


# Scientific advice on possible offshore Marine Conservation Zones considered for consultation in 2015

**June 2014**

# Version control

Build status:

| Version | Date | Author | Reason/Comments |
|---|---|---|---|
| 1.0 | 23/12/2013 | N. Taylor | Initial draft layout |
| 1.2 | 26/02/2014 | N. Taylor | Addition of 1st subset assessments and narratives |
| 1.3 | 11/03/2014 | N. Taylor | Inclusion of comments from OP, LC, DT, AR and NVE |
| 1.4 | 13/03/2014 | N. Taylor | Inclusion of comments from JD |
| 1.5 | 08/04/2014 | H. Carr and B. Henshall | Updates to site narratives and document review |
| 1.7 | 28/04/2014 | H. Carr and B. Henshall | Document review and comments |
| 2.0 | 29/04/2014 | H. Carr and B.Henshall | Version for internal review of full draft advice |
| 3.0 | 12/05/2014 | H. Carr and B. Henshall | Version for draft submission to Defra and MMO |
| 4.0 | 23/05/2014 | H.Carr and O.Payne | Version for review by JNCC Committee MPA sub-group, MPA Technical Group, JNCC MCZ Evidence QA Group, Defra and the MMO |
| 5.0 | 27/06/2014 | O.Payne | Final version submitted to Defra |

Distribution list:

| Copy | Version | Date | Issued to |
|---|---|---|---|
| Electronic | 1.0 | 23/12/2013 | Ollie Payne and Jon Davies |
| Electronic | 1.2 | 04/03/2014 | Ollie Payne, Laura Cornick, Declan Tobin, Alice Ramsay & Neil V. Ellis |
| Electronic | 1.3 | 12/03/2014 | Jon Davies |
| Electronic | 2.0 | 29/04/2014 | Ollie Payne, Laura Cornick, Declan Tobin, Alice Ramsay, Neil V. Ellis & Jon Davies |
| Electronic | 3.0 | 12/05/2014 | Paul McLeod, Laura Weiss, Leanne Stockdale, Michael Coyle, Jon Davies |
| Electronic | 4.0 | 23/05/2014 | Paul McLeod, Laura Weiss, Leanne Stockdale, Michael Coyle, Bob Brown, Jade Berman, Richard Furness, Joe Horwood, Lynda Warren, Natalie Askew, Neil Golding, Richard Ferris, Steve Wilkinson, Amy Ridgeway, Angela Moffat, Hugh Wright, Ian Enlander, Joe Breen, Jon Davies, Julie Black, Kirsten Ramsay, Liz Pothanikat, Maggie Hatton-Ellis, Mary Lewis, Matthew Murphy, Natasha Lough, Neil McCulloch, Nigel Buxton, Samantha King, Sarah Cunningham, Stephanie Bennett |
| Electronic | 5.0 | 27/06/2014 | George Eustice MP, John Robbs, Kath Cameron, Paul McLeod, Jonathan Burney, John Goold, Jon Davies, Marcus Yeo, Prof Chris Gilligan |

**Cite as**:

JNCC, 2014. *Scientific advice on possible offshore Marine Conservation Zones considered for consultation in 2015.* Version 5.0, June 2014, JNCC, UK.

# Acknowledgements

The following JNCC staff were involved in the production of this report: Abigayil Blandon, Alice Cornthwaite, Alice Ramsay, Andrew Eggett, Beth Henshall, Dan Bayley, Declan Tobin, Hannah Carr, Hugh Wright, James Albrecht, Laura Cornick, Lindis Bergland, Megan Parry, Nikki Taylor and Ollie Payne. Review and quality assurance of the report were carried out by Amy Ridgeway, Jon Davies, John Goold, Neil V. Ellis and the members of the JNCC MCZ Evidence Quality Assurance Group. The members of JNCC's non-executive Marine Protected Areas Sub-Group provided an independent technical review of the text. JNCC acknowledges the input of all these people in the production of this report.

# Purpose of the Document

The UK Government's Department for Environment Food & Rural Affairs (**Defra**[1]) asked the Joint Nature Conservation Committee (**JNCC**) to provide a scientific assessment of some of the offshore Marine Conservation Zones (**rMCZs**) that were recommended by the regional MCZ projects in 2011[2]. Defra indicated those sites that were potentially suitable for a second tranche of Marine Conservation Zones (**MCZs**) that could go to a public consultation in 2015 (subsequently referred to as 'possible Tranche Two offshore rMCZs'). Defra also asked JNCC to assess any features that could be added to three sites previously designated in 2013.

The assessments were undertaken with the guidance of published Technical Protocols[3] used throughout the site assessments provided by JNCC and Natural England since the original recommendations were submitted by the regional project groups in 2011. The assessments in this report completed in 2014, encompass all new data made available since the completion of previous assessments for our 2012 advice[4] and in the case of the three designated sites, data available since the post consultation advice in 2013[5].

JNCC advised upon Defra's selection of 37 sites for possible inclusion in a second consultation of MCZs (referred to as the Tranche Two consultation)[6] (excluding previously designated MCZs), and 16 of those are found in the offshore environment (beyond 12 nautical miles offshore) or span the inshore-offshore boundary and fall under JNCC's auspices for advice and reporting. The remaining 19 sites are inshore (or span the boundary), and are under Natural England's direction. The 16 offshore sites are the focus of this present report, plus the three designated sites considered for the addition of further features:

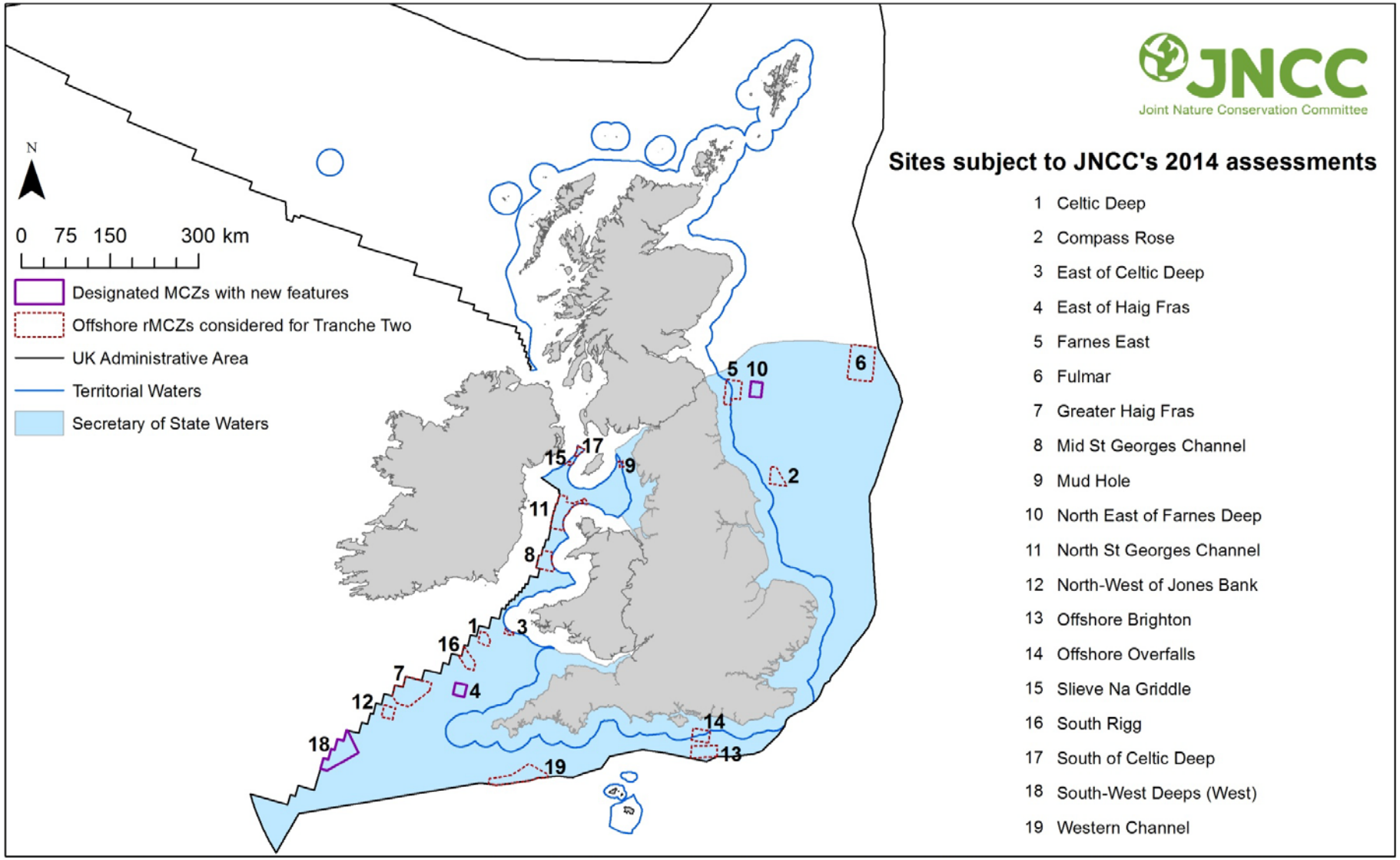
[1] The meaning of acronyms in bold throughout the text of this report can be found in Section 8
[2] The regional MCZ project final recommendation reports. Available at: http://jncc.defra.gov.uk/page-6230
[3] MCZ Technical Protocols. Available at: http://jncc.defra.gov.uk/page-5999
[4] JNCC and Natural England's advice on recommended Marine Conservation Zones 2012. Available at: http://jncc.defra.gov.uk/page-6229
[5] JNCC's advice on offshore Marine Conservation Zones proposed for designation in 2013. Available at: http://jncc.defra.gov.uk/page-6460
[6] Defra Marine Conservation Zone update: February 2014. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/285304/pb14141-mcz-update-201402.pdf

## The 16 possible Tranche Two offshore sites for consideration:

| | |
|---|---|
| **1. Celtic Deep rMCZ -** *Site Code: FS10* | **9. North St Georges Channel rMCZ –** *Site Code: ISCZ03* |
| **2. Compass Rose rMCZ –** *Site Code: NG12* | **10. North-West of Jones Bank rMCZ –** *Site Code: FS04* |
| **3. East of Celtic Deep rMCZ –** *Site Code: FS11* | **11. Offshore Brighton rMCZ –** *Site Code: BS14* |
| **4. Farnes East rMCZ –** *Site Code: NG14* | **12. Offshore Overfalls rMCZ –** Site Code: BS17 |
| **5. Fulmar rMCZ –** *Site Code: NG17* | **13. Slieve Na Griddle rMCZ –** *Site Code: ISCZ07* |
| **6. Greater Haig Fras rMCZ –** *Site Code: FS05* | **14. South of Celtic Deep rMCZ –** *Site Code: FS09* |
| **7. Mid St Georges Channel rMCZ –** *Site Code: ISCZ04* | **15. South Rigg rMCZ –** *Site Code: ISCZ06* |
| **8. Mud Hole rMCZ –** *Site Code: ISCZ01* | **16. Western Channel rMCZ –** *Site Code: FS12* |

## Designated sites with further features for consideration:

1. **East of Haig Fras MCZ -** *Site Code: FS07*
2. **North East of Farnes Deep MCZ -** *Site Code: NG15*
3. **South-West Deeps (West) MCZ -** *Site Code: FS02*




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# 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 form of MPA created under the Marine and Coastal Access Act 2009[7] to conserve marine animals, plants and their habitats, together with areas of seabed important for their geomorphological and geological features. By conserving these species, habitats and Earth science features, MCZs 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 first tranche of MCZs was designated in November 2013 after a comprehensive stakeholder-led process and public consultation. There were 27 designated in total[8] of which five are in the offshore environment. JNCC is now providing further advice on recommended MCZs (**rMCZ**) to be considered by Defra for a second tranche of MCZ designations to further contribute to the overall MPA network in the UK. This report details JNCC's site assessments for offshore sites put forward for possible consultation in Tranche Two by Defra[9], to better inform the final decision-making process about which sites should go forward to the second public consultation in 2015.

JNCC completed the site assessments between January and May 2014 for 16 possible Tranche Two offshore rMCZs, plus a further assessment of possible additional features for three MCZs designated in November 2013. Our report describes the assessments of confidence in feature presence and feature extent; confidence in feature condition; feature vulnerability and feature risk for the 16 possible Tranche Two sites and the features within the three designated MCZs. Our report also includes advice on where data support the designation of a feature or site from a scientific evidence based perspective.

