																
Number of points recording only the ENG's parent feature																
Name of habitat recorded by points not in agreement																
Number of points which disagree with the ENG feature and ENG's parent feature																
Number of points which verify the ENG feature																
Collection Method if point data																
Data Type																
Data Source																
ENG Feature Type																
Site/Feature Code (Unique ID)																
ENG Feature																
A5.1 Subtidal coarse sediment																
A5.1 Subtidal coarse sediment																

North of Celtic Deep pMCZ - Data																		
External data source reference		Data layer used for extent?	Data layer used for presence?	Conversion to EUNIS habitat using JNCC correlation table *	Comment on data source	Year collected (for species FOCI & temporally varying habitats )	Name of habitat recorded by parent feature points		Number of points recording only the ENG's parent feature	Name of habitat recorded by points not in agreement	Number of points which disagree with the ENG feature and ENG's parent feature	Number of points which verify the ENG feature	Collection Method if point data	Data Type	Data Source	ENG Feature Type	Site/Feature Code (Unique ID)	ENG Feature
The Marine Recorder snapshot will be available at <a href="http://jncc.defra.gov.uk/">http://jncc.defra.gov.uk/</a>		Yes	Yes	Yes	Two Surveys: 1989-91 Biomor southern Irish Sea sublittoral survey (survey identification key JNCCMNCR10000634 ) & 2005 CCW HabMap sublittoral survey (survey identification key MRCCW169000000002).	N/A			7	N/A	N/A	11		Biotope points	Marine Recorder	BSH	ISCZ_05_A5.1	A5.1 Subtidal coarse sediment
<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]		Yes	Yes	No	Cefas survey: Survey ID: CEND 8/12b: Grab samples with PSA results already converted to EUNIS.  11 points validate the Broadscale feature ENUIS A5.2 Subtidal sand. 33 further points validate the parent feature EUNIS A5 sublittoral sediment.	N/A			33	N/A	N/A	11	Ground-truthing	PSA points	Cefas - MCZ verification survey	BSH	ISCZ_05_A5.1	A5.1 Subtidal coarse sediment
<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]		Yes	Yes	No	Cefas survey: Survey ID: CEND 8/12b - Camera tows, taking video and Stills. Only analysed stills were used in the evidence assessment, this reduces duplication from double counting of the video and the photographs taken along the same transect.  53 points validate the Broadscale feature A5.2 Subtidal sand. 16 further points validate the parent feature EUNIS A5 sublittoral sediment over 12 video transects.	N/A			16	N/A	N/A	53	Stills	EUNIS points	Cefas - MCZ verification survey	BSH	ISCZ_05_A5.1	A5.1 Subtidal coarse sediment

North of Celtic Deep pMCZ - Data																
External data source reference	Data layer used for extent?	Data layer used for presence?	Conversion to EUNIS habitat using JNCC correlation table *	Comment on data source	Year collected (for species FOCI & temporally varying habitats )	Name of habitat recorded by parent feature points	Number of points recording only the ENG's parent feature	Name of habitat recorded by points not in agreement	Number of points which disagree with the ENG feature and ENG's parent feature	Number of points which verify the ENG feature	Collection Method if point data	Data Type	Data Source	ENG Feature Type	Site/Feature Code (Unique ID)	ENG Feature
<a href="http://jncc.defra.gov.uk/">http://jncc.defra.gov.uk/</a> [UK SeaMap 2010 Interactive Map]	Yes	Yes	No		N/A	N/A	N/A	N/A	N/A	N/A	N/A	Habitat map (modelled)	UkSeaMap 2010	BSH	IS CZ 05_A5.1	A5.1 Subtidal coarse sediment
ROBINSON, K., RAMSAY, K., WILSON, J., MACKIE A., WHEELER, A., O'BEIRN F., LINDENBAUM, C., VAN LANDEGHAM, K., MCBREEN, F., MITCHELL, N. 2007. HABMAP: Habitat Mapping for conservation and management of the southern Irish Sea. Report to the Welsh European Funding Office. CCW Science Report Number 810. Countryside Council for Wales, Bangor. 233 pp plus appendices. Referenced within 'Irish Seas Conservation Zones Final Recommendations for Marine Conservation Zones in the Irish Seas' and available at <a href="http://tna.europarchive.org">http://tna.europarchive.org</a> [Accessed 01/11/2012].	No	No	No	These data from HabMap were superseded by UKSeaMap 2010. These data were not used in the SNCB assessment but have been noted here because it is listed in the regional MCZ project final report for this site as a data source. Ground-truthing samples were utilised via Marine Recorder.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Habitat map (modelled)	HabMap	BSH	IS CZ 05_A5.2	A5.2 Subtidal sand

North of Celtic Deep pMCZ - Data																
External data source reference																
Data layer used for extent?																
Data layer used for presence?																
Conversion to EUNIS habitat using JNCC correlation table *																
Comment on data source																
Year collected (for species FOCL & temporally varying habitats )																
Name of habitat recorded by parent feature points																
Number of points recording only the ENG's parent feature																
Name of habitat recorded by points not in agreement																
Number of points which disagree with the ENG feature and ENG's parent feature																
Number of points which verify the ENG feature																
Collection Method if point data																
Data Type																
Data Source																
ENG Feature Type																
Site/Feature Code (Unique ID)																
ENG Feature																
A5.2 Subtidal sand	IS CZ 05_A5.2	BSH	Cefas - MCZ verification survey	PSA points	Ground-truthing	4	N/A	N/A	12	8 record of A5.1, 3 record of A5.3, 1 record of A5.4.	N/A	Cefas survey: Survey ID: CEND 8/12b: Grab samples with PSA results already converted to EUNIS.  4 points validate the Broadscale feature A5.2 Subtidal sand. 12 further points validate the parent feature EUNIS A5 sublittoral sediment.	No	Yes	Yes	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]
A5.2 Subtidal sand	IS CZ 05_A5.2	BSH	Cefas - MCZ verification survey	EUNIS points	Stills	6	N/A	N/A	26	26 records of A5.1	N/A	Cefas survey: Survey ID: CEND 8/12b - Camera tows, taking video and Stills. Only analysed stills were used in the evidence assessment, this reduces duplication from double counting of the video and the photographs taken along the same transect.  26 points validate the parent feature EUNIS A5 sublittoral sediment over 4 video tows.	No	Yes	Yes	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]
A5.2 Subtidal sand	IS CZ 05_A5.2	BSH	Marine Recorder	ground-truthing		2	N/A	N/A	2	2 of A5.4	N/A	Data collected from one survey 2005 CCW HABMAP sublittoral survey (survey identification key MRCCW16900000002)	Yes	Yes	Yes	The Marine Recorder snapshot will be available at <a href="http://jncc.defra.gov.uk/">http://jncc.defra.gov.uk/</a>

North of Celtic Deep pMCZ - Data													
External data source reference	Data layer used for extent?	Data layer used for presence?	Conversion to EUNIS habitat using JNCC correlation table *	Comment on data source	Year collected (for species FOCI & temporally varying habitats )	Name of habitat recorded by parent feature points	Number of points recorded only the ENG's parent feature	Name of habitat recorded by points not in agreement	Number of points which disagree with the ENG feature and ENG's parent feature	Number of points which verify the ENG feature	Collection Method if point data	Data Type	Data Source
	No	No	Yes	These records are duplicates from the Marine Recorder public snapshot and these data points have been assessed for this feature already and so this data layer was not used to assess presence and extent. (SurvID MRCCW16900000002)	N/A		N/A	N/A	N/A	N/A		Subtidal sands and gravels points	MB102 Task 2C
British Geological Society <a href="mailto:enquiries@bgs.ac.uk">enquiries@bgs.ac.uk</a>	Yes	Yes	Yes	Particle Size Analysis used to provide habitat type in Modified Folk classification. This has been converted by JNCC to the EUNIS habitat using JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at <a href="http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf">http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf</a>	N/A		2 of A5.1 1 of A5.4	3	N/A	0	Grabs	PSA points	BGS seabed sediments data points
<a href="http://jncc.defra.gov.uk/">http://jncc.defra.gov.uk/</a> [UK SeaMap 2010 Interactive Map]	Yes	Yes	No	N/A	N/A		N/A	N/A	N/A	N/A	N/A	Habitat map (modelled)	UKSeaMap 2010
	No	No	Yes		N/A		N/A	N/A	N/A	N/A		Subtidal sands	ISGZ 05_A5.2
	No	No	Yes		N/A		N/A	N/A	N/A	N/A		Subtidal sand	ISGZ 05_A5.2
	No	No	Yes		N/A		N/A	N/A	N/A	N/A		Subtidal sand	ISGZ 05_A5.2



North of Celtic Deep pMCZ - Data																		
External data source reference		Data layer used for extent?	Data layer used for presence?	Conversion to EUNIS habitat using JNCC correlation table *	Comment on data source	Year collected (for species FOCI & temporally varying habitats )	Name of habitat recorded by parent feature points		Number of points recording only the ENG's parent feature	Name of habitat recorded by points not in agreement	Number of points which disagree with the ENG feature and ENG's parent feature	Number of points which verify the ENG feature	Collection Method if point data	Data Type	Data Source	ENG Feature Type	Site/Feature Code (Unique ID)	ENG Feature
		No	No	No	This data from HabMap was superseded by UKSeaMap 2010. This data was not used in the SNCB assessment but has been noted here because it is listed in the regional MCZ project final report for this site as a data source. Ground-truthing samples were utilised via Marine Recorder.	N/A		N/A	N/A	N/A	N/A	N/A	N/A	Habitat map (modelled)	HabMap	HOCl	ISCZ 05_HOCl_21	HOCl_21 Subtidal sands and gravels
		No	No	No	The ENG states that Subtidal sands and gravels FOCI directly correlate with the broad-scale habitats EUNIS A5.1 Subtidal coarse sediment and EUNIS A5.2 Subtidal sand.  It was noted that the UK SeaMap layer indicated that A5.1 and 5.2 extend across the recommended extent of the feature, however this is modelled data and so was not used to confirm presence or extent.	N/A		N/A	N/A	N/A	N/A	N/A	N/A	Habitat map (modelled)	UKSeaMap 2010	HOCl	ISCZ 05_HOCl_21	HOCl_21 Subtidal sands and gravels