Additional data have become available since the four regional MCZ projects recommended MCZs in 2011[10] both through the public consultation in 2013[11], and Defra data gathering contracts[12]. These data were

[7] Marine and Coastal Access Act 2009. Available at: http://www.legislation.gov.uk/ukpga/2009/23/contents
[8] MCZs designated in 2013. Available at: https://www.gov.uk/government/collections/marine-conservation-zone-2013-designations
[9] Defra Marine Conservation Zone update: February 2014. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/285304/pb14141-mcz-update-201402.pdf
[10] The regional MCZ project final recommendation reports. Available at: http://jncc.defra.gov.uk/page-6230
[11] Marine Conservation Zones: Consultation on proposals for designation in 2013. Available at: https://www.gov.uk/government/consultations/marine-conservation-zones-consultation-on-proposals-for-designation-in-2013
[12] MB0116. Available at: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18125&FromSearch=Y&Publisher=1&SearchText=MB0116&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description MB0120. Available at: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18221&FromSearch=Y&Publisher=1&SearchText=MB0120&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description

combined with the existing data to create an updated evidence base for the rMCZs. JNCC used all available data to update our previous assessments in 2012 of the features in each of the possible Tranche Two offshore sites, and our previous 2013 assessments of the designated sites; all our 2014 work used the relevant Technical Protocols[13].

In our report, JNCC provides advice using all available data to assess each feature within the possible Tranche Two offshore sites to provide a clear overview of the site based on the evidence available up to March 2014. Furthermore, recently acquired data were considered for the designated sites to inform any decision to add possible additional features to the designation orders of these sites.

A JNCC MCZ Evidence Quality Assurance (**QA**) Group reviewed the assessment process, and applied judgement where required to ensure that assessments in the levels of confidence in the presence and extent of features were consistent and appropriate, using a clearly described rationale. Additionally, JNCC commissioned an external contract to quality assure a proportion of the confidence assessments in feature presence and feature extent to ensure that due process had been correctly followed and all evidence was used appropriately in making decisions[14]. More information on this contract is provided in Annex 1.

JNCC assessed 111 features within the 16 offshore rMCZs and three existing offshore MCZs. We have **High** confidence in the presence of 71 features, **Moderate** confidence for 17 features, **Low** confidence for 14 features, **No** confidence for four features and five features have not been assessed due to limited/no data availability to support their presence within a site. We have **High** confidence in extent of 51 features, **Moderate** confidence in 23 features, **Low** confidence in 28 features, **No** confidence for four features and five features have not been assessed. There are 29 instances where confidence in feature presence is higher than confidence in feature extent.

JNCC reviewed the proposed General Management Approach for all 111 features. We concluded that 59 features require a **Recover** objective, and another 29 features require a **Maintain** objective. Of the remaining features, 22 were not assessed and one feature was assigned a **Maintain/Recover** objective.

Note that continuing from our post-consultation advice on Tranche One sites in 2013, we have not provided advice on previous recommendations for the habitat Feature of Conservation Importance (**FOCI**) **Subtidal sands and gravels**. The definition of this habitat FOCI is very broad and effectively contains the broad-scale habitats **Subtidal coarse sediment** and **Subtidal sand** that are separate features for possible designation. Protecting these individual broad-scale habitats will therefore protect the habitat FOCI by

[13] MCZ Technical Protocols. Available at: http://jncc.defra.gov.uk/page-5999
[14] JNCC Report No.519. Available at: http://jncc.defra.gov.uk/page-6658

default and therefore JNCC recommend that **Subtidal sands and gravels** should not go forward separately as a feature for possible designation[15].

JNCC reviewed the relationship between the habitat Features of Conservation Importance (**FOCI**) **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities,** and the broad scale habitat **Subtidal mud,** noting the clear overlap between these features in aspects of their definition. Consequently, we advise that the FOCI **Mud habitats in deep water** is not designated as a feature of a site where the site has **Subtidal mud** and **Sea-pen and burrowing megafauna communities** as proposed features, and these three habitats share the same spatial extent. JNCC consider there is limited extra conservation value in designating **Mud habitats in deep water** where that same area is afforded protection by its parent and component habitats. Therefore, in the case our 2014 advice, JNCC advise that **Mud habitats in deep water** are not designated as features of Celtic Deep rMCZ, Mud Hole rMCZ, North-West Jones Bank rMCZ, Slieve Na Griddle rMCZ and South Rigg rMCZ.

JNCC concluded there is sufficient evidence to designate the majority of features identified in the 16 offshore rMCZs and the three designated offshore MCZs. Specifically, and notwithstanding the previous paragraph, JNCC recommend that all the features covered in JNCC's 2014 advice within Celtic Deep rMCZ, East of Celtic Deep rMCZ, Greater Haig Fras rMCZ, Mid St Georges Channel rMCZ, Mud Hole rMCZ, North-West of Jones Bank rMCZ, Offshore Overfalls rMCZ and Slieve Na Griddle rMCZ have sufficient data to support their designation. The new features within East of Haig Fras MCZ, North East of Farnes Deep MCZ and South-West Deeps (West) MCZ could be added to the existing designation orders since there are sufficient data available.

Recent data recorded a specimen of the species FOCI **Fan mussel (*Atrina fragilis*)**, within South-West Deeps (West) MCZ. However, JNCC concluded there are not sufficient data available to recommend the feature for designation at this time.

JNCC note that Farnes East rMCZ, North St Georges Channel rMCZ, Offshore Brighton rMCZ, Compass Rose rMCZ, Fulmar rMCZ, South of Celtic Deep rMCZ, Western Channel rMCZ and South Rigg rMCZ have at least one feature within each site with limited data currently available, but the features have potentially high conservation interest. JNCC recommend that Defra consider the balance between the application of the precautionary principle and the data supporting each feature to assess whether it is appropriate to designate at the time.

[15] Supplementary advice on the Marine Conservation Zones feature of conservation importance subtidal sands and gravels - March 2013. Available at: http://jncc.defra.gov.uk/pdf/181113%20Supplementary%20advice%20on%20Subtidal%20sands%20and%20gravels.pdf

When compiling our advice, JNCC has endeavoured to comply with the Government Chief Scientific Adviser's guidelines for preparing scientific advice[16], and the recommendations of the Graham-Bryce report that reviewed the evidence process for selecting marine Special Areas of Conservation (**SACs**)[17]. JNCC has also applied its own internal Evidence Quality Policy[18] to ensure our advice is scientifically robust. Our advice has been comprehensively checked and quality assured through our internal systems, and reviewed by our independent non-executive MPA Sub Group. JNCC also commissioned an external contract to quality control a proportion of our confidence assessments in feature presence and feature extent as mentioned above. 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. More detailed information on the QA procedures followed during this advice package is presented in the Evidence QA statement of Annex 2.

In summary, additional data have become available for 15 of the 16 possible Tranche Two sites since JNCC's advice in 2012, and for additional features within three offshore sites designated in 2013. Of those features originally assessed in either 2012 or 2013, our confidence in the feature presence has increased in 34 out of 71 features, and our confidence in feature extent has increased in 42 out of the 71 features. A further 40 features were not previously considered in the sites and thus do not have an original assessment. JNCC concludes that sufficient evidence is now available to support the presence of features not originally recommended by the regional projects in 2011. JNCC recommends that Defra considers all these features for designation within these sites in 2015.

[16] Guidelines for preparing scientific advice. Available at: http://www.bis.gov.uk/go-science/science-in-government/strategy-and-guidance
[17] Graham-Bryce Report. Available at: https://www.gov.uk/government/publications/independent-review-of-the-evidence-process-for-selecting-marine-special-areas-of-conservation
[18] JNCC Evidence Quality Policy. Available at: http://jncc.defra.gov.uk/page-6675

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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[19] 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 in Figure 1, to create an ecologically coherent network in the UK's seas and contribute to wider European and global initiatives.

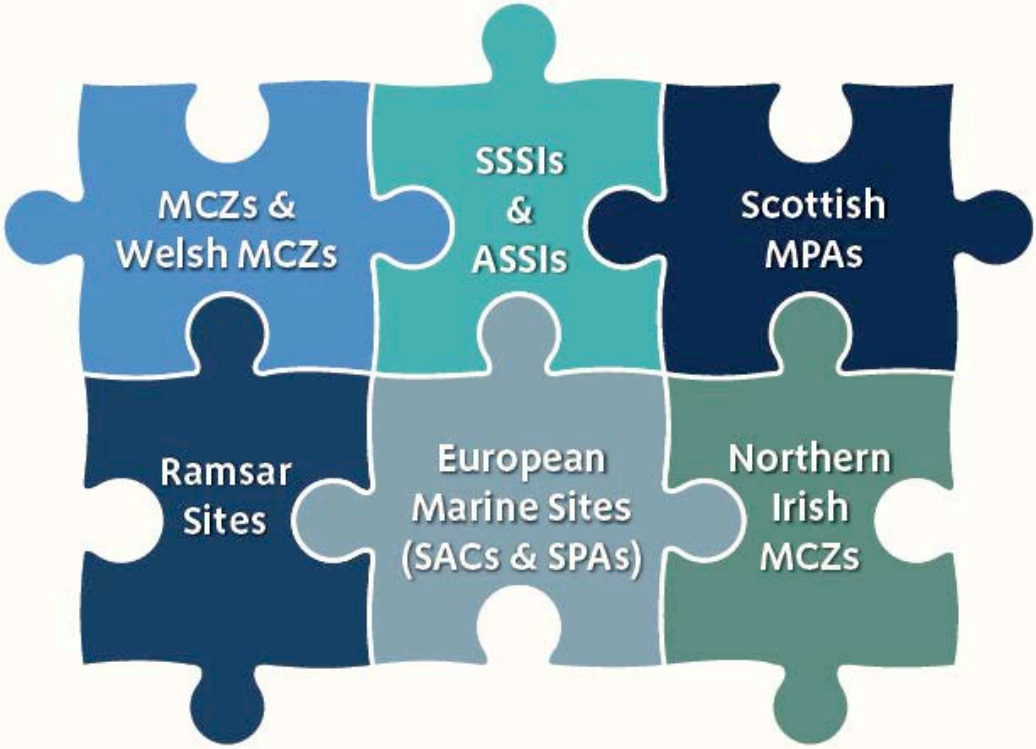
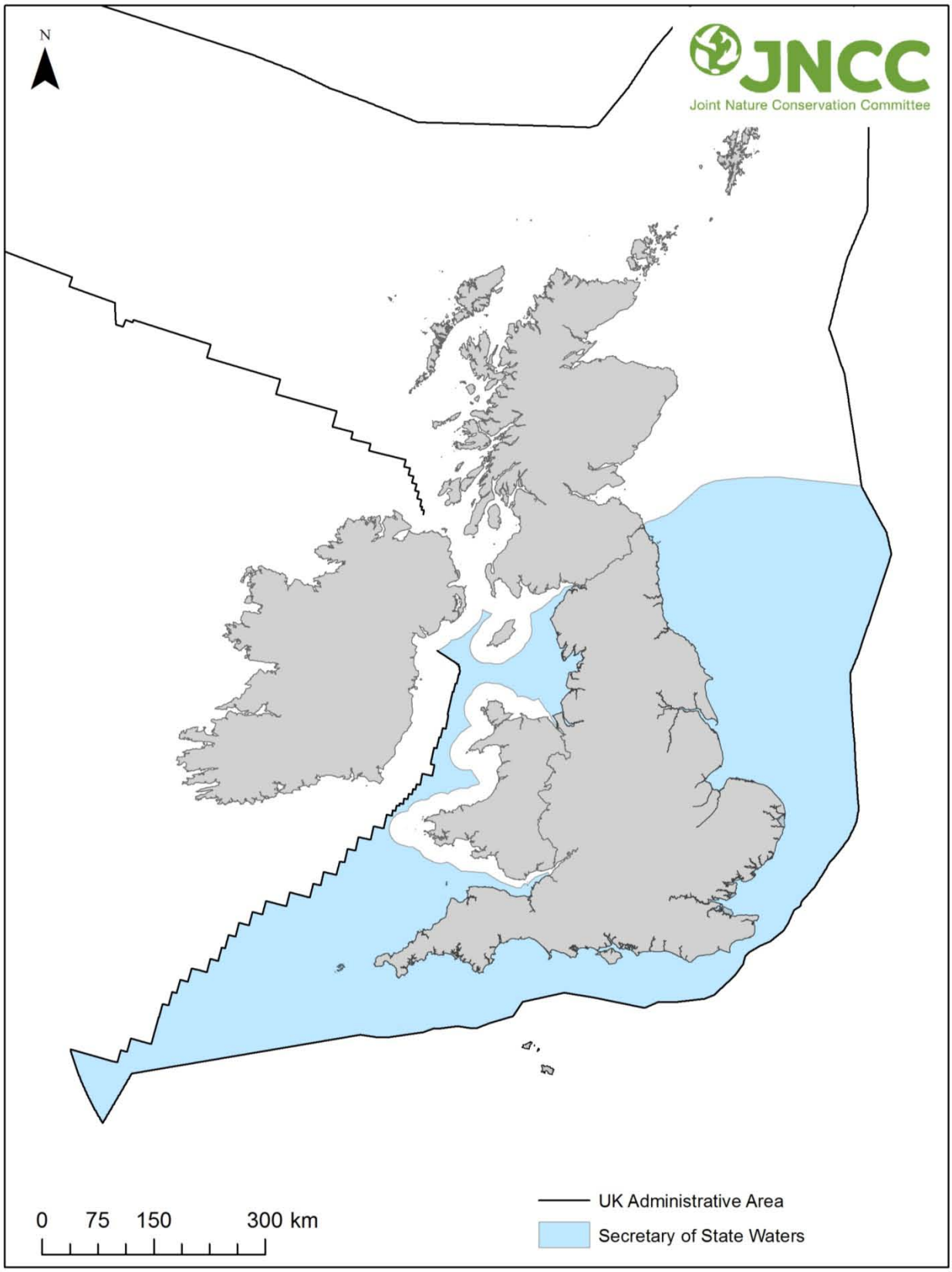



**Figure 1: Range of MPA Designations in the UK**

The MCZ project encompassed the English, Northern Irish and Welsh offshore regions, and English inshore waters, known collectively as 'Secretary of State Waters': the marine area where the Secretary of State has responsibility for nature conservation (shown in Figure 2). Under their jurisdictions, the devolved administrations for Northern Ireland, Scotland and Wales have their own projects in place to identify and designate MPAs in their waters. Once complete, the UK projects will combine to form an ecologically coherent network of MPAs, working together to better manage UK seas for a sustainable future. A timeline of the key stages of the MCZ process is outlined in Annex 3.

[19] Marine and Coastal Access Act 2009. Available at: http://www.legislation.gov.uk/ukpga/2009/23/contents



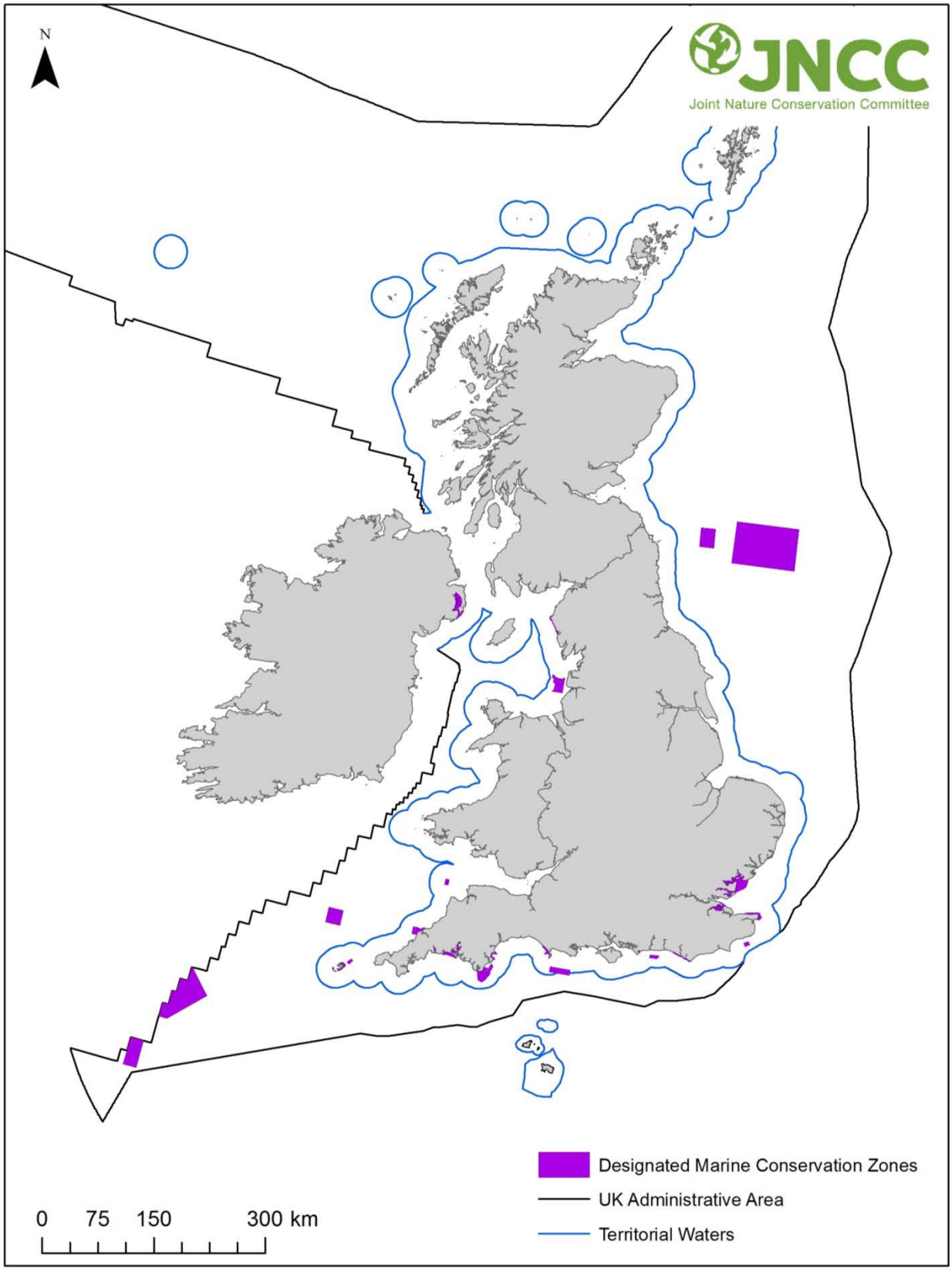

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**Figure 2: MCZ Project Area**

# 2 The MCZ Selection and Designation Process

The Joint Nature Conservation Committee (**JNCC**) and Natural England set up a project in 2008 to give sea-users (stakeholders) operating in Secretary of State Waters (see Figure 2), the opportunity to recommend potential sites for the new category of MPA, called MCZs, to UK Government[19]. These recommendations have so far formed the basis of MCZ designations resulting in 27 designated sites (see Figure 3 below). One of the 27 sites, Lundy MCZ, was previously a Marine Nature Reserve **(MNR)** that automatically converted into an MCZ when the Marine and Coastal Access Act 2009[19] received Royal Assent. Also receiving automatic designation was Strangford Lough MNR in Northern Ireland, which received MCZ status when the Marine Act (Northern Ireland) 2013[20] achieved Royal Assent in September 2013.

[20] The Marine Act (Northern Ireland) 2013. Available at: http://jncc.defra.gov.uk/page-6678




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**Figure 3: MCZs designated in 2013**

In November 2013, alongside announcing the designation of 27 MCZs, Defra also announced that there would be two future tranches of MCZs to be designated before the end of 2016. Possible Tranche Two sites have been selected by Defra[21] from the remaining original recommendations made by the regional MCZ projects in 2011, considered for designation in 2015. The long list of possible rMCZs for the second tranche has been derived from JNCC advice to Defra on how the remaining rMCZ site options could help fill big gaps in the existing network of MPAs in Secretary of State waters[22], alongside the socio-economic costs and benefits of sites and adequacy of supporting data. Tranche Three will aim to fill any further gaps in the network in order to contribute to achieving an ecologically coherent network within the UK.

Figure 4 broadly outlines how the MCZ process has progressed so far, with the projection for the second and third tranches of designations. A more detailed timeline is included in Annex 3.

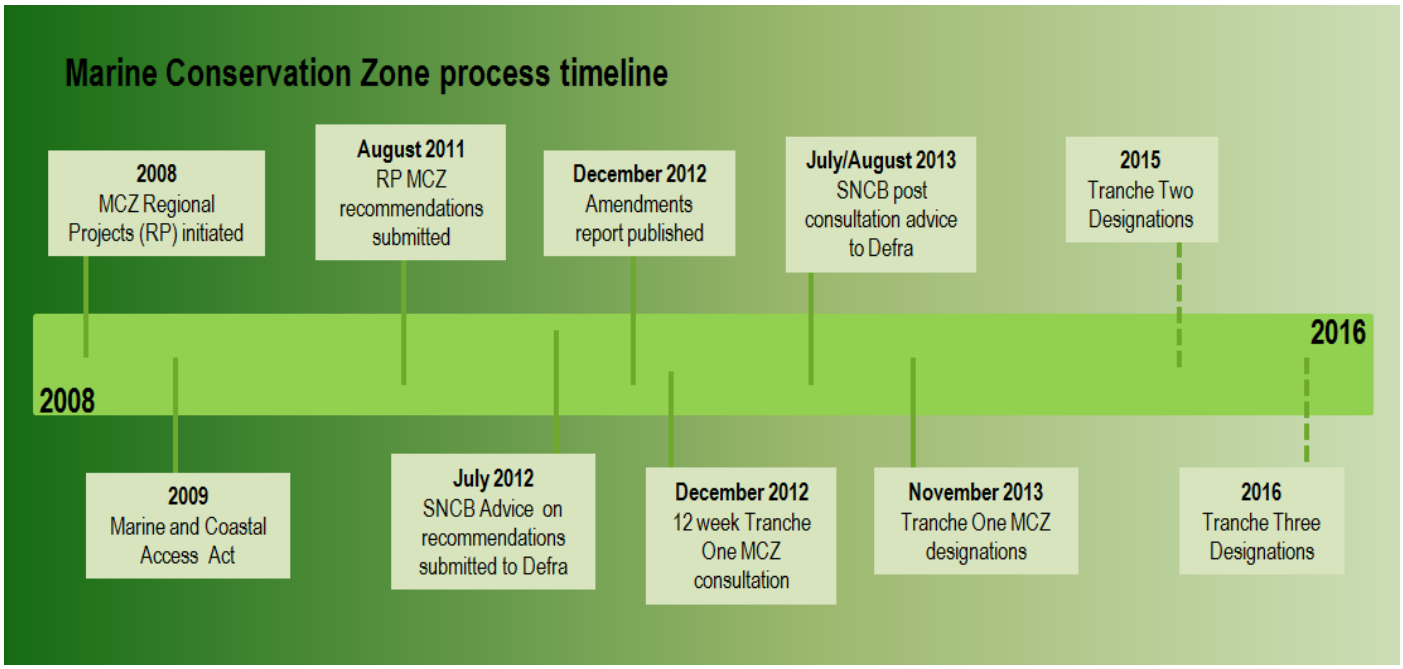



**Figure 4: Historical and projected MCZ timeline of milestones and documents**

The present report details the assessments for the 16 possible offshore Tranche Two sites taken from the Defra 'long list'. Three previously designated sites; East of Haig Fras MCZ, North East of Farnes Deep MCZ and South-West Deeps (West) MCZ are being considered for additional features to be included in the Designation Orders[23], since new data have become available. The assessments take into account all available data and information collected since JNCC and Natural England's advice on the rMCZs was

[21] Defra Marine Conservation Zone update: February 2014. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/285304/pb14141-mcz-update-201402.pdf

[22] Identifying the remaining MCZ options that would fill big gaps in the existing MPA network around England and offshore waters of Wales and Northern Ireland. Available at: http://jncc.defra.gov.uk/pdf/140224_BigGapsMethod_v8.pdf

[23] East of Haig Fras MCZ Designation Order. Available at: https://www.gov.uk/government/publications/marine-conservation-zone-2013-designation-east-of-haig-fras

North East of Farnes Deep MCZ Designation Order. Available at: https://www.gov.uk/government/publications/marine-conservation-zone-2013-designation-north-east-of-farnes-deep

South-West Deeps (West) MCZ Designation Order. Available at: https://www.gov.uk/government/publications/marine-conservation-zone-2013-designation-south-west-deeps-west

published in July 2012[24], and JNCC's post-consultation advice in August 2013[25], in order to use the best-available evidence in our advice to Defra.

For the offshore rMCZs that are being considered for consultation in Tranche Two, Defra requested that JNCC provides new assessments of confidence in feature presence and feature extent, feature condition, as well as identifying feature risk. A new assessment has also been incorporated to determine whether a site and features have sufficient data in order to be designated. JNCC has provided the following advice on all features[26] where new data have indicated their presence within the boundary of an offshore rMCZ, not just those recommended by the regional projects.

JNCC's advice on each possible Tranche Two offshore rMCZ is delivered in four parts:

- Assessment of confidence in feature presence and feature extent;
- Assessment of feature condition;
- Assessment of risk to each feature from potentially damaging activities;
- Advice on whether data support designation of a site/feature from a scientific, evidence-based perspective.