North of Celtic Deep pMCZ - Data												
External data source reference	Data layer used for extent?	Data layer used for presence?	Conversion to EUNIS habitat using JNCC correlation table *	Comment on data source	Year collected (for species FOCI & temporally varying habitats )	Name of habitat recorded by parent feature points	Number of points recording only the ENG's parent feature	Name of habitat recorded by points not in agreement	Number of points which disagree with the ENG feature and ENG's parent feature	Number of points which verify the ENG feature	Collection Method if point data	Data Type
	Yes	Yes	Yes		N/A	N/A	N/A	1 record of A5.3,	8	14	ground-truthing	Biotope points
												Marine Recorder
												HOCl
												IS CZ 05_HOCl_21
												HOCl_21 Subtidal sands and gravels

North of Celtic Deep pMCZ - Data																		
External data source reference		Data layer used for extent?	Data layer used for presence?	Conversion to EUNIS habitat using JNCC correlation table *	Comment on data source	Year collected (for species FOCI & temporally varying habitats )	Name of habitat recorded by parent feature points		Number of points recording only the ENG's parent feature	Name of habitat recorded by points not in agreement	Number of points which disagree with the ENG feature and ENG's parent feature	Number of points which verify the ENG feature	Collection Method if point data	Data Type	Data Source	ENG Feature Type	Site/Feature Code (Unique ID)	ENG Feature
British Geological Society <a href="mailto:enquiries@bgs.ac.uk">enquiries@bgs.ac.uk</a>		Yes	Yes	Yes		N/A			N/A	A5.4	1	11	Grabs	PSA points	BGS seabed sediments data points	HOCl	ISCZ 05_HOCl_21	HOCl_21 Subtidal sands and gravels
<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 report no. 16 pdf]		No	No	No		N/A			N/A	N/A	N/A	N/A	N/A	Subtidal sands and gravels habitat map (modelled)	MB102 Task 2C	HOCl	ISCZ 05_HOCl	HOCl_21 Subtidal sands and gravels
<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 report no. 16 pdf]		Yes	Yes	No		N/A			N/A	N/A	N/A	N/A	N/A	Subtidal sands and gravels habitat map	MB102 Task 2C	HOCl	ISCZ 05_HOCl_21	HOCl_21 Subtidal sands and gravels

North of Celtic Deep pMCZ - Data																	
External data source reference		Data layer used for extent?	Data layer used for presence?	Conversion to EUNIS habitat using JNCC correlation table *	Comment on data source	Year collected (for species FOCI & temporally varying habitats )	Name of habitat recorded by parent feature points	Number of points recording only the ENG's parent feature	Name of habitat recorded by points not in agreement	Number of points which disagree with the ENG feature and ENG's parent feature	Number of points which verify the ENG feature	Collection Method if point data	Data Type	Data Source	ENG Feature Type	Site/Feature Code (Unique ID)	ENG Feature
<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]	Yes	Yes	Yes	No	Cefas survey: Survey ID: CEND 8/12b: Grab samples with PSA results already converted to EUNIS. 16 points verify the feature HOCI Subtidal Sands and gravels and a further 8 disagree with the feature. The ENG states that Subtidal sands and gravels FOCI directly correlate with the broad-scale habitats EUNIS A5.1 Subtidal coarse sediment and EUNIS A5.2 Subtidal sand. Records of A5.1 and A5.2 were used to verify the habitat.	N/A	N/A	N/A	3 record of A5.3,	8	16	Ground-truthing	PSA points	Cefas - MCZ verification survey	HOCI	IS CZ 05_HOCI_21	HOCI_21 Subtidal sands and gravels
	Yes	Yes	No	Cefas survey: Survey ID: CEND 8/12b - Camera tows, taking video and Stills. Only analysed stills were used in the evidence assessment, this reduces duplication from double counting of the video and the photographs taken along the same transect. 64 points verify the feature HOCI Subtidal Sands and gravels over 16 video tows. The ENG states that Subtidal sands and gravels FOCI directly correlate with the broad-scale habitats EUNIS A5.1 Subtidal coarse sediment and EUNIS A5.2 Subtidal sand. Records of A5.1 and A5.2 were used to verify the habitat.	N/A	N/A	N/A	N/A	0	64	Stills	EUNIS points	Cefas - MCZ verification survey	HOCI	IS CZ 05_HOCI_21	HOCI_21 Subtidal sands and gravels	

North of Celtic Deep pMCZ - Data																
External data source reference																
	Data layer used for extent?	Data layer used for presence?	Conversion to EUNIS habitat using JNCC correlation table *	Comment on data source	Year collected (for species FOCI & temporally varying habitats )	Name of habitat recorded by parent feature points	Number of points recording only the ENG's parent feature	Name of habitat recorded by points not in agreement	Number of points which disagree with the ENG feature and ENG's parent feature	Number of points which verify the ENG feature	Collection Method if point data	Data Type	Data Source	ENG Feature Type	Site/Feature Code (Unique ID)	ENG Feature
<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 report no. 16 pdf]	Yes	Yes	Yes		N/A	N/A	N/A	N/A	N/A	6	Ground-truthing	Subtidal sands and gravels points	MB102 Task 2C	HOCl	IS CZ 05_HOCl_21	HOCl_21 Subtidal sands and gravels

\* See JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at

[http://jncc.defra.gov.uk/pdf/EUNIS\\_Correlation\\_2007-11\\_20101206v2.pdf](http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf). For correlation between the EUNIS classification and PSA/ modified Folk substrata see <http://www.searchmesh.net/PDF/BGS>. Sand and muddy sand habitats are EUNIS A5.2 Subtidal sand, Mud and Sandy mud habitats are EUNIS A5.3 Subtidal mud, Coarse sediment habitat is EUNIS A5.1 Subtidal coarse sediment and Mixed sediments habitat is EUNIS A5.4 Subtidal mixed sediments.

**Table 19: North of Celtic Deep pMCZ Confidence Assessment**

North of Celtic Deep pMCZ – Confidence Assessment													
General comments on decision made	Data source of presence and extent map used to assess confidence supplied by the regional MCZ project	Justification for confidence in ENG feature extent	Confidence in ENG feature extent	Justification for confidence in ENG feature presence	Confidence in ENG feature presence	Expert judgment used.	Number of ENG species data points 6 yrs old or less.	Number of ENG species data points between 6 & 12 yrs old	Number of ENG species data points older than 12 yrs.	% agreement with ENG's parent feature (No BGS points)	% agreement with ENG feature (no BGS points)	% agreement with ENG's parent feature	% agreement with ENG feature
Points that have been used in the assessment of ENG feature across the recommended extent.	Points which agree only with the ENG's parent feature	Points which disagree with the ENG feature and parent feature	Points which verify the ENG feature.	Site/Feature Code (Unique ID)	ENG feature								
A4.2 Moderate energy circalittoral rock	ISGZ 05_A4.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A5.1 Subtidal coarse sediment	ISGZ 05_A5.1	84	0	56	140	60	100	57	100	100	100	100	100

[illegible]



**Table 20: North East of Farnes Deep pMCZ Data Table**

North East of Farnes Deep pMCZ - Data												
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	Data Source	Data Type	Collection Method if point data	Number of points which verify the ENG feature	Number of points which disagree with the ENG feature and ENG's parent feature.	Name of habitat recorded by points not in agreement	Number of points recording only the ENG's parent feature	Name of habitat recorded by parent feature points	Year collected (for species FOCI and temporally varying habitats )	External data source reference
A4.3 Low energy circalittoral rock	NG 15_A4.3	BSH	Cefas - MCZ verification survey	Habitat Map (survey)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<a href="http://randd.defra.gov.uk">http://randd.defra.gov.uk</a> [MB0120 report pdf]
A4.3 Low energy circalittoral rock	NG 15_A4.3	BSH	UKSeaMap 2010	Habitat map (modelled)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<a href="http://jncc.defra.gov.uk">http://jncc.defra.gov.uk</a> [UK Seemap 2010 Interactive Map]
A4.3 Low energy circalittoral rock	NG 15_A4.3	BSH	BGS Seabed sediments data points	PSA points	Grabs	0	6	3 of A5.1 and 3 of A5.2	0	N/A	N/A	British Geological Society <a href="mailto:enquiries@bgs.ac.uk">enquiries@bgs.ac.uk</a>  The BGS data points for EUNIS A5.1 Subtidal coarse sediment and A5.2 Subtidal sand should not be used to prove the recommended extent of EUNIS A4.3 Low energy circalittoral rock because the survey method used to collect the sediment data was not appropriate for rock habitat.  Particle Size Analysis (PSA) was used to provide habitat type in Modified Folk classification. This has been converted by JNCC to the EUNIS habitat using JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at <a href="http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf">http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf</a>
A4.3 Low energy circalittoral rock	NG 15_A4.3	BSH	Cefas	Habitat points	Ground-truthing	0	1	A5.2	0	N/A	N/A	The Cefas data points for EUNIS A5.2 Subtidal sand should not be used to discredit the recommended extent of EUNIS A4.3 Low energy circalittoral rock because the survey method used may not be appropriate for rock habitat.