When compiling our advice, JNCC has endeavoured to comply with the Government Chief Scientific Adviser's guidelines for preparing scientific advice[27], and the recommendations of the Graham-Bryce report[28] that reviewed the evidence process for selecting marine Special Areas of Conservation (**SACs**). JNCC has also applied its own internal Evidence Quality Assurance (**QA**) Policy[29] to ensure our advice is scientifically robust. Our advice has been quality assured through our internal systems, and reviewed and signed-off by our independent non-executive MPA Sub-Group. JNCC commissioned an external contract[30] to quality assure a proportion of our confidence assessments in feature presence and feature extent in order to ensure due process had been followed and all evidence properly considered. 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. More detailed information on the QA procedures followed during this advice package can be found in Annex 2 within the Evidence QA statement. A summary of, and links to the key documents produced throughout the MCZ process, is given in Annex 3.

[24] MCZ 2012 Advice. Available at: http://jncc.defra.gov.uk/page-6229
[25] JNCC's advice on offshore Marine Conservation Zones proposed for designation in 2013. Available at: http://jncc.defra.gov.uk/page-6460
[26] Features as listed within the Ecological Network Guidance. Available at: http://jncc.defra.gov.uk/pdf/100705_ENG_v10.pdf
[27] Guidelines for preparing scientific advice. Available at: http://www.bis.gov.uk/go-science/science-in-government/strategy-and-guidance
[28] Graham-Bryce Report. Available at: https://www.gov.uk/government/publications/independent-review-of-the-evidence-process-for-selecting-marine-special-areas-of-conservation
[29] JNCC Evidence Quality Policy. Available at: http://jncc.defra.gov.uk/page-6675
[30] JNCC Report No.519. Available at: http://jncc.defra.gov.uk/page-6658

# 3 New data available for 2014 assessments

In 2012, Defra let two contracts to support the MCZ designation process after submission of the recommendations from the regional projects: MB0116[31] and MB0120[32]. MB0116[31] was an in-depth review of the ecological MCZ evidence designed to build on, and extend, the evidence-specific work of the regional projects to support the designation of MCZs. 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 undertaking the 2014 assessment of confidence in the presence and extent of features.

MB0120[32] is 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. These MCZ verification surveys have contributed significantly to our evidence base for many of the rMCZs, including 15 of the 16 possible offshore rMCZs to be considered for the Tranche Two consultation. These new data have resulted in the need for reassessment of the sites to provide an accurate picture of features present, their vulnerability and the suitability for designation.

Since JNCC's 2013 assessments, new data have become available for those sites designated in 2013. These data identified some additional features in the site that merit consideration to determine whether they could become designated features. In our 2013 assessments, JNCC noted the presence of features within the sites designated in 2013 that had not been recommended by the regional MCZ projects. These undesignated features have been reconsidered now in 2014 for their possible addition to each site's Designation Order[23].

A summary of the new data that have contributed to the 2014 assessments is presented in Table 1 below. Note that JNCC used all data available to the 2012 and 2013 assessments in the 2014 assessments in conjunction with the new data listed below.

[31] MB0116. Available at: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18125&FromSearch=Y&Publisher=1&SearchText=MB0116&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description

[32] MB0120. Available at: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18221&FromSearch=Y&Publisher=1&SearchText=MB0120&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description

**Table 1: New evidence available for rMCZ feature assessments in 2014**

| **New Data** |
|---|
| Defra contract MB0116[31] |
| Defra contract MB0120[32] |
| Defra MCZ consultation 2012-13 public responses[33] |
| Marine Management Organisation (**MMO**) Vessel Monitoring System (**VMS**) aggregated data 2006-2010[34] |
| Oil & Gas UK DEAL database[35] |
| Marine Management Organisation (**MMO**) Vessel Monitoring System (**VMS**) UK and EU ping data 2010-2013 |
| Crown Estates - energy and infrastructure GIS downloads[36] |
| Irish Marine Institute *Nephrops* Stock Assessment burrow counts and Particle Size Analysis (**PSA**) data points[37] |
| Marine Recorder snapshot[38] |

Further data are expected for some of the 16 possible offshore Tranche Two sites. These data, alongside any information provided through the public consultation, will be used in JNCC's post-consultation advice on those offshore sites that are minded for designation in 2015.

[33] JNCC reviewed data provided in consultation responses that were shared with us by Defra
[34] 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.
[35] UK DEAL. Available at: http://www.ukdeal.co.uk [Accessed January 2014]
[36] Crown Estate – Energy and Infrastructure GIS downloads. Available at: http://www.thecrownestate.co.uk/energy-infrastructure/downloads/maps-and-gis-data/ [Accessed March 2014]
[37] Irish Marine Institute *Nephrops* and PSA data. Available at: http://oar.marine.ie/handle/10793/887 [Accessed January 2014]
[38] Marine Recorder. Available at: http://jncc.defra.gov.uk/page-1599 [Accessed March 2014]

# 4 Summary of Assessments

In 2014, JNCC assessed 111 features within the 16 possible offshore rMCZs for Tranche Two and the three MCZs designated in 2013 where additional features have been identified.

The 16 possible offshore rMCZs assessed in 2014 are:

| | |
|---|---|
| **1. Celtic Deep rMCZ -** *Site Code: FS10* | **9. North St Georges Channel rMCZ –** *Site Code: ISCZ03* |
| **2. Compass Rose rMCZ –** *Site Code: NG12* | **10. North-West of Jones Bank rMCZ –** *Site Code: FS04* |
| **3. East of Celtic Deep rMCZ –** *Site Code: FS11* | **11. Offshore Brighton rMCZ –** *Site Code: BS14* |
| **4. Farnes East rMCZ –** *Site Code: NG14* | **12. Offshore Overfalls rMCZ –** Site Code: BS17 |
| **5. Fulmar rMCZ –** *Site Code: NG17* | **13. Slieve Na Griddle rMCZ –** *Site Code: ISCZ07* |
| **6. Greater Haig Fras rMCZ –** *Site Code: FS05* | **14. South of Celtic Deep rMCZ –** *Site Code: FS09* |
| **7. Mid St Georges Channel rMCZ –** *Site Code: ISCZ04* | **15. South Rigg rMCZ –** *Site Code: ISCZ06* |
| **8. Mud Hole rMCZ –** *Site Code: ISCZ01* | **16. Western Channel rMCZ –** *Site Code: FS12* |

The designated MCZs with additional features assessed in 2014 are:

| |
|---|
| **17. East of Haig Fras MCZ** |
| **18. North East of Farnes Deep MCZ** |
| **19. South-West Deeps (West) MCZ** |

**Table 2: Site assessment summary table from JNCC's 2014 assessments**

The following table summarises the outcomes of JNCC's 2014 assessments using evidence available up to March 2014. The score from any previous assessment is shown in *red italic text*. Where no previous assessment is shown, the feature has not previously been recommended for that site.

**NB: This table is only a summary and it must be used in conjunction with the full rationale behind each assessment provided in the subsequent site narratives.**

| Site Name (Code) | Ecological Network Guidance (ENG) feature | Confidence in feature presence (MCZ Technical Protocol E and guidance) *(Previous Assessment)* | Confidence in feature extent/distribution[39] (MCZ Technical Protocol E and guidance) *(Previous Assessment)* | Confidence in feature condition (MCZ Technical Protocol F) *(Previous Assessment)* | General Management Approach advised (MCZ Conservation Objective Guidance) *(Previous Assessment)* |
|---|---|---|---|---|---|
| **Celtic Deep rMCZ** (FS10) | **Subtidal mud** (A5.3) | **High** *(High)* | **High** *(Moderate)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Mud habitats in deep water** | **High** *(High)* | **High** *(Moderate)* | **Low** *(Moderate)* | **Recover** *(Recover)* |
| | **Sea-pen and burrowing megafauna communities*** | **High** *(*)* | **High** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| **Compass Rose rMCZ** (NG12) | **Moderate energy circalittoral rock** (A4.2) | **Low** *(Low)* | **Low** *(Low)* | **Not Assessed** *(Low)* | **Not Assessed** *(Recover)* |
| | **Subtidal coarse sediment** (A5.1)* | **High** *(*)* | **Low** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| | **Subtidal sand** (A5.2)* | **High** *(*)* | **High** *(*)* | **Low** *(*)* | **Maintain** *(*)* |
| | **Subtidal mixed sediments** (A5.4)* | **Moderate** *(*)* | **Low** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| | **Ocean quahog (*Arctica islandica*)*** | **Low** *(*)* | **Low** *(*)* | **Low** *(*)* | **Maintain/Recover** *(*)* |
| | **Smelt (*Osmerus eperlanus*)*** | **Moderate** *(*)* | **Moderate** *(*)* | **Not Assessed** *(*)* | **Not Assessed** *(*)* |

[39] Distribution relates only to species FOCI whereas extent is applied to broad-scale habitats, Geological/Geomorphological features and habitat FOCI.

| **Site Name** (Code) | **Ecological Network Guidance (ENG) feature** | **Confidence in feature presence** (MCZ Technical Protocol E and guidance) *(Previous Assessment)* | **Confidence in feature extent/distribution**[39] (MCZ Technical Protocol E and guidance) *(Previous Assessment)* | **Confidence in feature condition** (MCZ Technical Protocol F) *(Previous Assessment)* | **General Management Approach advised** (MCZ Conservation Objective Guidance) *(Previous Assessment)* |
|---|---|---|---|---|---|
| **East of Celtic Deep rMCZ** (FS11) | **Subtidal coarse sediment** (A5.1) | **No Confidence** *(Low)* | **No Confidence** *(Low)* | **Not Assessed** *(Low)* | **Not Assessed** *(Recover)* |
| | **Subtidal sand** (A5.2) | **High** *(Moderate)* | **High** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal mud** (A5.3) | **High** *(Low)* | **High** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal mixed sediments** (A5.4)* | **High** *(*)* | **High** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| | **Mud habitats in deep water*** | **High** *(*)* | **High** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| **East of Haig Fras MCZ** | **Subtidal mud** (A5.3) | **High** *(High)* | **High** *(High)* | **Low** *(Low)* | **Recover** *(Maintain)* |
| | **Mud habitats in deep water*** | **High** *(*)* | **High** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| **Farnes East rMCZ** (NG14) | **Moderate energy circalittoral rock** (A4.2) | **High** *(Low)* | **Low** *(Low)* | **Low** *(Low)* | **Maintain** *(Maintain)* |
| | **Subtidal coarse sediment** (A5.1) | **High** *(Moderate)* | **High** *(Low)* | **Low** *(Low)* | **Maintain** *(Maintain)* |
| | **Subtidal sand** (A5.2) | **High** *(Low)* | **High** *(Low)* | **Low** *(Low)* | **Maintain** *(Maintain)* |
| | **Subtidal mud** (A5.3) | **High** *(Low)* | **High** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal mixed sediments** (A5.4) | **High** *(Low)* | **High** *(Low)* | **Low** *(Low)* | **Maintain** *(Maintain)* |
| | **Mud habitats in deep water*** | **High** *(*)* | **High** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| | **Peat and clay exposures** | **Low** *(Low)* | **Low** *(Low)* | **Low** *(Low)* | **Maintain** *(Maintain)* |
| | **Sea-pen and burrowing megafauna communities*** | **Moderate** *(*)* | **Moderate** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| | **Ocean quahog (*Arctica islandica*)*** | **High** *(*)* | **High** *(*)* | **Moderate** *(*)* | **Recover** *(*)* |

| **Site Name** (Code) | **Ecological Network Guidance (ENG) feature** | **Confidence in feature presence** (MCZ Technical Protocol E and guidance) *(Previous Assessment)* | **Confidence in feature extent/distribution**[39] (MCZ Technical Protocol E and guidance) *(Previous Assessment)* | **Confidence in feature condition** (MCZ Technical Protocol F) *(Previous Assessment)* | **General Management Approach advised** (MCZ Conservation Objective Guidance) *(Previous Assessment)* |
|---|---|---|---|---|---|
| | **Smelt (*Osmerus eperlanus*)*** | **Moderate** *(*)* | **Moderate** *(*)* | **Not Assessed** *(*)* | **Not Assessed** *(*)* |
| **Fulmar rMCZ** (NG17) | **Subtidal coarse sediment** (A5.1) | **Moderate** *(Moderate)* | **Low** *(Low)* | **Low** *(Low)* | **Recover** *(Maintain)* |
| | **Subtidal sand** (A5.2) | **High** *(High)* | **Low** *(High)* | **Low** *(Low)* | **Maintain** *(Maintain)* |
| | **Subtidal mud** (A5.3)* | **High** *(*)* | **Moderate** *(*)* | **Low** *(*)* | **Maintain** *(*)* |
| | **Subtidal mixed sediments** (A5.4) | **High** *(*)* | **Low** *(*)* | **Low** *(*)* | **Maintain** *(*)* |
| | **Mud habitats in deep water*** | **High** *(*)* | **Moderate** *(*)* | **Low** *(*)* | **Maintain** *(*)* |
| | **Ocean quahog (*Arctica islandica*)*** | **High** *(Moderate)* | **High** *(Low)* | **Low** *(Low)* | **Maintain** *(Maintain)* |
| | **Native oyster (*Ostrea edulis*)*** | **Not Assessed** *(*)* | **Not Assessed** *(*)* | **Not Assessed** *(*)* | **Not Assessed** *(*)* |
| | **Amphipod shrimp (*Gitanopsis bispinosa*)*** | **Not Assessed** *(*)* | **Not Assessed** *(*)* | **Not Assessed** *(*)* | **Not Assessed** *(*)* |
| | **Smelt (*Osmerus eperlanus*)*** | **High** *(*)* | **High** *(*)* | **Not Assessed** *(*)* | **Not Assessed** *(*)* |
| | **Undulate ray (*Raja undulata*)*** | **Not Assessed** *(*)* | **Not Assessed** *(*)* | **Not Assessed** *(*)* | **Not Assessed** *(*)* |
| **Greater Haig Fras rMCZ** (FS05) | **Moderate energy circalittoral rock** (A4.2) | **Not Assessed** *(High)* | **Not Assessed** *(Low)* | **Not Assessed** *(Low)* | **Not Assessed** *(Recover)* |
| | **Subtidal coarse sediment** (A5.1) | **High** *(Moderate)* | **Moderate** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal sand** (A5.2) | **High** *(Moderate)* | **Moderate** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal mud** (A5.3) | **High** *(Moderate)* | **High** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal mixed sediments** (A5.4) | **High** *(Moderate)* | **Moderate** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Mud habitats in deep water*** | **High** *(*)* | **High** *(*)* | **Low** *(*)* | **Recover** *(*)* |

| **Site Name** (Code) | **Ecological Network Guidance (ENG) feature** | **Confidence in feature presence** (MCZ Technical Protocol E and guidance) *(Previous Assessment)* | **Confidence in feature extent/distribution**[39] (MCZ Technical Protocol E and guidance) *(Previous Assessment)* | **Confidence in feature condition** (MCZ Technical Protocol F) *(Previous Assessment)* | **General Management Approach advised** (MCZ Conservation Objective Guidance) *(Previous Assessment)* |
|---|---|---|---|---|---|
| | **Fan mussel (*Atrina fragilis*)*** | **Moderate** *(*)* | **Low** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| | **Haig Fras Rock Complex** | **High** *(High)* | **High** *(High)* | **High** *(High)* | **Maintain** *(Maintain)* |
| **Mid St Georges Channel rMCZ** (ISCZ04) | **Moderate energy circalittoral rock** (A4.2) | **High** *(Low)* | **Moderate** *(Low)* | **Low** *(Low)* | **Maintain** *(Maintain)* |
| | **Subtidal coarse sediment** (A5.1) | **High** *(Moderate)* | **High** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal sand** (A5.2) | **High** *(Low)* | **High** *(Low)* | **Low** *(Low)* | **Maintain** *(Recover)* |
| | **Subtidal mixed sediments** (A5.4) | **High** *(Low)* | **High** *(Low)* | **Low** *(Low)* | **Maintain** *(Recover)* |
| | **Subtidal biogenic reefs** (A5.6)* | **Low** *(*)* | **Low** *(*)* | **Not Assessed** *(*)* | **Not Assessed** *(*)* |
| **Mud Hole rMCZ** (ISCZ01) | **Subtidal mud** (A5.3) | **High** *(Moderate)* | **High** *(Moderate)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Mud habitats in deep water** | **High** *(Low)* | **High** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Sea-pen and burrowing megafauna communities** | **High** *(Low)* | **High** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| **North East of Farnes Deep MCZ** | **Subtidal mud** (A5.3) | **Moderate** *(High)* | **Moderate** *(High)* | **Low** *(Low)* | **Maintain** *(Maintain)* |
| | **Subtidal mixed sediments** (A5.4) | **High** *(High)* | **High** *(High)* | **Low** *(Low)* | **Maintain** *(Maintain)* |
| | **Mud habitats in deep water*** | **Moderate** *(*)* | **Moderate** *(*)* | **Low** *(*)* | **Maintain** *(*)* |
| | **Sea-pen and burrowing megafauna communities** | **No Confidence** *(High)* | **No Confidence** *(Low)* | **Not Assessed** *(Low)* | **Not Assessed** *(Maintain)* |
| | **Ocean quahog (*Arctica islandica*)*** | **High** *(*)* | **High** *(*)* | **Low** *(*)* | **Maintain** *(*)* |

| **Site Name** (Code) | **Ecological Network Guidance (ENG) feature** | **Confidence in feature presence** (MCZ Technical Protocol E and guidance) *(Previous Assessment)* | **Confidence in feature extent/distribution**[39] (MCZ Technical Protocol E and guidance) *(Previous Assessment)* | **Confidence in feature condition** (MCZ Technical Protocol F) *(Previous Assessment)* | **General Management Approach advised** (MCZ Conservation Objective Guidance) *(Previous Assessment)* |
|---|---|---|---|---|---|
| **North St Georges Channel rMCZ** (ISCZ03) | **High energy circalittoral rock** (A4.1) | **No Confidence** *(Low)* | **No Confidence** *(Low)* | **Not Assessed** *(Low)* | **Not Assessed** *(Maintain)* |
| | **Moderate energy circalittoral rock** (A4.2) | **High** *(High)* | **High** *(Moderate)* | **Low** *(Low)* | **Maintain** *(Maintain)* |
| | **Subtidal coarse sediment** (A5.1) | **High** *(High)* | **High** *(Low)* | **Low** *(Low)* | **Recover** *(Maintain)* |
| | **Subtidal sand** (A5.2) | **High** *(Moderate)* | **High** *(Low)* | **Low** *(Low)* | **Maintain** *(Recover)* |
| | **Subtidal mud** (A5.3)***** | **Moderate** *(*)* | **Low** *(*)* | **Low** *(*)* | **Maintain** *(*)* |
| | **Subtidal mixed sediments** (A5.4) | **High** *(Low)* | **High** *(Low)* | **Low** *(Low)* | **Recover** *(Maintain)* |
| | **Subtidal biogenic reefs** (A5.6) | **Low** *(Low)* | **Low** *(Low)* | **Not Assessed** *(Low)* | **Not Assessed** *(Recover)* |
| | **Horse mussel (*Modiolus modiolus*) beds** | **Low** *(Low)* | **Low** *(Low)* | **Not Assessed** *(Low)* | **Not Assessed** *(Recover)* |
| | **Drumlins** | **High** *(High)* | **High** *(High)* | **High** *(High)* | **Maintain** *(Maintain)* |
| **North-West of Jones Bank rMCZ** (FS04) | **Subtidal coarse sediment** (A5.1) | **High** *(Low)* | **High** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal sand** (A5.2) | **High** *(Low)* | **High** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal mud** (A5.3) | **High** *(Moderate)* | **High** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal mixed sediments** (A5.4)***** | **High** *(*)* | **High** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| | **Mud habitats in deep water*** | **High** *(*)* | **High** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| | **Sea-pen and burrowing megafauna communities*** | **High** *(*)* | **High** *(*)* | **Low** *(*)* | **Recover** *(*)* |

| **Site Name** (Code) | **Ecological Network Guidance (ENG) feature** | **Confidence in feature presence** (MCZ Technical Protocol E and guidance) *(Previous Assessment)* | **Confidence in feature extent/distribution**[39] (MCZ Technical Protocol E and guidance) *(Previous Assessment)* | **Confidence in feature condition** (MCZ Technical Protocol F) *(Previous Assessment)* | **General Management Approach advised** (MCZ Conservation Objective Guidance) *(Previous Assessment)* |
|---|---|---|---|---|---|
| **Offshore Brighton rMCZ** (BS14) | **High energy circalittoral rock** (A4.1) | **Moderate** *(Low)* | **Low** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Moderate energy circalittoral rock** (A4.2) | **Moderate** *(Low)* | **Low** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal coarse sediment** (A5.1)***** | **High** *(*)* | **Moderate** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| | **Subtidal mixed sediments** (A5.4) | **High** *(Moderate)* | **Moderate** *(Moderate)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Ross worm (*Sabellaria spinulosa*) reefs** | **Low** *(Low)* | **Low** *(Not Assessed)* | **Not Assessed** *(Low)* | **Not Assessed** *(Recover)* |
| | **Undulate ray (*Raja undulata*)*** | **Moderate** *(*)* | **Moderate** *(*)* | **Not Assessed** *(*)* | **Not Assessed** *(*)* |
| **Offshore Overfalls rMCZ** (BS17) | **Subtidal coarse sediment** (A5.1) | **High** *(High)* | **High** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal sand** (A5.2) | **Moderate** *(Moderate)* | **Low** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal mixed sediments** (A5.4) | **High** *(High)* | **Moderate** *(Moderate)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Ross worm (*Sabellaria spinulosa*) reefs** | **Low** *(Low)* | **Low** *(Not Assessed)* | **Not Assessed** *(Low)* | **Not Assessed** *(Recover)* |
| | **Native oyster (*Ostrea edulis*)*** | **Low** *(*)* | **Low** *(*)* | **Not Assessed** *(*)* | **Not Assessed** *(*)* |
| | **European eel (*Anguilla anguilla*)*** | **Low** *(*)* | **Low** *(*)* | **Not Assessed** *(*)* | **Not Assessed** *(*)* |
| | **Undulate ray (*Raja undulata*)** | **Moderate** *(Low)* | **Moderate** *(Not Assessed)* | **Not Assessed** *(Not Assessed)* | **Not Assessed** *(Maintain)* |
| | **English Channel outburst flood features** | **High** *(High)* | **High** *(High)* | **High** *(High)* | **Maintain** *(Maintain)* |

| **Site Name** (Code) | **Ecological Network Guidance (ENG) feature** | **Confidence in feature presence** (MCZ Technical Protocol E and guidance) *(Previous Assessment)* | **Confidence in feature extent/distribution**[39] (MCZ Technical Protocol E and guidance) *(Previous Assessment)* | **Confidence in feature condition** (MCZ Technical Protocol F) *(Previous Assessment)* | **General Management Approach advised** (MCZ Conservation Objective Guidance) *(Previous Assessment)* |
|---|---|---|---|---|---|
| **Slieve Na Griddle rMCZ** (ISCZ07) | **Low energy circalittoral rock** (A4.3) | **Not Assessed** *(High)* | **Not Assessed** *(High)* | **Not Assessed** *(Low)* | **Not Assessed** *(Recover)* |
| | **Subtidal mud** (A5.3) | **High** *(High)* | **High** *(Moderate)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Mud habitats in deep water** | **High** *(High)* | **High** *(Moderate)* | **Low** *(Moderate)* | **Recover** *(Recover)* |
| | **Sea-pen and burrowing megafauna communities*** | **High** *(*)* | **High** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| **South of Celtic Deep rMCZ** (FS09) | **Moderate energy circalittoral rock** (A4.2)* | **High** *(*)* | **Low** *(*)* | **Low** *(*)* | **Maintain** *(*)* |
| | **Subtidal coarse sediment** (A5.1) | **High** *(Moderate)* | **Moderate** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal sand** (A5.2) | **High** *(Moderate)* | **Moderate** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal mud** (A5.3) | **Moderate** *(Low)* | **Low** *(Low)* | **Low** *(Low)* | **Maintain** *(Recover)* |
| | **Subtidal mixed sediments** (A5.4) | **High** *(Moderate)* | **Moderate** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Ocean quahog (*Arctica islandica*)*** | **Low** *(*)* | **Low** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| **South Rigg rMCZ** (ISCZ06) | **Moderate energy circalittoral rock** (A4.2)* | **High** *(*)* | **High** *(*)* | **Low** *(*)* | **Maintain** *(*)* |
| | **Low energy circalittoral rock** (A4.3) | **No Confidence** *(Low)* | **No Confidence** *(Low)* | **Not Assessed** *(Low)* | **Not Assessed** *(Recover)* |
| | **Subtidal sand** (A5.2) | **High** *(Low)* | **High** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal mud** (A5.3) | **High** *(High)* | **High** *(Moderate)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal mixed sediments** (A5.4)* | **High** *(*)* | **Moderate** *(*)* | **Low** *(*)* | **Maintain** *(*)* |

| **Site Name** (Code) | **Ecological Network Guidance (ENG) feature** | **Confidence in feature presence** (MCZ Technical Protocol E and guidance) *(Previous Assessment)* | **Confidence in feature extent/distribution**[39] (MCZ Technical Protocol E and guidance) *(Previous Assessment)* | **Confidence in feature condition** (MCZ Technical Protocol F) *(Previous Assessment)* | **General Management Approach advised** (MCZ Conservation Objective Guidance) *(Previous Assessment)* |
|---|---|---|---|---|---|
| | **Mud habitats in deep water** | **High** *(High)* | **High** *(Moderate)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Sea-pen and burrowing megafauna communities** | **High** *(High)* | **High** *(Moderate)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Ocean quahog (*Arctica islandica*)** | **Low** *(Moderate)* | **Low** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| **South-West Deeps (West) MCZ** | **Subtidal mud** (A5.3)***** | **High** *(*)* | **Moderate** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| | **Mud habitats in deep water*** | **High** *(*)* | **Moderate** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| | **Fan mussel (*Atrina fragilis*)*** | **Low** *(*)* | **Low** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| **Western Channel rMCZ** (FS12) | **Moderate energy circalittoral rock** (A4.2) | **Low** *(Low)* | **Low** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal coarse sediment** (A5.1) | **High** *(Moderate)* | **High** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |
| | **Subtidal sand** (A5.2)***** | **Moderate** *(*)* | **Moderate** *(*)* | **Low** *(*)* | **Recover** *(*)* |
| | **Subtidal mixed sediments** (A5.4) | **Moderate** *(Moderate)* | **Low** *(Low)* | **Low** *(Low)* | **Recover** *(Recover)* |

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

JNCC assessed 111 features within the 16 offshore rMCZs and three existing offshore MCZs. We have **High** confidence in the presence of 71 features, **Moderate** confidence for 17 features, **Low** confidence for 14 features, **No** confidence for four features and five features have not been assessed due to limited/no data availability to support their presence within a site. We have **High** confidence in extent of 51 features, **Moderate** confidence in 23 features, **Low** confidence in 28 features, **No** confidence for four features and five features have not been assessed. There are 29 instances where confidence in feature presence is higher than confidence in feature extent.