North East of Farnes Deep pMCZ - Data													
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	Data Source	Data Type	Collection Method if point data	Number of points which verify the ENG feature	Number of points which disagree with the ENG feature and ENG's parent feature.	Name of habitat recorded by points not in agreement	Number of points recording only the ENG's parent feature	Name of habitat recorded by parent feature points	Year collected (for species FOCI and temporally varying habitats )	Comment on data source	External data source reference
A4.3 Low energy circalittoral rock	NG 15_A4.3	BSH	MB0102 Task 2E	Combined Kinetic Energy map	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Moderate energy is identified within a small section of the recommended extent of EUNIS A4.3 Low energy circalittoral rock, however Low energy is recorded across most of the feature as recommended by the regional MCZ project.	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 report no 10. pdf]
A4.3 Low energy circalittoral rock	NG 15_A4.3	BSH	BGS hard substrate	Hard substrate map	N/A	N/A	N/A	N/A	N/A	N/A	N/A	The interpretation of the BGS hard substrate map was based on a variety of data sourced from within the British Geological Survey and externally. The data source for the polygon within site was identified as "DataSource: BGS, Admiralty charts, Samples, Seismic". The Polygons BGS ID is: BGS_3224. No BGS data point validated this feature.	British Geological Society <a href="mailto:enquiries@bgs.ac.uk">enquiries@bgs.ac.uk</a>
A5.1 Subtidal coarse sediment	NG 15_A5.1	BSH	Cefas - MCZ verification survey	Habitat Map (survey)	N/A	12	N/A	N/A	N/A	N/A	N/A	Cefas survey Survey ID: CEND 4_12 Habitat map -A full coverage habitat map from survey verified presence and extent of A5.1 Subtidal coarse sediment with greater than one validating ground-truth sample.	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]
A5.1 Subtidal coarse sediment	NG 15_A5.1	BSH	UKSeaMap 2010	Habitat map (modelled)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<a href="http://jncc.defra.gov.uk/">http://jncc.defra.gov.uk/</a> [UK Seemap 2010 Interactive Map]

North East of Farnes Deep pMCZ - Data													
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	Data Source	Data Type	Collection Method if point data	Number of points which verify the ENG feature	Number of points which disagree with the ENG feature and ENG's parent feature.	Name of habitat recorded by points not in agreement	Number of points recording only the ENG's parent feature	Name of habitat recorded by parent feature points	Year collected (for species FOCI and temporally varying habitats )	Comment on data source	External data source reference
A5.1 Subtidal coarse sediment	NG 15_A5.1	BSH	BGS Seabed sediments data points	PSA points	Grabs	8	0	N/A	3	A5.2	N/A	<p>There are three data points that directly correspond to EUNIS A5.1 Subtidal coarse sediment that are not located within the recommended extent for EUNIS A5.1 Subtidal coarse sediment and are within the recommended extent for EUNIS A4.3 Low energy circalittoral rock.</p> <p>Particle Size Analysis (PSA) was used to provide habitat type in Modified Folk classification. This has been converted by JNCC to the EUNIS habitat using JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at <a href="http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf">http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf</a></p>	British Geological Society <a href="mailto:enquiries@bgs.ac.uk">enquiries@bgs.ac.uk</a>
A5.2 Subtidal sand	NG 15_A5.2	BSH	Cefas - MCZ verification survey	Habitat Map (survey)	N/A	11	N/A	N/A	N/A	N/A	N/A	Cefas survey Survey ID: CEND 4_12 Habitat map - A full coverage habitat map from survey verified presence and extent of A5.2 Subtidal sand with greater than one validating ground-truth sample.	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]

North East of Farnes Deep pMCZ - Data													
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	Data Source	Data Type	Collection Method if point data	Number of points which verify the ENG feature	Number of points which disagree with the ENG feature and ENG's parent feature.	Name of habitat recorded by points not in agreement	Number of points recording only the ENG's parent feature	Name of habitat recorded by parent feature points	Year collected (for species FOCI and temporally varying habitats )	Comment on data source	External data source reference
A5.2 Subtidal sand	NG 15_A5.2	BSH	BGS Seabed sediments data points	PSA points	Grabs	14	0	N/A	3	A5.1	N/A	<p>There are three data points that directly correspond to EUNIS A5.1 Subtidal coarse sediment that are not located within the recommended extent for EUNIS A5.2 Subtidal sand and are within the recommended extent for EUNIS A4.3 Low energy circalittoral rock.</p> <p>Particle Size Analysis was used to provide habitat type in Modified Folk classification. This has been converted by JNCC to the EUNIS habitat using JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at <a href="http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf">http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf</a></p>	British Geological Society <a href="mailto:enquiries@bgs.ac.uk">enquiries@bgs.ac.uk</a>
A5.4 Subtidal mixed sediments	NG 15_A5.4	BSH	Cefas - MCZ verification survey	Habitat Map (survey)	N/A	21	N/A	N/A	N/A	N/A	N/A	Cefas survey Survey ID: CEND 4_12 Habitat map - A full coverage habitat map from survey verified presence and extent of A5.3 Subtidal mixed sediment with greater than one validating ground-truth sample.	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]
A5.3 Subtidal mud	NG 15_A5.3	BSH	Cefas - MCZ verification survey	Habitat Map (survey)	N/A	2	N/A	N/A	N/A	N/A	N/A	Cefas survey Survey ID: CEND 4_12 Habitat map - A full coverage habitat map from survey verified presence and extent of A5.3 Subtidal mud with greater than one validating ground-truth sample.	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]

North East of Farnes Deep pMCZ - Data													
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	Data Source	Data Type	Collection Method if point data	Number of points which verify the ENG feature	Number of points which disagree with the ENG feature and ENG's parent feature.	Name of habitat recorded by points not in agreement	Number of points recording only the ENG's parent feature	Name of habitat recorded by parent feature points	Year collected (for species FOCI and temporally varying habitats )	Comment on data source	External data source reference
HOCI_18 Sea pen and burrowing megafauna communities	NG 15_HOCI_18	FOCI habitat	Cefas - MCZ verification survey	Habitat Map (survey)	N/A	4	N/A	N/A	N/A	N/A	N/A	<p>Cefas survey: Survey ID: CEND 4_12 Habitat map - A full coverage habitat map from survey verified presence and extent of Sea pen and burrowing megafauna communities with greater than one validating ground-truth sample. This area is described as 'potential Sea pens and burrowing megafauna communities' however there is a Mesh confidence score of 84% in EUNIS A5.3 Subtidal Mud. The Cefas site report states:</p> <p>"Sea pens and evidence of burrowing fauna were encountered at four video sampling sites, two of which coincided with muddy substrate, classifying the sites as the 'Sea Pen and Burrowing Megafauna Communities' habitat FOCI (Figure 7). The subtidal mud patches in the updated habitat map are consistent with the depth and substrate conditions where the sea pen habitat was observed. Consequently, the whole area of subtidal mud observed has been assigned as potential 'Sea Pen and Burrowing Megafauna Communities' habitat FOCI, and has a calculated extent of 27.65 km2" (Section 4.1 page 17)</p>	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]
HOCI_21 Subtidal sands and gravels	NG 15_HOCI_21	FOCI habitat	Cefas - MCZ verification survey	Habitat Map (survey)	N/A	23	N/A	N/A	N/A	N/A	N/A	<p>Cefas survey Survey ID: CEND 4_12 Habitat map - A full coverage habitat map from survey verified presence and extent of Subtidal Sands and gravels with greater than one validating ground-truth sample. This is based on the occurrence of the EUNIS habitats A5.1 subtidal coarse sediment and A5.2 subtidal sand verify the Habitat FOCI Subtidal sands and gravels as explained in the Ecological Network Guidance.</p>	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]

North East of Farnes Deep pMCZ - Data													
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	Data Source	Data Type	Collection Method if point data	Number of points which verify the ENG feature	Number of points which disagree with the ENG feature and ENG's parent feature.	Name of habitat recorded by points not in agreement	Number of points recording only the ENG's parent feature	Name of habitat recorded by parent feature points	Year collected (for species FOCI and temporally varying habitats )	Comment on data source	External data source reference
HOCL_21 Subtidal sands and gravels	NG 15_HOCL_21	FOCI habitat	MB0102 Task 2C	Subtidal sands and gravels data points	Ground-truthing	1	N/A	N/A	N/A	N/A	N/A	One data point for Subtidal sands and gravels FOCI is within the recommended extent of EUNIS A4.3 Low energy circalittoral rock but is presented in the regional MCZ project final report map for subtidal sands and gravels FOCI. This also corresponds to the location of the Cefas data point for EUNIS A5.2 Subtidal sand which is located on the recommended extent of EUNIS A4.3 Low energy circalittoral rock. The EUNIS habitats A5.1 subtidal coarse sediment and A5.2 subtidal sand verify the Habitat FOCI Subtidal sands and gravels as explained in the Ecological Network Guidance.	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 report no. 16 pdf]
HOCL_21 Subtidal sands and gravels	NG 15_HOCL_21	FOCI habitat	BGS Seabed sediments data points	PSA points	Grabs	17	0	N/A	N/A	N/A	N/A	<p>The ENG states that Subtidal sands and gravels FOCI directly correlate with the broad-scale habitats EUNIS A5.1 Subtidal coarse sediment and EUNIS A5.2 Subtidal sand.</p> <p>There are 14 records of EUNIS A5.2 Subtidal sand and 3 of EUNIS A5.1 Subtidal coarse sediment occurring within the recommended extent of Subtidal sands and gravels FOCI.</p> <p>Particle Size Analysis (PSA) was used to provide habitat type in Modified Folk classification. This has been converted by JNCC to the EUNIS habitat using JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at <a href="http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf">http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf</a></p>	British Geological Society <a href="mailto:enquiries@bgs.ac.uk">enquiries@bgs.ac.uk</a>

\* See JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at

[http://jncc.defra.gov.uk/pdf/EUNIS\\_Correlation\\_2007-11\\_20101206v2.pdf](http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf). For correlation between the EUNIS classification and PSA/ modified Folk substrata see <http://www.searchmesh.net/PDF/BGS>. Sand and muddy sand habitats are EUNIS A5.2 Subtidal sand, Mud and Sandy mud habitats are EUNIS A5.3 Subtidal mud, Coarse sediment habitat is EUNIS A5.1 Subtidal coarse sediment and Mixed sediments habitat is EUNIS A5.4 Subtidal mixed sediments.