JNCC reviewed the proposed General Management Approach for all 111 features. We concluded that 59 features require a **Recover** objective, and another 29 features require a **Maintain** objective. The remaining 22 features were not assessed, with one feature assigned a **Maintain/Recover** objective.

JNCC concluded there is sufficient evidence to designate the majority of features identified in the 16 offshore rMCZs and the three designated offshore MCZs. Specifically, and notwithstanding advice on the habitat FOCI Mud habitats in deep water in Annex 6, JNCC recommend that all the features covered in JNCC's 2014 advice within Celtic Deep rMCZ, East of Celtic Deep rMCZ, Greater Haig Fras rMCZ, Mid St Georges Channel rMCZ, Mud Hole rMCZ, North-West of Jones Bank rMCZ, Offshore Overfalls rMCZ and Slieve Na Griddle rMCZ have sufficient data to support their designation. The new features within East of Haig Fras MCZ, North East of Farnes Deep MCZ and South-West Deeps (West) MCZ could be added to the existing designation orders since there are sufficient data available.

Recent data recorded a specimen of the species FOCI **Fan mussel (*Atrina fragilis*)**, within South-West Deeps (West) MCZ. However, JNCC concluded there are not sufficient data available to recommend the feature for designation at this time.

JNCC note that Farnes East rMCZ, North St Georges Channel rMCZ, Offshore Brighton rMCZ, Compass Rose rMCZ, Fulmar rMCZ, South of Celtic Deep rMCZ, Western Channel rMCZ and South Rigg rMCZ have at least one feature within each site with limited data currently available, but the features have potentially high conservation interest. JNCC recommend that Defra consider the balance between the application of the precautionary principle and the data supporting each feature to assess whether it is appropriate to designate at the time.

In summary, additional data have become available for 15 of the 16 possible Tranche Two sites since JNCC's advice in 2012, and for additional features within three offshore sites designated in 2013. Of those features originally assessed in either 2012 or 2013, our confidence in the feature presence has increased in 34 out of 71 features, and our confidence in feature extent has increased in 42 out of the 71 features. A further 40 features were not previously considered in the sites and thus do not have an original assessment. JNCC concludes that sufficient evidence is now available to support the presence of features

not originally recommended by the regional projects in 2011. JNCC recommends that Defra considers all these features for designation within these sites in 2015.

# 5 Method of Assessment

## 5.1 Confidence in feature presence and feature extent

The features recommended by the four regional MCZ projects were originally assessed by JNCC and Natural England in 2012 using MCZ Technical Protocol E[40] (and associated guidance[41]) which sets out the broad principles and approach for assessing the evidence underpinning features within sites. Application of the Protocol generates two results from:

- An assessment of the biophysical evidence supporting the presence of features, in order to determine the scientific confidence in the feature(s) of interest being present within a given site;
- An assessment of the biophysical evidence supporting the extent of features, in order to determine the scientific confidence in the spatial distribution of the feature(s) of interest within a given site.

An assessment of confidence in feature presence and feature extent is generated for each feature in each site. For both feature presence and extent, the protocol outlines four categories of confidence that could be assigned to each feature: **No**, **Low**, **Moderate** or **High**. JNCC and Natural England applied Technical Protocol E[40] to generate these evidence assessment results when developing their advice for Defra in 2012[24]. JNCC and Natural England subsequently produced a guidance document[41] to explain some aspects of the practical application of Technical Protocol E[40] based on our experiences from 2012.

Since the original evidence assessments were generated in 2012, additional evidence has been collected through the Defra MCZ contract (MB0120[32]) led by Cefas, the review of ecological evidence supporting the rMCZs (contract MB0116[31]) led by ABPMer, and data provided through the public consultation[33]. JNCC and NE have completed further full assessments in 2013 (after the public consultation on the first Tranche of MCZs) and now in 2014 by applying Technical Protocol E[40] and the associated guidance document[41] to all of the available data. JNCC's results from the 2014 assessments are provided below and the full assessments can be viewed in Annex 4. 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[42].

The original recommendations made by the MCZ regional projects used the modelled broad-scale habitat map from UKSeaMap (2010)[43] where there were no data from survey to create a specific habitat map. The

[40] MCZ Technical Protocol E. Available at: http://jncc.defra.gov.uk/pdf/120111_SNCB%20MCZ%20Advice_Protocol_Feature%20Evidence%20V5.0.pdf
[41] Guidance on aspects of the practical application of the Technical Protocol E for MPA work. Available at: http://jncc.defra.gov.uk/pdf/181113%20Protocol%20E%20supplementary%20guidance.pdf
[42] MCZ 2012 Amendments Report. Available at: http://jncc.defra.gov.uk/page-6229
[43] UKSeaMap – predicting mapping of seabed habitats. Available at: http://jncc.defra.gov.uk/ukseamap/

UKSeaMap model has now been superseded by a revised habitat model from EUSeaMap[44], which in 2012 produced a new broad-scale habitat map that has been used for all 2014 rMCZ evidence assessments.

The 2014 assessments were undertaken on both the features originally *recommended* by the regional MCZ projects together with any other MCZ features[45] shown to occur within the site. Broadening the assessments in this way enabled JNCC to provide comprehensive advice to Defra on all features identified within each of the sites considered for possible public consultation in 2015.

The MB0116 report[31] identified that the majority of the most-relevant data sources had already been utilised by the regional MCZ projects in their original recommendations[46]. In the cases where the report identified new data sources not available to the 2012 or 2013 assessments, these data were taken into consideration when updating the assessment of confidence in the presence and extent of features for the possible offshore rMCZs (see Annex 2 of JNCC's 2013 post-consultation advice on Tranche One offshore MCZs[47] for more information on how the findings of MB0116[31] have been considered in JNCC's advice).

The 2014 assessments presented here have been reviewed and Quality Assured (**QA**) by the JNCC MCZ Evidence QA Group (See Annex 5 for Terms of Reference). This Group reviewed the consistency of application of Technical Protocol E[40] and its guidance[41], and verified that the data sources used in the 2014 assessment were appropriate. In addition, JNCC used an external independent contractor to review three offshore MCZs in order to determine whether due process had been followed in applying Technical Protocol E[40] and its guidance[41]. The findings of the report[30] confirm that Technical Protocol E[40] and its guidance[41] had been rigorously and consistently applied by JNCC to all features and between sites.

In line with JNCC's 2013 post-consultation advice on the Tranche One rMCZs[47], JNCC advises that the previous recommendations for the habitat FOCI Subtidal sands and gravels should not go forward for designation. The definition of this habitat FOCI is very broad and effectively contains the broad-scale habitats Subtidal coarse sediment and Subtidal sand. Protecting the broad-scale habitat will therefore protect the habitat FOCI by default[48]. As a consequence no further assessments were completed for this feature in 2014.

Following JNCC's 2013 assessments, there have been detailed discussions related to the definitions of particular habitats and the identification of these habitats. For the two habitat FOCI, Mud habitats in deep water, and Sea-pen and burrowing megafauna communities, these discussions led to re-consideration of data with respect to the presence and/or extent of these habitats (and the related broad-scale habitat

[44] EUSeaMap – mapping European seabed habitats. Available at: http://jncc.defra.gov.uk/euseamap
[45] Marine Conservation Zone features catalogue. Available at: http://jncc.defra.gov.uk/page-4527
[46] The regional MCZ project final recommendation reports. Available at: http://jncc.defra.gov.uk/page-6230
[47] JNCC's advice on offshore Marine Conservation Zones proposed for designation in 2013. Available at: http://jncc.defra.gov.uk/page-6460
[48] Subtidal sands and gravels guidance. Available at: http://jncc.defra.gov.uk/page-6229

Subtidal mud). Where re-analysed data have resulted in a change to a feature's confidence score in presence and/or extent from past assessments, this has been identified in JNCC's 2014 advice below. More information is available on the JNCC website to explain the clarifications provided on Mud habitats in deep water, and Sea-pen and burrowing megafauna communities[49].

JNCC has also considered the data used to identify Sea-pen and burrowing megafauna communities, in particular data from surveys conducted to gather data for *Nephrops* fisheries stock assessments[37]. The mean density of burrows per square metre is calculated for a video line transect but the data stored as a single point representing the midpoint of the line[50]. For the purposes of JNCC's assessments, all stations recording a mean burrow density ≥0.2/$m^2$ have been accepted as demonstrating the presence of Sea-pen and burrowing megafauna communities. This threshold was set based on the SACFOR abundance scale as described within the Marine Nature Conservation Review (**MNCR**)[51], which provides estimated densities of fauna and flora for each abundance category. The descriptions of the key component biotopes of 'Sea-pen and burrowing megafauna communities' in the Marine Habitat Classification for Britain and Ireland[52], include the typical SACFOR abundance of each characterising species, and *Nephrops* are characterised as 'Frequent'. JNCC estimates the size of Nephrops to be within the 3-15cm range and therefore following the MNCR guidance, 'Frequent' is equivalent to a density of between 1-9 *Nephrops* in a 10$m^2$ area. Using *Nephrops* burrow density as a surrogate for *Nephrops* species density, this would therefore equate to sample points with burrow density levels from 0.1/$m^2$ being considered representative of Sea-pen and burrowing megafauna communities. However owing to some limitations in this approach[53], a precautionary density threshold of 0.2/$m^2$ has been set. Where data points indicate mean burrow densities of less than 0.2/$m^2$, JNCC has also considered any other data available for that site, such as Sea-pen abundances, to determine whether Sea-pen and burrowing megafauna communities are present in that site. JNCC note that caution should be exercised when using mean burrow density data to classify Sea-pen and burrowing megafauna communities, as lower densities of the key species may actually represent a habitat degraded by to anthropogenic impacts.

JNCC reviewed the relationship between the habitat Features of Conservation Importance (**FOCI**) Mud habitats in deep water and Sea-pen and burrowing megafauna communities, and the broad scale habitat Subtidal mud, noting the clear overlap between these features in aspects of their definition. Consequently,

[49] JNCC clarifications on Mud habitats in deep water and Sea-pen & burrowing megafauna habitats. Available at: http://jncc.defra.gov.uk/page-6658

[50] Mean burrow density per metre squared is determined by the field of view multiplied by the length of the tow, and then divided by the number of burrows counted on the tow. This figure is then adjusted by dividing by 1.3 in order to take account of the edge effect of over estimating the area viewed during the transect. For more information on these calculations, please refer to Campbell, N. et al. 2009.