**Table 21: North East of Farnes Deep pMCZ Confidence Assessment**

North East of Farnes Deep pMCZ– Confidence Assessment																			
General comments on decision made																			
Data source of presence and extent map used to assess confidence supplied by the regional MCZ project																			
Justification for confidence in ENG feature extent																			
Confidence in ENG feature extent																			
Justification for confidence in ENG feature presence																			
Confidence in ENG feature presence																			
Expert judgment used.																			
Number of ENG species data points 6 yrs old or less.																			
Number of ENG species data points between 6 &12 yrs old																			
Number of ENG species data points older than 12 yrs.																			
% agreement with ENG's parent feature (No BGS points)																			
% agreement with ENG feature (no BGS points)																			
% agreement with ENG's parent feature																			
% agreement with ENG feature																			
Points that have been used in the assessment of ENG feature across the recommended extent.																			
Points which agree only with the ENG's parent feature																			
Points which disagree with the ENG feature and parent feature																			
Points which verify the ENG feature.																			
Site/Feature Code (Unique ID)																			
ENG feature																			
A4.3 Low energy circalittoral rock					No confidence					Recent survey did not record EUNIS A4.3 Low energy circalittoral rock outcropping within in the site and mapped a different habitat in the previously modelled map location of the rock feature.					No confidence				
A5.1 Subtidal coarse sediment					High					Presence of EUNIS A5.1 Subtidal coarse sediment is supported by a full coverage habitat map from survey with supporting ground truth sample data.					High				
A5.1 Subtidal coarse sediment					High					Extent of EUNIS A5.1 Subtidal coarse sediment is supported by a full (100%) coverage habitat map from survey with ground truth sample data.					High				
A5.1 Subtidal coarse sediment					High					Extent of EUNIS A5.1 Subtidal coarse sediment is supported by a full (100%) coverage habitat map from survey with ground truth sample data.					High				



North East of Farnes Deep pMCZ– Confidence Assessment														
General comments on decision made	Data source of presence and extent map used to assess confidence supplied by the regional MCZ project	Justification for confidence in ENG feature extent	Confidence in ENG feature extent	Justification for confidence in ENG feature presence	Confidence in ENG feature presence	Expert judgment used.	Number of ENG species data points 6 yrs old or less.	Number of ENG species data points between 6 & 12 yrs old	Number of ENG species data points older than 12 yrs.	% agreement with ENG's parent feature (No BGS points)	% agreement with ENG feature (no BGS points)	% agreement with ENG's parent feature	% agreement with ENG feature	Points that have been used in the assessment of ENG feature across the recommended extent.
Points which disagree with the ENG feature and parent feature	Points which agree only with the ENG's parent feature	Points which verify the ENG feature.	ENG feature	Site/Feature Code (Unique ID)	ENG feature									
A5.2 Subtidal sand	NG 15_A5.2	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A5.4 Subtidal mixed sediment	NG 15_A5.4	21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A5.3 Subtidal mud	NG 15_A5.3	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

North East of Farnes Deep pMCZ– Confidence Assessment									
General comments on decision made	Data source of presence and extent map used to assess confidence supplied by the regional MCZ project	Justification for confidence in ENG feature extent	Confidence in ENG feature extent	Justification for confidence in ENG feature presence	Confidence in ENG feature presence	Expert judgment used.	High	<b>New Feature</b> -Presence of Sea pen and burrowing meagfauna communities is supported by habitat data points which intersect with the full coverage habitat map from survey with a >58% MESH confidence score.	
						Number of ENG species data points 6 yrs old or less.			
						Number of ENG species data points between 6 & 12 yrs old			
						Number of ENG species data points older than 12 yrs.			
						% agreement with ENG's parent feature (No BGS points)			
						% agreement with ENG feature (no BGS points)			
						% agreement with ENG's parent feature			
						% agreement with ENG feature			
						Points that have been used in the assessment of ENG feature across the recommended extent.			
						Points which agree only with the ENG's parent feature			
Points which disagree with the ENG feature and parent feature									
Points which verify the ENG feature.	4								
Site/Feature Code (Unique ID)	NG 15, HOCl_18								
ENG feature	HOCl_18 Sea pen and burrowing megafauna communities								

North East of Farnes Deep pMCZ– Confidence Assessment											
General comments on decision made											
Data source of presence and extent map used to assess confidence supplied by the regional MCZ project											
Justification for confidence in ENG feature extent											
Confidence in ENG feature extent											
Justification for confidence in ENG feature presence											
Confidence in ENG feature presence											
Expert judgment used.											
Number of ENG species data points 6 yrs old or less.											
Number of ENG species data points between 6 &12 yrs old											
Number of ENG species data points older than 12 yrs.											
% agreement with ENG's parent feature (No BGS points)											
% agreement with ENG feature (no BGS points)											
% agreement with ENG's parent feature											
% agreement with ENG feature											
Points that have been used in the assessment of ENG feature across the recommended extent.											
Points which agree only with the ENG's parent feature											
Points which disagree with the ENG feature and parent feature											
Points which verify the ENG feature.											
Site/Feature Code (Unique ID)											
ENG feature											
HOCL_21 Subtidal sands and gravels											
NG 15_HOCL_21											
23											
N/A											
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**Table 22: South-West Deep (West) pMCZ Data Table**

South-West Deep (West) pMCZ - Data													
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	Data Source	Data Type	Collection Method if point data	Number of points which verify the ENG feature	Number of points which disagree with the ENG feature and ENG's parent feature	Name of habitat recorded by points not in agreement	Number of points recording only the ENG's parent feature	Name of habitat recorded by parent feature points	Year collected (for species FOCI and temporally varying habitats)	Comment on data source	External data source reference
A5.1 Subtidal coarse sediment	FS 02_A5.1	BSH	UKSeaMap 2010	Habitat map (modelled)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<a href="http://jncc.defra.gov.uk/">http://jncc.defra.gov.uk/</a> [UK SeaMap 2010 Interactive Map]
A5.1 Subtidal coarse sediment	FS 02_A5.1	BSH	BGS seabed sediments data points	PSA points	Grabs	9	N/A	N/A	1	A5.4	N/A	Particle Size Analysis used to provide habitat type in Modified Folk classification. This has been converted by JNCC to the EUNIS habitat using JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at <a href="http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf">http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf</a>	British Geological Society <a href="mailto:enquiries@bgs.ac.uk">enquiries@bgs.ac.uk</a>
A5.2 Subtidal sand	FS 02_A5.2	BSH	UKSeaMap 2010	Habitat map (modelled)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<a href="http://jncc.defra.gov.uk/">http://jncc.defra.gov.uk/</a> [UK SeaMap 2010 Interactive Map]
A5.2 Subtidal sand	FS 02_A5.2	BSH	BGS seabed sediments data points	PSA points	Grabs	58	N/A	N/A	1	A5.1	N/A	Particle Size Analysis used to provide habitat type in Modified Folk classification. This has been converted by JNCC to the EUNIS habitat using JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at <a href="http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf">http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf</a>	British Geological Society <a href="mailto:enquiries@bgs.ac.uk">enquiries@bgs.ac.uk</a>

South-West Deepes (West) pMCZ - Data																
External data source reference	Data layer used for extent?	Data layer used for presence?	Conversion to EUNIS habitat using JNCC correlation table*	Comment on data source	Year collected (for species FOCI and temporally varying habitats)	Name of habitat recorded by parent feature points	Number of points recording only the ENG's parent feature	Name of habitat recorded by points not in agreement	Number of points which disagree with the ENG feature and ENG's parent feature	Number of points which verify the ENG feature	Collection Method if point data	Data Type	Data Source	ENG Feature Type	Site/Feature Code (Unique ID)	ENG Feature
<a href="http://jncc.defra.gov.uk/">http://jncc.defra.gov.uk/</a> [UK SeaMap 2010 Interactive Map]	Yes	Yes	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Habitat map (modelled)	UKSeaMap 2010	BSH	FS 02_A5.4	A5.4 Subtidal mixed sediments
British Geological Society <a href="mailto:enquiries@bgs.ac.uk">enquiries@bgs.ac.uk</a>	Yes	Yes	Yes	Particle Size Analysis used to provide habitat type in Modified Folk classification. This has been converted by JNCC to the EUNIS habitat using JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at <a href="http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf">http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf</a> One extra point for A5.4 Subtidal mixed sediments was found on the recommended feature extent by the regional MCZ project for A5.1 Subtidal coarse sediment	N/A	N/A	N/A	N/A	N/A	2	Grabs	PSA points	BGS seabed sediments data points	BSH	FS 02_A5.4	A5.4 Subtidal mixed sediments
<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 report no. 8 task 2A pdf]	Yes	Yes	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Habitat map	MB0102 Task 2A	Geological feature	FS 02_G8	Celtic Sea Relict Sandbanks

\* See JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at [http://jncc.defra.gov.uk/pdf/EUNIS\\_Correlation\\_2007-11\\_20101206v2.pdf](http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf). For correlation between the EUNIS classification and PSA/ modified Folk substrata see <http://www.searchmesh.net/PDF/BGS> Sand and muddy sand habitats are EUNIS A5.2 Subtidal sand, Mud and Sandy mud habitats are EUNIS A5.3 Subtidal mud, Coarse sediment habitat is EUNIS A5.1 Subtidal coarse sediment and Mixed sediments habitat is EUNIS A5.4 Subtidal mixed sediments.

**Table 23: South-West Deeps (West) pMCZ Confidence Assessment**

South-West Deeps (West) pMCZ– Confidence Assessment																		
General comments on decision made																		
Data source of presence and extent map used to assess confidence supplied by the regional MCZ project																		
Justification for confidence in ENG feature extent																		
Confidence in ENG feature extent																		
Justification for confidence in ENG feature presence																		
Confidence in ENG feature presence																		
Expert judgment used.																		
Number of ENG species data points 6 yrs old or less.																		
Number of ENG species data points between 6 & 12 yrs old																		
Number of ENG species data points older than 12 yrs.																		
% agreement with ENG's parent feature (No BGS points)																		
% agreement with ENG feature (no BGS points)																		
% agreement with ENG's parent feature																		
% agreement with ENG feature																		
Points that have been used in the assessment of ENG feature across the recommended extent.																		
Points which agree only with the ENG's parent feature																		
Points which disagree with the ENG feature and parent feature																		
Points which verify the ENG feature.																		
Site/Feature Code (Unique ID)																		
ENG feature																		
A5.1 Subtidal coarse sediment																		
A5.2 Subtidal sand																		

South-West Deeps (West) pMCZ– Confidence Assessment																																									
General comments on decision made		Data source of presence and extent map used to assess confidence supplied by the regional MCZ project		Justification for confidence in ENG feature extent		Confidence in ENG feature extent		Justification for confidence in ENG feature presence		Confidence in ENG feature presence		Expert judgment used.		Number of ENG species data points 6 yrs old or less.		Number of ENG species data points between 6 & 12 yrs old		Number of ENG species data points older than 12 yrs.		% agreement with ENG's parent feature (No BGS points)		% agreement with ENG feature (no BGS points)		% agreement with ENG's parent feature		% agreement with ENG's parent feature		Points that have been used in the assessment of ENG feature across the recommended extent.		Points which agree only with the ENG's parent feature		Points which disagree with the ENG feature and parent feature		Points which verify the ENG feature.		Site/Feature Code (Unique ID)		ENG feature			
BGS sample points are the only data which verify the presence and extent of this feature. There is a small sample size and only one BGS point per polygon. As a result of this JNCC have assessed our confidence in feature extent as low.		UKSeaMap 2010				Low		Sample data covers more than 50% of A5.4 Subtidal mixed sediments. However, our confidence in the extent of A5.4 Subtidal mixed sediments is reduced due to the limited number of data points.		Moderate		Yes - Assessment of distribution of points within polygon		N/A		N/A		N/A		N/A		100		100		100		100		2		0		0		2		FS 02_A5.4		A5.4 Subtidal mixed sediments	
Bathymetry (and seismic) records clearly indicate the vertical topographical and areal coverage of large-scale geological or geomorphological features. Confidence in morphology is a direct parallel of confidence in the presence of a geo-feature, even without recourse to petrological or sedimentological information, and morphological confidence in maps is generally high. These data information were identified by the MB0102 Task 2A contract.		MB0102 Task 2a Tidal bank features polygon				High		Confidence in morphology is a direct parallel of confidence in the presence of a geo-feature and morphological confidence in maps is generally high.		High		No		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		FS 02_GB		Celtic Sea Relict Sandbanks			



**Table 24: Swallow Sand pMCZ Data Table**

<b>Swallow Sand pMCZ - Data</b>													
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	Data Source	Data Type	Collection Method if point data	Number of points which verify the ENG feature	Number of points which disagree with the ENG feature and ENG's parent feature.	Name of habitat recorded by points not in agreement	Number of points recording only the ENG's parent feature.	Name of habitat recorded by parent feature points	Year collected (for species FOCI and temporally varying habitats)	Comment on data source	External data source reference
A5.1 Subtidal coarse sediment	NG 16_A5.1	BSH	BGS seabed sediments data points	PSA points	Grabs	15	N/A	N/A	N/A	N/A	N/A	There are 15 data points that verify the recommended extent of EUNIS A5.1 Subtidal coarse sediment.  Particle Size Analysis used to provide habitat type in Modified Folk classification. This has been converted by JNCC to the EUNIS habitat using JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at <a href="http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf">http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf</a>	British Geological Society <a href="mailto:enquiries@bgs.ac.uk">enquiries@bgs.ac.uk</a>
A5.1 Subtidal coarse sediment	NG 16_A5.1	BSH	Cefas	Habitat points	Ground-truthing	N/A	N/A	N/A	1	A5.2	N/A	There is one Cefas habitat data point that verifies the parent habitat EUNIS A5 Sublittoral sediment.	Data acquired through the Cefas partnership. Please contact JNCC or Cefas direct to learn how to access this information.
A5.1 Subtidal coarse sediment	NG 16_A5.1	BSH	UKSeaMap 2010	Habitat map (modelled)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<a href="http://jncc.defra.gov.uk/">http://jncc.defra.gov.uk/</a> [UK SeaMap 2010 Interactive Map]

Swallow Sand pMCZ - Data													
External data source reference	Data layer used for extent?	Data layer used for presence?	Conversion to EUNIS habitat using JNCC correlation table *	Comment on data source	Year collected (for species FOCI and temporally varying habitats )	Name of habitat recorded by parent feature points	Number of points recording only the ENG's parent feature.	Name of habitat recorded by points not in agreement	Number of points which disagree with the ENG feature and ENG's parent feature.	Number of points which verify the ENG feature	Collection Method if point data	Data Type	Data Source
<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]	Yes	Yes	No	Cefas survey: Survey ID: CEND 3/12a: Grab samples with PSA results already converted to EUNIS.  12 points validate the Broadscale feature EUNIS A5.2 Subtidal sand. 28 further points validate the parent feature EUNIS A5 sublittoral sediment.	N/A	18 records of A5.2 9 records of A5.3 1 record of A5.4	28			12	Ground-truthing	PSA points	Cefas - MCZ verification survey
	Yes	Yes	No	Cefas survey: Survey ID: CEND 3/12a - Camera tows taking video and Stills. Only analysed stills were used in the evidence assessment, this reduces duplication from double counting of the video and the photographs taken along the same transect.  58 points validate the parent feature EUNIS A5 sublittoral sediment along only 2 video transects.	N/A	58 records of A5.4	58			0	Stills	EUNIS points	Cefas - MCZ verification survey
	Yes	Yes	No	Cefas survey: Survey ID: CEND 3/12a: Grab samples with PSA results already converted to EUNIS.  33 Points validate the Broadscale feature A5.2 Subtidal sand. 14 further points validate the parent feature EUNIS A5 sublittoral sediment.	N/A	10 records of A5.4 1 record of A5.3 3 records of A5.1	14		0	33	Ground-truthing	PSA points	Cefas - MCZ verification survey
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type											
A5.1 Subtidal coarse sediment	NG 16_A5.1	BSH											
A5.1 Subtidal coarse sediment	NG 16_A5.1	BSH											
A5.2 Subtidal sand	NG 16_A5.2	BSH											

Swallow Sand pMCZ - Data																
External data source reference	Data layer used for extent?	Data layer used for presence?	Conversion to EUNIS habitat using JNCC correlation table *	Comment on data source	Year collected (for species FOCI and temporally varying habitats )	Name of habitat recorded by parent feature points	Number of points recording only the ENG's parent feature.	Name of habitat recorded by points not in agreement	Number of points which disagree with the ENG feature and ENG's parent feature.	Number of points which verify the ENG feature	Collection Method if point data	Data Type	Data Source	ENG Feature Type	Site/Feature Code (Unique ID)	ENG Feature
<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 site reports]	Yes	Yes	No	Cefas survey: Survey ID: CEND 3/12a -Camera tows taking video and Stills. Only analysed stills were used in the evidence assessment, this reduces duplication from double counting of the video and the photographs taken along the same transect.  52 points validate the parent feature EUNIS A5 sublittoral sediment along only 2 video transects.	N/A	26 records of A5.4 26 records of A5.3	52		0	0	Stills	EUNIS points	Cefas - MCZ verification survey	BSH	NG_16_A5.2	A5.2 Subtidal sand
	Yes	Yes	Yes	There are 110 data points that verify the recommended extent of EUNIS A5.2 Subtidal sand and two data points that verify the parent feature EUNIS A5 Sublittoral sediment. There are five data points on the edge or just outside the edge of the recommended extent of EUNIS A5.2 Subtidal sand that also verify this feature.  Particle Size Analysis used to provide habitat type in Modified Folk classification. This has been converted by JNCC to the EUNIS habitat using JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at <a href="http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf">http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf</a>	N/A	1 of A5.1, 1 of A5.3	2	N/A	0	110	Grabs	PSA points	BGS seabed sediments data points	BSH	NG_16_A5.2	A5.2 Subtidal sand