[51] Marine Nature Conservation Review 1987-98. Information available at: http://jncc.defra.gov.uk/default.aspx?page=1596

[52] CONNOR, D.W. et al, 2004. The Marine Habitat Classification for Britain and Ireland Version 04.05 JNCC, Peterborough ISBN 1 861 07561 8 (internet version). Available at: http://jncc.defra.gov.uk/marinehabitatclassification

[53] JNCC recognises that the categories within the SACFOR abundance scale were designed for epibenthic organisms rather than those which burrow, and so caution should be applied when using the scale in the way described above. However, this was deemed as the best method of identifying a basic threshold for the mean density of burrows to enable assignment as Sea-pen and burrowing megafauna communities.

we advise that the habitat FOCI Mud habitats in deep water is not designated as a feature of a site where the site has Subtidal mud and Sea-pen and burrowing megafauna communities as proposed features, and these three habitats share the same spatial extent. JNCC consider there is limited extra conservation value in designating Mud habitats in deep water where that same area is afforded protection by its parent and component habitats. More information on this advice is contained with Annex 6.

The identification of rocky habitats and biogenic reefs have also been considered. According to Technical Protocol E[40] and supplementary guidance[41], individual still images can be used to confirm the presence of these habitats and have been used accordingly to assign a confidence score. However, there is potential for these images to be incorrectly extrapolated to a larger area. A single still image may show a rocky habitat or biogenic reef species, but it may not be representative or indicative of a larger areal extent or more-widespread occurrence of a species. These images may therefore not show the larger-scale habitat itself, but, perhaps, a single large boulder, or species associated with biogenic reefs (and thereby provide insufficient evidence to constitute the presence of a wider reef habitat). Therefore, for rocky habitats, still images have not been used as ground-truthing points to verify the presence of this feature within JNCC's 2014 assessments[54].

Expert judgement[55] has been used to assess whether the area of the feature is sufficiently represented in video records, so that a minimum patch size of 5m by 5m ($25m^2$) of rock is identified[56]. This represents approximately one minute of video (depending on ship/current speeds) displaying continuous rock. Each separate video tow meeting these criteria has been used as a single ground-truthing point confirming the presence of rock in JNCC's 2014 assessments. Where a video tow passes over heterogeneous ground (i.e. rock is interspersed with other features), any occurrences on that tow which meet the above criteria have been considered as separate ground-truthing points confirming the presence of the rocky feature.

A similar process has also been used in JNCC's 2014 assessments of biogenic reef. Expert judgement has been used to assess video and still image information to determine if ground-truth data shows only isolated occurrences of species associated with biogenic reefs or the broad-scale habitat Subtidal biogenic reefs, as defined[57]. In the case of Horse mussel beds (*Modiolus modiolus*), guidance[58] developed for assessing Annex I biogenic reefs has been used to consider if biogenic reefs can be inferred from single images,

[54] Please note the difference in approach used to determine sediments as opposed to rock/reef. Given the small spatial scale being used to confirm the presence of a sedimentary habitat (i.e. a $0.1m^2$ grab sample) as compared to rocky habitats ($25m^2$), it is likely that sedimentary habitats can more easily achieve higher confidence scores than rocky habitats. JNCC recognises this bias is possible where small scale ground-truthing samples are being used to identify the presence of sedimentary habitat.
[55] Note that expert judgement here is referred to as if is described in Barnard, S. & Boyes, S.J. Review of Case Studies and Recommendations for the inclusion of Expert Judgement in Marine Biodiversity Status Assessments, 2013. JNCC Report No. 490. Available at: http://jncc.defra.gov.uk/pdf/490_web.pdf
[56] MESH guide to habitat mapping. Available at: http://www.searchmesh.net/pdf/GMHM1-4%20What%20do%20you%20want%20to%20map.pdf
[57] Descriptions of habitats on the OSPAR list of threatened and/or declining species and habitats (2007/8), Page 5. Available at: http://www.ospar.org/documents/dbase/decrecs/agreements/08-07e_priority%20habitat%20definitions.doc
[58] Morris, E. 2014. Defining Annex I biogenic *Modiolus modiolus* reef under the Habitats Directive: Report of an inter-agency workshop March 4th & 5th, 2014. JNCC Report No. 531. Available at: http://jncc.defra.gov.uk/page-1448

taking into consideration criteria such as density, patch size, elevation, distinctness from surrounding habitat and associated biota. Similarly for Ross worm (*Sabellaria spinulosa*) reefs, the equivalent guidance for assessing the habitat as an Annex I reef has been used [59].

JNCC has undertaken in-house biotope analysis using species abundance data provided by Cefas for the possible offshore rMCZs in JNCC's 2014 advice. These analyses aimed to better characterise the biological communities present within a site to inform JNCC's advice on the confidence in feature presence and feature extent. These analyses were only completed for sites where there were potential conflicts between existing and new data, in particular for sites where Particle Size Analysis (**PSA**) sample points indicate that the substrate is on the boundary between Subtidal sand and Subtidal mud in the Modified Folk Trigon[60]. Where these analyses have been considered, it has been outlined in our narratives for confidence in each site's feature presence and feature extent assessments. In particular, confidence scores in some features have changed as a result of these analyses, and highlight the importance of understanding the biological communities within a site alongside ground-truthing data of the physical habitat. JNCC will undertake further analyses of sites during the next few months in order to contribute to post-consultation advice in 2015 on any Tranche Two sites identified for designation.

When applying Technical Protocol E[40] and its guidance[41], JNCC assessed the confidence in extent of habitat features in the following way. Where a feature's extent is based on a habitat map (with a Mapping European Seabed Habitats (**MESH**) confidence score of at least 58), JNCC used that extent to assess the confidence in feature extent as per Technical Protocol E[40] and its associated guidance[41]. Where there is no habitat map with a MESH score of at least 58 and/or only point sample data exists for a feature, JNCC considered all sources of data to assign confidence in feature extent. This approach looks at the geographical spread of the points assigned to the feature together with the habitat map for the site derived from the EUSeaMap[44] habitat model, to determine whether there are clearly identifiable areas of the feature with the site. Any such areas would give JNCC greater confidence in that feature's extent. As explained above, and since our 2014 assessments, JNCC also take into account biotope information associated with data gathered through MB0120[32] surveys, to analyse the communities present within these data. To ensure consistency in this approach, JNCC's MCZ Evidence QA Group reviewed all applications of expert judgement and compared feature extent assessments across all sites in our 2014 assessments. Note that where data collected through MB0120[32] have indicated a significant variation in feature extent to that displayed in any existing habitat map with a MESH confidence score of 58%, all data, including data underpinning the habitat map, were considered as per the process above, in order to make an expert judgement about feature extent. This judgement was then reviewed by the JNCC's MCZ Evidence QA Group.

[59] Gubbay, S. 2007. Defining and managing *Sabellaria spinulosa* reefs: Report of an inter-agency workshop 1-2 May 2007. JNCC Report No. 405. Available at: http://jncc.defra.gov.uk/page-4097
[60] UKSeaMap Technical Report 3. Available at: http://jncc.defra.gov.uk/pdf/UKSeaMap2010_TechnicalReport_3_Substrate2.pdf

## 5.2 Advice on the General Management Approach required to achieve conservation objectives

The conservation objective for each feature is to achieve *favourable condition*[61]. The General Management Approach (**GMA**) is the broad action required to achieve the conservation objective based on a feature's present condition (i.e. to maintain or to restore). JNCC reviewed the draft GMA for features within possible Tranche Two offshore rMCZs and we provide a view on whether the advice provided to Defra by JNCC in 2012 (pre-consultation) or 2013 (post-consultation) requires updating in light of contemporary information available in March 2014 (see Table 1).

JNCC examined the responses to Defra's 2013 public consultation[33] on the Tranche One proposed MCZs (**pMCZ**), MB0116[31] and MB0120[32] Defra contract outputs, and has updated human activities information to determine if there was any further information to assess feature condition in 2014. All appropriate new information has been used in our 2014 assessments of likely condition, and to support our advice on the draft GMA.

JNCC assessed a feature's vulnerability to pressures associated with human activities following the process described in the MCZ Conservation Objective Guidance[62]. Our assessment of a feature's exposure to the pressures associated specifically with fisheries activities followed the methodology outlined in Section 6 of the 2012 advice[24]. For all sites, we checked whether any new human activities were occurring in the known vicinity of the features.

For geological and geomorphological features, the default GMA is set to Maintain and confidence for such a level 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.

Any changes from our 2012[24] or 2013[47] advice to Defra are highlighted in the site sections below. However, JNCC will further amend its advice should new information become available about feature condition.

[61] Please note that the full conservation objective for each feature is: The conservation objective of the 'MCZ' is that the habitats—
(a) so far as already in favourable condition, remain in such condition; and
(b) so far as not already in favourable condition, be brought into such condition, and remain in such condition.
[62] Summary of the MCZ Conservation Objective Guidance. Available at:
http://jncc.defra.gov.uk/PDF/MCZ%20Project%20Conservation%20Objective%20Guidance%20Summary.pdf

## 5.3 Confidence in Feature Condition

MCZ Technical Protocol F[63] sets out the process for assessing confidence in a feature's condition listing five criteria against which the feature must be assessed in order to determine confidence. Readers should consult the protocol in conjunction with our present advice to understand our assessment of confidence in the condition of a feature. Technical Protocol F[63] outlines different approaches, depending on whether the feature's condition was assessed using direct evidence, or by way of the vulnerability assessment process.

By default, confidence in feature condition is Low where the 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 Technical Protocol F[63] for details). Any situations where these additional criteria are satisfied are highlighted in our advice.

Note that for the habitat FOCI Mud habitats in deep water vulnerability assessments, an amendment has been made to the sensitivity scores provided in the MB0102 sensitivity matrix[64]. Within the MB0102 sensitivity matrix[64], Mud habitats in deep water are assessed as highly sensitive to most of the physical damage pressures, with moderate confidence. This means that, perhaps counter intuitively, the MB102 sensitivity matrix[64] assesses Mud habitats in deep water as more sensitive to physical damage pressures than the parent broad-scale habitat Subtidal mud, and one of its component features the habitat FOCI Sea-pen and burrowing megafauna communities. On review of the sensitivity assessments in MB0102[64], it became apparent that the assessment of sensitivity for Mud habitats in deep water was driven by the higher sensitivity of Deep-sea mud[65] in which Mud habitats in deep water can occur. Deep-sea mud occurs at a water depth deeper than 200m below chart datum. All sites in JNCC's 2014 advice occur at depths shallower than 200m. Therefore, Mud habitats in deep water cannot be considered a component of Deep-Sea mud in this advice. To address this issue, the sensitivity scores for the parent habitat Subtidal mud and its associated confidence scores were used in the assessment of feature vulnerability to pressures for Mud habitats in deep water. Consequently is that it is no longer possible to have anything but Low confidence in the condition of Mud habitats in deep water where the feature occurs in the sites advised upon in JNCC's 2014 advice, because it now fails one of the five criteria set out in Technical Protocol F[63].

It should be recognised that, as the full depth range of Mud habitats in deep water is not represented within the sites in this 2014 advice package (i.e. the depths are not below 200m), the sensitivity scores have been adopted from Subtidal mud in this instance. Consequently the General Management Approach (**GMA**) for Mud habitats in deep water may change from a 'Recover' objective to a 'Maintain' objective. This practical

[63] MCZ Technical Protocol F – Assessing scientific confidence of feature condition. Available at: http://jncc.defra.gov.uk/pdf/120106_SNCBs%20MCZ%20Advice%20protocol%20F_confidence%20in%20feature%20condition_v5%200_FINAL.pdf

[64] MB0102 Report Number 22 Task 3. Available at: http://jncc.defra.gov.uk/page-1448

[65] Please note that at the time of the MCZ Ecological Network Guidance being developed Deep-sea mud was not listed as an MCZ feature. The parent feature Deep-sea bed was however listed as an MCZ feature.

change will ensure the same GMA is advised for Mud habitats in deep water and Subtidal mud where both features are based on the same data and cover the same spatial extent.

Note that JNCC has not provided any advice on confidence in feature condition or advice on the GMA for highly-mobile features on the Ecological Network Guidance (**ENG**) features list[26]. For European eel (*Anguilla anguilla*), Smelt (*Osmerus eperlanus*) and Undulate ray (*Raja undulata*) there is no evidence to indicate that these species have any fidelity to the offshore environment (i.e. beyond 12nm) and in particular no evidence to suggest these species have any association to a particular offshore site. For European eel (*Anguilla anguilla*), Defra and Cefas have advised that the species is a habitat generalist, wide ranging, and dispersed, and therefore is not a good candidate for spatial protection as it will be particularly difficult to identify suitable spawning, nursery or foraging grounds for which MCZs are an appropriate tool for spatial protection. For Smelt (*Osmerus eperlanus*), JNCC has data that suggest that for some offshore rMCZs, the species is present and well-distributed in the site. The ENG recommends that Smelt were only considered an appropriate feature for estuarine or near coastal MCZs. Smelt are considered to be estuarine species with a very restricted distribution, rarely found away from the coast. There are no data or scientific evidence to suggest that Smelt have any particular ecological requirements for any areas beyond estuarine and coastal waters. The essential part of its life is spent in the estuarine zone, with just short incursions in the littoral zone[66]. Therefore JNCC views records of Smelt being present within an offshore site as identifying vagrant individuals passing through the area, with no evidence to suggest any element of their life cycle is associated to the offshore or any particular area offshore. JNCC therefore advise that current evidence suggests that an offshore MCZ is not an appropriate measure to protect Smelt as no sensible management action would be available to ensure this feature is in favourable condition within an offshore site. For Undulate ray (*Raja undulata*), there are data to suggest that the species could show fidelity to areas in the English Channel. Data available demonstrates that Undulate ray is present within two offshore sites in the English Channel (Offshore Brighton rMCZ and Offshore Overfalls rMCZ). However these data only show presence and do not provide verification of site fidelity. In accordance with the advice of specialists within Cefas, JNCC advises that Undulate ray should not go forward for designation within a site offshore until data are available verifying site fidelity in the English Channel. Cefas is coordinating ongoing research to identify any nursery and breeding grounds within inshore waters as a priority, with longer-term aspirations to understand the spatial fidelity of adult rays in offshore waters.