Swallow Sand pMCZ - Data																
External data source reference	Data layer used for extent?	Data layer used for presence?	Conversion to EUNIS habitat using JNCC correlation table *	Comment on data source	Year collected (for species FOCI and temporally varying habitats )	Name of habitat recorded by parent feature points	Number of points recording only the ENG's parent feature.	Name of habitat recorded by points not in agreement	Number of points which disagree with the ENG feature and ENG's parent feature.	Number of points which verify the ENG feature	Collection Method if point data	Data Type	Data Source	ENG Feature Type	Site/Feature Code (Unique ID)	ENG Feature
Data acquired through the Cefas partnership. Please contact JNCC or Cefas direct to learn how to access this information.	Yes	Yes	No	There are four Cefas habitat data points of (Folk "S") EUNIS A5.2 Subtidal sand distributed well across the site.  There are two additional habitat data points located on the site boundary which also verify the feature EUNIS A5.2 Subtidal sand but these were not included in the assessment. There is one further habitat data point for EUNIS A5.2 Subtidal sand within the site but inside the recommended extent for EUNIS A5.1 Subtidal coarse sediment rather than inside the recommended extent for EUNIS A5.2 Subtidal sand.	N/A	N/A	0	N/A	0	4	Ground-truthing	Habitat points	Cefas	BSH	NG 16_A5.2	A5.2 Subtidal sand
	Yes	Yes	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Habitat map (modelled)	UKSeaMap 2010	BSH	NG 16_A5.2	A5.2 Subtidal sand
	Yes	Yes	No	The ENG states that Subtidal sands and gravels FOCI directly correlate with the broad-scale habitats EUNIS A5.1 Subtidal coarse sediment and EUNIS A5.2 Subtidal sand.  There are four Cefas habitat data points of (Folk "S") EUNIS A5.2 Subtidal sand distributed well across the site and 1 of A5.1 Subtidal coarse sediment	N/A	N/A	N/A	N/A	N/A	N/A	5	Ground-truthing	Habitat points	Cefas	Habitat FOCI	NG 16_HOCI_21

Swallow Sand pMCZ - Data																	
External data source reference																	
Data layer used for extent?																	
Data layer used for presence?																	
Conversion to EUNIS habitat using JNCC correlation table *																	
Comment on data source																	
Year collected (for species FOCI and temporally varying habitats.)																	
Name of habitat recorded by parent feature points																	
Number of points recording only the ENG's parent feature.																	
Name of habitat recorded by points not in agreement																	
Number of points which disagree with the ENG feature and ENG's parent feature.																	
Number of points which verify the ENG feature																	
Collection Method if point data																	
Data Type																	
Data Source																	
ENG Feature Type																	
Site/Feature Code (Unique ID)																	
ENG Feature																	
HOCl_21 Subtidal sands and gravels		NG 16_HOCl_21		Habitat FOCI		BGS seabed sediments data points		PSA points		126		Grabs		N/A		N/A	
HOCl_21 Subtidal sands and gravels		NG 16_HOCl_21		Habitat FOCI		MB0102 Task2C		Subtidal sands and gravels habitat map (modelled)		N/A		N/A		N/A		N/A	
The ENG states that Subtidal sands and gravels FOCI directly correlate with the broad-scale habitats EUNIS A5.1 Subtidal coarse sediment and EUNIS A5.2 Subtidal sand.																	
There are 126 data points that verify the extent of EUNIS A5.2 Subtidal sand and EUNIS A5.1 Subtidal coarse sediment.																	
Particle Size Analysis used to provide habitat type in Modified Folk classification. This has been converted by JNCC to the EUNIS habitat using JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at <a href="http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf">http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf</a>																	
HOCl_21 Subtidal sands and gravels		16_HOCl_21		Habitat FOCI		MB0102 Task2C		Subtidal sands and gravels habitat map (modelled)		N/A		N/A		N/A		N/A	
Modelled Subtidal sands gravels output from the MB102 Task 2C contract																	
British Geological Society <a href="mailto:enquiries@bgs.ac.uk">enquiries@bgs.ac.uk</a>																	
<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 report no. 16 pdf]																	

Swallow Sand pMCZ - Data														
External data source reference														
Data layer used for extent?														
Data layer used for presence?														
Conversion to EUNIS habitat using JNCC correlation table *														
Comment on data source														
Year collected (for species FOCI and temporally varying habitats )														
Name of habitat recorded by parent feature points														
Number of points recording only the ENG's parent feature.														
Name of habitat recorded by points not in agreement														
Number of points which disagree with the ENG feature and ENG's parent feature.														
Number of points which verify the ENG feature														
Collection Method if point data														
Data Type														
Data Source														
ENG Feature Type														
Site/Feature Code (Unique ID)														
ENG Feature														
HOCI_21 Subtidal sands and gravels														
HOCI_21 Subtidal sands and gravels														
HOCI_21 Subtidal sands and gravels														

Swallow Sand pMCZ - Data													
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	Data Source	Data Type	Collection Method if point data	Number of points which verify the ENG feature	Number of points which disagree with the ENG feature and ENG's parent feature.	Name of habitat recorded by points not in agreement	Number of points recording only the ENG's parent feature.	Name of habitat recorded by parent feature points	Year collected (for species FOCI and temporally varying habitats)	Comment on data source	External data source reference
North Sea glacial tunnel valleys (Swallow hole)	NG 16_G11	Geology	MB0102 Task2A	Habitat map	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Bathymetry (and seismic) records clearly indicate the vertical topographical and areal coverage of large-scale geological or geomorphological features. Confidence in morphology is a direct parallel of confidence in the presence of a geo-feature, even without recourse to petrological or sedimentological information, and morphological confidence in maps is generally high. These data information were identified by the MB0102 Task 2A contract.	<a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a> [MB0120 report no.8 task 2A pdf]

\* See JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at [http://jncc.defra.gov.uk/pdf/EUNIS\\_Correlation\\_2007-11\\_20101206v2.pdf](http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf). For correlation between the EUNIS classification and PSA/ modified Folk substrata see <http://www.searchmesh.net/PDF/BGS>. Sand and muddy sand habitats are EUNIS A5.2 Subtidal sand, Mud and Sandy mud habitats are EUNIS A5.3 Subtidal mud, Coarse sediment habitat is EUNIS A5.1 Subtidal coarse sediment and Mixed sediments habitat is EUNIS A5.4 Subtidal mixed sediments.

**Table 25: Swallow Sand pMCZ Confidence Assessment**

Swallow Sand pMCZ – Confidence Assessment	
General comments on decision made	
Data source of presence and extent map used to assess confidence supplied by the regional MCZ project	UKSeaMap 2010
Justification for confidence in ENG feature extent	Sample data well distributed across >50% of the recommended extent of EUNIS A5.1 Subtidal coarse sediment, however based on expert judgement we have retained a moderate score because, the percentage agreement across the feature is <90% .There is > 90% agreement of the parent feature across the site.
Confidence in ENG feature extent	Mod
Justification for confidence in ENG feature presence	
	Presence of EUNIS A5.1 Subtidal coarse sediment supported by multiple ground-truthing records (more than five) >90% agreement with the parent feature EUNIS A5 Sublittoral sediment.
Confidence in ENG feature presence	High
Expert judgment used.	No
Number of ENG species data points 6 yrs old or less.	N/A
Number of ENG species data points between 6 & 12 yrs old	N/A
Number of ENG species data points older than 12 yrs.	N/A
% agreement with ENG's parent feature (No BGS points)	100
% agreement with ENG feature (no BGS points)	27
% agreement with ENG's parent feature	100
% agreement with ENG feature	24
Points that have been used in the assessment of ENG	114
Points which agree only with the ENG's parent feature	87
Points which disagree with the ENG feature and parent feature	0
Points which verify the ENG feature.	27
Site/Feature Code (Unique ID)	NG_16_A5.1
ENG feature	A5.1 Subtidal coarse sediment



Swallow Sand pMCZ – Confidence Assessment			
General comments on decision made			
Data source of presence and extent map used to assess confidence supplied by the regional MCZ project	UkSeaMap 2010	N/A	
Justification for confidence in ENG feature extent	Sample data well distributed across >50% of the recommended extent of EUNIS A5.2 Subtidal sand		
Confidence in ENG feature extent	High		
Justification for confidence in ENG feature presence	Presence of EUNIS A5.2 Subtidal sand supported by multiple ground-truthing records, >50% agreement across records for EUNIS A5.2 Subtidal sand and >90% agreement with the parent feature EUNIS A5 Sublittoral sediment. Confidence in presence has been increased to high. This is to account for the fact that there is a high ratio of video tow data points (across only two stations) compared to the grab data points. The latter are more evenly spaced across the site and therefore collectively are more representative of the presence of sand site. If the video tow data were aggregated within each of the two stations, the % agreement would increase to 89%.		
Confidence in ENG feature presence	High		
Expert judgment used.	No		
Number of ENG species data points 6 yrs old or less.	N/A		
Number of ENG species data points between 6 & 12 yrs old	N/A		
Number of ENG species data points older than 12 yrs.	N/A		
% agreement with ENG's parent feature (No BGS points)	100		
% agreement with ENG feature (no BGS points)	36		
% agreement with ENG's parent feature	100		
% agreement with ENG feature	68		
Points that have been used in the assessment of ENG	215		
Points which agree only with the ENG's parent feature	68		
Points which disagree with the ENG feature and parent feature	0		
Points which verify the ENG feature.	147		
Site/Feature Code (Unique ID)	NG_16_A5.2		
ENG feature	A5.2 Subtidal sand		

Swallow Sand pMCZ – Confidence Assessment			
General comments on decision made			
Data source of presence and extent map used to assess confidence supplied by the regional MCZ project	UKSeaMap 2010	The ENG states that Subtidal sands and gravels FOCI directly correlate with the broad-scale habitats EUNIS A5.1 Subtidal coarse sediment and EUNIS A5.2 Subtidal sand. This feature has been reassessed on the combined extent of A5.1 and A 5.2 from UKSeaMap2010. This would result in a Moderate confidence score because of the conflicting data reflected in the percent agreement in A5.1 Subtidal Coarse Sediment. However, expert judgement was applied and we have high confidence in the presence of sands and gravels due to the high confidence in the presence of A5.2 Subtidal sands.	
Justification for confidence in ENG feature extent			
Confidence in ENG feature extent	High	Sample data well distributed across >50% of the recommended extent of Subtidal sands and gravels FOCI.	
Justification for confidence in ENG feature presence			
Confidence in ENG feature presence	High	Presence of Subtidal sands and gravels FOCI supported by multiple ground-truthing records >50% agreement across records for Subtidal sands and gravels FOCI. This would result in a Moderate confidence score because of the conflicting data reflected in the percent agreement in EUNIS A5.1 Subtidal coarse sediment. However, expert judgement was applied and we have high confidence in the presence of sands and gravels due to the high confidence in the presence of EUNIS A5.2 Subtidal sands.	
Expert judgment used.		Yes - An exception was applied to presence.	
Number of ENG species data points 6 yrs old or less.	N/A		
Number of ENG species data points between 6 &12 yrs old	N/A		
Number of ENG species data points older than 12 yrs.	N/A		
% agreement with ENG's parent feature (No BGS points)	N/A		
% agreement with ENG feature (no BGS points)	28		
% agreement with ENG's parent feature	N/A		
% agreement with ENG feature	56		
Points that have been used in the assessment of ENG	318		
Points which agree only with the ENG's parent feature	N/A		
Points which disagree with the ENG feature and parent feature	139		
Points which verify the ENG feature.	179		
Site/Feature Code (Unique ID)	NG_16_HOCL_21		
ENG feature	HOCL_21 Subtidal sands and gravels		

Swallow Sand pMCZ – Confidence Assessment	
General comments on decision made	
Data source of presence and extent map used to assess confidence supplied by the regional MCZ project	MB0102 Task 2A features polygon
Justification for confidence in ENG feature extent	Confidence in morphology is a direct parallel of confidence in the presence of a geo-feature and morphological confidence in maps is generally high.
Confidence in ENG feature extent	High
Justification for confidence in ENG feature presence	Confidence in morphology is a direct parallel of confidence in the presence of a geo-feature and morphological confidence in maps is generally high.
Confidence in ENG feature presence	High
Expert judgment used.	No
Number of ENG species data points 6 yrs old or less.	N/A
Number of ENG species data points between 6 & 12 yrs old	N/A
Number of ENG species data points older than 12 yrs.	N/A
% agreement with ENG's parent feature (No BGS points)	N/A
% agreement with ENG feature (no BGS points)	N/A
% agreement with ENG's parent feature	N/A
% agreement with ENG feature	N/A
Points that have been used in the assessment of ENG	N/A
Points which agree only with the ENG's parent feature	N/A
Points which disagree with the ENG feature and parent feature	N/A
Points which verify the ENG feature.	N/A
Site/Feature Code (Unique ID)	NG_16_G11
ENG feature	North Sea glacial tunnel valleys (Swallow hole)

**Table 26: The Canyons pMCZ Data Table**

The Canyons pMCZ - Data													
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	Data Source	Data Type	Collection Method if point data	Number of points which verify the ENG feature	Number of points which disagree with the ENG feature and ENG's parent feature	Name of habitat recorded by points not in agreement	Number of points recording only the ENG's parent feature	Name of habitat recorded by parent feature points	Year collected (for species FOCI and temporally varying habitats )	Comment on data source	Conversion to EUNIS habitat using JNCC correlation table *
A5.1 Subtidal coarse sediment	FS 01_A5.1	BSH	JNCC/MESH Canyons Survey habitat map (GUI: GB000971)	Habitat map from survey	N/A	N/A	N/A	N/A	N/A	N/A	N/A	This polygon is not validated by any ground-truthing samples within the site	No
A5.2 Subtidal sand	FS 01_A5.2	BSH	UKSeaMap 2010	Habitat map (modelled)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	This is a small polygon and likely to be an artefact of data modelling. It is not supported by any ground-truthing samples.	No
A6 Deep-sea bed	FS 01_A6	BSH	JNCC/MESH Canyons Survey data points	Ground-truthing sampling data points	Video and photo sampling	26	0	N/A	0	N/A	N/A	A total of 9495 analysed photos were taken along the 26 video transects at the sample stations. All of these are A6. The numbers of each EUNIS Level 3 feature identified within the photos are provided below. Feature: Number of Points - A6.11: 1600; A6.14: 17; A6.2: 446; A6.22: 2108; A6.3: 1496; A6.5: 181; A6.4: 3039; A6.611: 608	No
A6 Deep-sea bed	FS 01_A6	BSH	UKSeaMap 2010	Habitat map (modelled)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	The UK SeaMap 2010 bathymetry technical report (JNCC, 2011: Fionnuala McBreen, Natalie Askew & Andrew Cameron. UKSeaMap 2010 Technical Report 1, Bathymetry) shows that there is high confidence that the A6 feature lies in the deep circalittoral zone beyond 200m. See figure 5 on p6 of the technical report. There is good coverage of depth sounding within the site (see fig 2 on p6 of the technical report).	No

The Canyons pMCZ - Data													
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	Data Source	Data Type	Collection Method if point data	Number of points which verify the ENG feature	Number of points which disagree with the ENG feature and ENG's parent feature	Name of habitat recorded by points not in agreement	Number of points recording only the ENG's parent feature	Name of habitat recorded by parent feature points	Year collected (for species FOCI and temporally varying habitats )	Comment on data source	External data source reference
A6 Deep-sea bed	FS 01_A6	BSH	Astrium Bathymetry	Bathymetry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	The EUNIS habitat A6 is defined by the 200m depth barrier. The Atrium bathymetry information indicates the entire recommended extent of the feature A6 is below 200m and a confidence score of 6 (out of a possible 9) accompanies the depth values here.	For external data source contact Defra or JNCC
A6 Deep-sea bed	FS 01_A6	BSH	JNCC/MESH Canyons Survey habitat map (GUI: GB000971)	Habitat map from survey	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Polygons for the deep-sea broad-scale habitat contain biological validation samples.	<a href="http://www.searcmesh.net/">http://www.searcmesh.net/</a> [MESH Interactive Map]
Cold-water coral reefs	FS 01_HOCL_2	FOCI habitat	JNCC/MESH Canyons Survey data points	Ground-truthing sampling data points	Video and photo sampling	1	0	N/A	N/A	N/A	N/A	A total of 515 analysed photos were taken (within the extent of the cold water coral reefs feature as recommended by the regional MCZ project) along the one transect which are all A6.611 = Deep sea <i>Lophelia pertusa</i> reef, which is cold-water coral reef. There are also further 5 photos from the same transect verifying A6.611 = Deep sea <i>Lophelia pertusa</i> reef within the rMCZ but located outside the recommended extent of the feature proposed by the regional MCZ project.	<a href="http://www.searcmesh.net/">http://www.searcmesh.net/</a> [MESH Interactive Map]

The Canyons pMCZ - Data																
External data source reference																
Data layer used for extent?																
Data layer used for presence?																
Conversion to EUNIS habitat using JNCC correlation table *																
Comment on data source																
Polygons for the Deep sea <i>Lophelia pertusa</i> reef (A6.611) habitat contain biological validation samples.																
Year collected (for species FOCI and temporally varying habitats )																
Name of habitat recorded by parent feature points																
Number of points recording only the ENG's parent feature																
Name of habitat recorded by points not in agreement																
Number of points which disagree with the ENG feature and ENG's parent feature																
Number of points which verify the ENG feature																
Collection Method if point data																
Data Type																
Habitat map from survey																
Data Source																
JNCC/MESH Canyons Survey habitat map (GUI: GB000971)																
ENG Feature Type																
FOCI habitat																
Site/Feature Code (Unique ID)																
FS 01_HOCI_2																
ENG Feature																
HOCI_2 Cold-water coral reefs																

\* See JNCC's 'Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection' available at [http://jncc.defra.gov.uk/pdf/EUNIS\\_Correlation\\_2007-11\\_20101206v2.pdf](http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf). For correlation between the EUNIS classification and PSA/ modified Folk substrata see <http://www.searchmesh.net/PDF/BGS>. Sand and muddy sand habitats are EUNIS A5.2 Subtidal sand, Mud and Sandy mud habitats are EUNIS A5.3 Subtidal mud, Coarse sediment habitat is EUNIS A5.1 Subtidal coarse sediment and Mixed sediments habitat is EUNIS A5.4 Subtidal mixed sediments.

**Table 27: The Canyons pMCZ Confidence Assessment**

The Canyons pMCZ – Confidence Assessment														
General comments on decision made		Data source of presence and extent map used to assess confidence supplied by the regional MCZ project		Justification for confidence in ENG feature extent		Confidence in ENG feature extent		Justification for confidence in ENG feature presence		Confidence in ENG feature presence				
										Expert judgment used.				
										Number of ENG species data points 6 yrs old or less.				
										Number of ENG species data points between 6 & 12 yrs old				
										Number of ENG species data points older than 12 yrs.				
										% agreement with ENG's parent feature (No BGS points)				
										% agreement with ENG's parent feature				
										% agreement with ENG feature				
										Points that have been used in the assessment of ENG feature across the recommended extent.				
										Points which agree only with the ENG's parent feature				
										Points which disagree with the ENG feature and parent feature				
										Points which verify the ENG feature.				
										Site/Feature Code (Unique ID)				
										ENG feature				
A5.1	Subtidal coarse sediment	FS 01_A5.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	Low	Only modelled data available.		
A5.2	Subtidal sand	FS 01_A5.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	Low	Only modelled data available.		
A6	Deep-sea bed	FS 01_A6	26	0	N/A	26	100.00	N/A	N/A	No	High	The MESH South-West Approaches Canyons habitat map is based on survey data, including acoustic and biological ground-truthing, and has a confidence score >58%. The polygon for EUNIS BSH A6 Deep-seabed contains biological validation samples.		
HOCI_2	Cold-water coral reefs	FS 01_HOCI_2	1	0	N/A	1	100.00	N/A	N/A	No	High	The MESH South-West Approaches Canyons habitat map is based on survey data, including acoustic and biological ground-truthing, and has a confidence score >58%. Polygons for the habitat FOCI cold water coral reefs contain biological validation samples.		

## Annex 5: Assessment of Feature Condition

The tables in [Annex 5](#) detail the revised assessment of feature condition for the six offshore sites in Tranche One of the MCZ designation process. The assessments take account of any new data, including survey data that has been made available since the close of the public consultation on Tranche One MCZs in March 2013. Any features with a vulnerability of **none**, **unknown** or **N/A** have been removed from the tables in this document, leaving only the features assessed with a vulnerability of **High**, **Moderate** or **Low**. The full tables are published on the [JNCC website](#).

With the above applied, only East of Haig Fras pMCZ remains, with the features, including the mosaic feature, assigned High, Moderate or Low vulnerability.

**Table 28: East of Haig Fras pMCZ Vulnerability Assessment**

Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
FS 07	A5.1 Subtidal coarse sediment	Physical change (to another seabed type)	Infrastructure - cables & pipelines (Operation)	M	Low	Four active and three inactive cables cross the feature (TCE 04/13). This activity is not licensed.	Low
FS 07	A5.1 Subtidal coarse sediment	Shallow abrasion/penetration: damage to seabed surface and penetration $\leq 25\text{mm}$	Fishing - benthic trawling	L-M	M	Using VMS data showing UK and EU fishing effort, a Moderate exposure has been assigned as the feature is exposed to between 400 and 500 hours of beam and demersal activity, with the highest level of activity focussed on the bottom SE corner of the site	Moderate
FS 07	A5.1 Subtidal coarse sediment	Structural abrasion/penetration: Structural damage to seabed $>25\text{mm}$	Infrastructure - cables & pipelines (Operation)	L-M	Low	Four active and three inactive cables cross the feature (TCE 04/13). This activity is not licensed.	Low
FS 07	A5.1 Subtidal coarse sediment	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	NS-H	M	Using VMS data showing UK and EU fishing effort, a moderate exposure has been assigned as the feature is exposed to between 400 and 500 hours of beam and demersal activity, with the highest level of activity focussed on the bottom SE corner of the site	High
FS 07	A4.2 Moderate energy circalittoral rock	Physical change (to another seabed type)	Infrastructure - cables & pipelines (Operation)	M-H	Low	Four active and three inactive cables cross the feature (TCE 04/13). This activity is not licensed.	The vulnerability is assessed as <b>low</b> as the footprint of the cables to the feature is very low.



Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
FS 07	A4.2 Moderate energy circalittoral rock	Shallow abrasion/penetration: damage to seabed surface and penetration $\leq 25\text{mm}$	Fishing - benthic trawling	M-H	M	Using VMS data showing UK and EU fishing effort, a moderate exposure has been assigned as the feature is exposed to between 400 and 500 hours of beam and demersal activity, with the highest level of activity focussed on the bottom SE corner of the site	High
FS 07	A4.2 Moderate energy circalittoral rock	Structural abrasion/penetration: Structural damage to seabed $> 25\text{mm}$	Infrastructure - cables & pipelines (Operation)	M-H	Low	Four active and three inactive cables cross the feature (TCE 04/13). This activity is not licensed.	The vulnerability is assessed as <b>low</b> as the footprint of the cables to the feature is very low.
FS 07	A4.2 Moderate energy circalittoral rock	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	L-H	M	Using VMS data showing UK and EU fishing effort, a moderate exposure has been assigned as the feature is exposed to between 400 and 500 hours of beam and demersal activity, with the highest level of activity focussed on the bottom SE corner of the site	High
FS 07	A5.2 Subtidal Sand	Physical change (to another seabed type)	Infrastructure - cables & pipelines (Operation)	H	Low	Four active and three inactive cables cross the feature (TCE 04/13). This activity is not licensed.	The vulnerability is assessed as <b>low</b> as the footprint of the cables to the feature is very low.
FS 07	A5.2 Subtidal Sand	Shallow abrasion/penetration: damage to seabed surface and penetration $\leq 25\text{mm}$	Fishing - benthic trawling	NS-M	M	Using VMS data showing UK and EU fishing effort, a moderate exposure has been assigned as the feature is exposed to between 400 and 500 hours of beam and demersal activity, with the highest level of activity focussed on the bottom SW corner of the site	Moderate
FS 07	A5.2 Subtidal Sand	Structural abrasion/penetration: Structural damage to seabed $> 25\text{mm}$	Infrastructure - cables & pipelines (Operation)	L-M	Low	Four active and three inactive cables cross the feature (TCE 04/13). This activity is not licensed.	Low
FS 07	A5.2 Subtidal Sand	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	NS-M	M	Using VMS data showing UK and EU fishing effort, a moderate exposure has been assigned as the feature is exposed to between 400 and 500 hours of beam and demersal activity, with the highest level of activity focussed on the bottom SW corner of the site	Moderate
FS 07	A5.3 Subtidal Mud	Physical change (to another seabed type)	Infrastructure - cables & pipelines (Operation)	M	Low	Four active and three inactive cables cross the feature (TCE 04/13). This activity is not licensed.	Low
FS 07	A5.3 Subtidal Mud	Shallow abrasion/penetration: damage to seabed surface and penetration $\leq 25\text{mm}$	Fishing - benthic trawling	M	Low	Using VMS data showing UK and EU fishing effort, a low exposure has been assigned as the feature is exposed to between 150 and 320 hours of beam and demersal activity, with the highest level of activity focussed on the bottom SW corner of the site	Low

Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
FS 07	A5.3 Subtidal Mud	Structural abrasion/penetration: Structural damage to seabed >25mm	Infrastructure - cables & pipelines (Operation)	M	Low	Four active and three inactive cables cross the feature (TCE 04/13). This activity is not licensed.	Low
FS 07	A5.3 Subtidal Mud	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	L-M	Low	Using VMS data showing UK and EU fishing effort, a low exposure has been assigned as the feature is exposed to between 150 and 320 hours of beam and demersal activity, with the highest level of activity focussed on the bottom SW corner of the site	Low

**Table 29: East of Haig Fras pMCZ Vulnerability Assessment – Mosaic A5.1/A5.4 Habitat**

Site Code	Feature 1	Feature 2	Pressure	Activity	Sensitivity Feature 1	Sensitivity Feature 2	Sensitivity for overall mosaic feature	Exposure	Comment	Vulnerability
FS 07	A5.1 Subtidal coarse sediment	A5.4 Subtidal mixed sediments	Physical change (to another seabed type)	Infrastructure - cables & pipelines (Operation)	M	H	H	Low	Four active and three inactive cables cross the feature (TCE 04/13). This activity is not licensed.	The vulnerability is assessed as <b>low</b> as the footprint of the cables to the feature is very low.
FS 07	A5.1 Subtidal coarse sediment	A5.4 Subtidal mixed sediments	Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm	Fishing - benthic trawling	L-M	H	H	M	Using VMS data showing UK and EU fishing effort, a moderate exposure has been assigned as the feature is exposed to between 400 and 500 hours of beam and demersal activity, with the highest level of activity focussed on the SE corner of the site	High
FS 07	A5.1 Subtidal coarse sediment	A5.4 Subtidal mixed sediments	Structural abrasion/penetration: Structural damage to seabed >25mm	Infrastructure - cables & pipelines (Operation)	L-M	H	H	Low	Four active and three inactive cables cross the feature (TCE 04/13). This activity is not licensed.	The vulnerability is assessed as <b>low</b> as the footprint of the cables to the feature is very low.
FS 07	A5.1 Subtidal coarse sediment	A5.4 Subtidal mixed sediments	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	NS-H	M	NS-H	Moderate	Using VMS data showing UK and EU fishing effort, a moderate exposure has been assigned as the feature is exposed to between 400 and 500 hours of beam and demersal activity, with the highest level of activity focussed on the SE corner of the site	High