## 5.4 Feature Risk

Within JNCC and Natural England's advice on the Regional MCZ projects' recommended MCZs in 2012[24], and in JNCC's 2013 post-consultation advice[25] on Tranche One offshore rMCZs, and using the

[66] Smelt information from FISHBASE. Available at: http://www.fishbase.org/Summary/SpeciesSummary.php?ID=1334&AT=smelt

methodology outlined in MCZ Technical Protocol G[67], advice was provided on the risk of damage to a site. Site risk scores were based on the proportion of features in a site with a 'recover' general management approach. Advice on site risk was provided by JNCC and Natural England to inform Defra's decision-making on those sites to be selected for public consultation and, if supported, ultimately designated. While this approach was used previously, its limitations are stated within Technical Protocol G[67] and so an amended approach has been adopted for JNCC's 2014 advice. This amended approach has been developed to provide more-detailed information on the risk of loss or irreparable damage to features in the short and longer terms within the site rather than risk to the site as a whole.

The methodology for assessing feature risk is contained within the annex to the '*MCZ Levels of Evidence – Advice on when data supports a feature/site for designation from a scientific, evidence-based perspective*'[68] paper. For each site, two risk scores (future and current) are advised for each feature.

1 An assessment of future risk for each feature based on feature sensitivity to pressures, which itself is extracted from the MB0102 sensitivity matrix[64]. Future risk was be categorised as High (Red), Moderate (Amber) or Low (Green) depending on how sensitive a feature is to pressures; if a feature is highly sensitive to one or more pressures it was assigned a high future risk score[68]. Note that occasionally a range of sensitivities are shown within MB102[64]. It should be recognised that a feature's sensitivity to a pressure should be driven knowledge by the biological communities present. In the absence of more detailed analysis of biological communities present, the sensitivity defaults to the highest category to act in a precautionary manner. In reality the sensitivity could be anywhere within the range and the possible future risk could be lower than that presented in JNCC's 2014 advice.

   Furthermore, the assessment of future risk does not incorporate any consideration of exposure of the features to pressures from ongoing activities, or any judgement of the likelihood of activities occurring in the future. Nor does the assessment of future risk imply that a feature will require active management to control a particular pressure that it is sensitive to as it may never be exposed to it. Therefore some caution should be applied when considering future risk scores in different way to that which they have been used in JNCC's advice, in particular those features scoring High (Red) or Moderate (Amber).

2 An assessment of current risk for each feature within a site was undertaken based on the outputs of the vulnerability assessment. Consequently, in contrast to future risk, current risk incorporates

[67] Assessing risk to recommended Marine Conservation Zones – Protocol G. Available at: http://jncc.defra.gov.uk/pdf/protocol-G_tcm6-28393.pdf

[68] JNCC/NE, Advice on when data supports a feature/site for designation from a scientific, evidence-based perspective, July 2014. Available at: http://jncc.defra.gov.uk/page-5999

consideration of exposure to pressures associated with ongoing activities. A feature is considered vulnerable to a pressure where it is both sensitive to, and exposed to, that pressure. Vulnerability, and hence risk of damage or deterioration, increases with increasing sensitivity and exposure. Vulnerability to a pressure is categorised into Low, Moderate or High and these categories were used to assess current risk. Features that are assessed as highly vulnerable to one or more pressures are considered to be at higher current risk of damage or deterioration and were classed as at High (Red) risk.

While the assessment of current risk incorporates a consideration of exposure to pressures from ongoing activities, it does not include any judgement of the likelihood of new or different activities occurring beyond the immediate future.

For each site a table has been provided that show the future[69] and current risk scores for all the features for that site. All risk scores consider pressures from all activities, not just those associated with one particular activity.

## 5.5 Advice on when data support a feature/site for designation from a scientific, evidence-based perspective

Following consideration of the selection process for MCZs that were designated in 2013, a paper was developed in order to inform the selection process for future MCZs. This paper entitled '*MCZ Levels of Evidence – Advice on when data support a feature/site for designation from a scientific, evidence-based perspective*'[68] sets out an approach to provide Defra with advice on the interpretation of evidence and data certainty assessments to enable the JNCC and Natural England to provide advice as to when a feature or site has enough scientific evidence to support its designation as an MCZ. It follows on from the paper published in May 2011 on the '*Levels of evidence required for the identification, designation and management of Marine Conservation Zones*'[70].

A step-by-step process to establishing 'data sufficiency' or scientific justification for designation of a feature or site is outlined in the paper. Firstly, JNCC's advice determines whether a feature has enough data to support its designation. This analysis uses the outputs of the application of Technical Protocol E[40] and its supplementary guidance[41]. Should a feature not have adequate confidence in feature presence or extent, then another question is asked as to whether there are any additional conservation/ecological considerations that may support priority designation of the feature (except where a feature has scored no

[69] Note that according to the MB0102 sensitivity matrix, Subtidal mud (and therefore by default the habitat FOCI Mud habitats in deep water too) are highly sensitive to physical loss (to land or freshwater habitat) but that this pressure is not relevant to the offshore so is excluded from consideration in all future risk scores.
[70] MCZ Levels of Evidence. Available at: http://jncc.defra.gov.uk/pdf/110506_LevelsOfEvidenceForMCZs.pdf

confidence). This question utilises information from JNCC work on *'Identifying the remaining MCZ site options that would fill 'big gaps' in the existing MPA network'*[71] along with expert judgement taking into account new data and changes in knowledge of the sites being advised upon since the work was published in December 2013. The question also uses the outputs of Section 5.4, to consider where a feature may be at high current or future risk and therefore may require a precautionary approach to protect it despite having less data to support that feature. In answering this question, the advice accounts for new data to provide added justification for the designation of a feature where those data indicate the confidence in feature presence or feature extent may be improved prior to designation. Secondly, JNCC's advice provides additional information on a site as a whole in order to allow Defra to make decisions about potential site designation. Such information includes: a consideration of where designating a feature is required in order to protect another feature; a consideration of the proportion of features meeting relevant criteria outlined in the feature assessments; and a consideration of whether a site potentially fills a 'big gap' in the UK's contribution to an ecologically coherent network of MPAs. It also considers whether or not a feature is viable as outlined in the ENG[26].

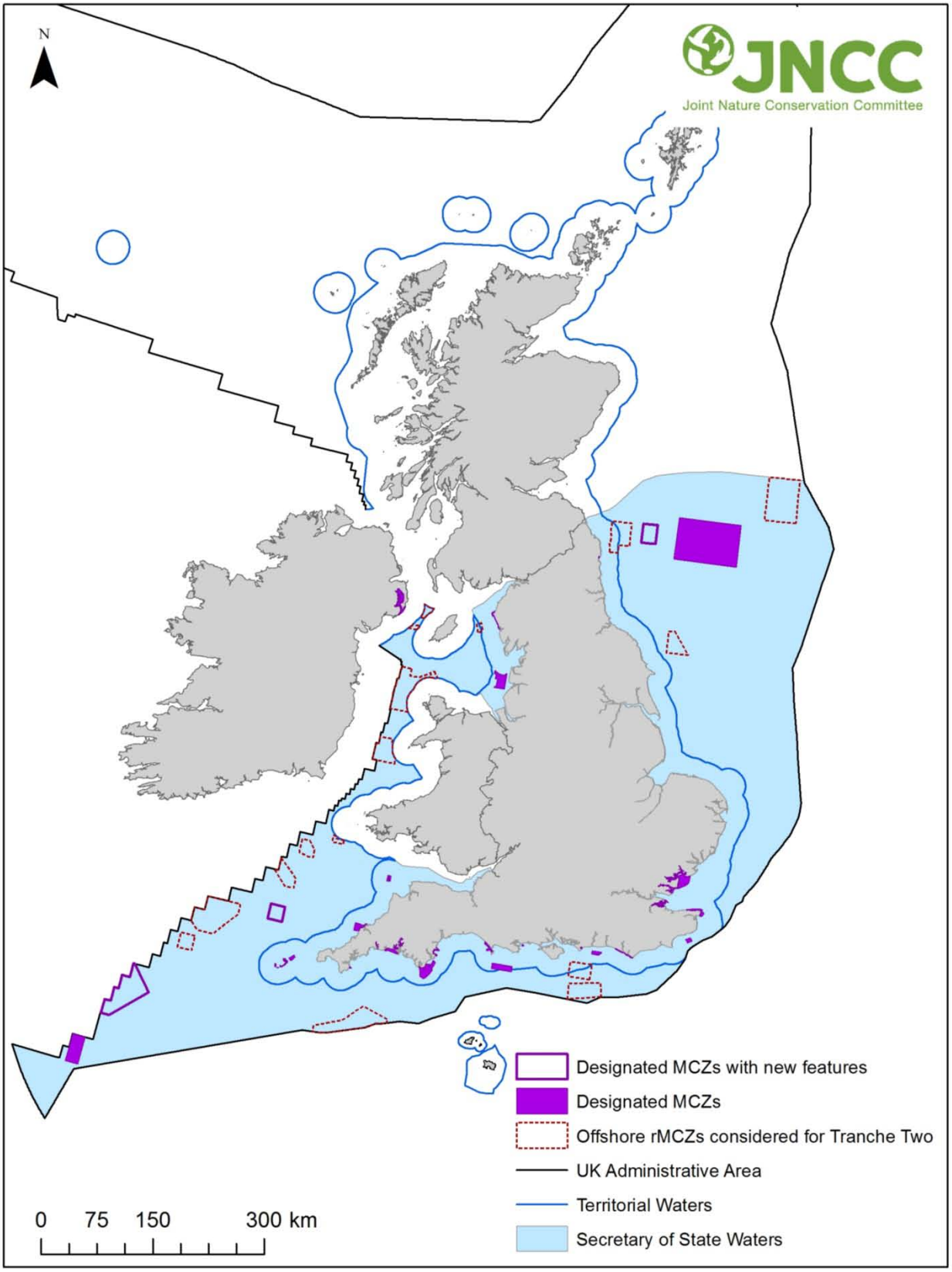
JNCC's advice on when scientific data supports a feature/site for designation follows the process outlined in the paper, and is presented in a table with an accompanying narrative where necessary. Features have also been colour coded green, yellow and red depending on whether they meet the criteria, partially meet the criteria or don't meet the criteria. Our approach aims to provide Defra with clear advice on whether a feature/site should be designated a MCZ.

JNCC's assessment of whether a feature/site could potentially fill a 'big gap' within a region was based on a combination of the outputs of the 'Big Gaps' work undertaken by JNCC for Defra in 2013/14[71] and additional data from more recent survey work for a number of the possible Tranche Two MCZs; the recent data may have resulted in changes to presence/confidence ratings for the features identified within some sites. Following consideration of these changes within the offshore environment only, and set in the context of the sites that have been selected for Tranche Two, JNCC used expert judgement to reassess some of the conclusions from the 'Big Gaps' analysis[71]. It is important to review the outputs of the 'Big Gaps' work[71] presented within this advice package in conjunction with the original paper *'Identifying the remaining MCZ site options that would fill 'big gaps' in the existing MPA network'*[71] as there are several important caveats and limitations associated with the [recent] work. The original 'Big Gaps' work[71] made the assumption that all rMCZs would be contributing to the UK MPA network but the reassessment (presented here) has now been updated to additionally exclude sites that are not being considered for Tranche Two. Furthermore JNCC have only considered changes to offshore sites and have not considered any changes to features within the inshore zone that may result from receipt of new data.

[71] Identifying the remaining MCZ site options that would fill big gaps in the existing MPA network around England and offshore waters of Wales & Northern Ireland, JNCC, 2014. Available at: http://jncc.defra.gov.uk/pdf/140224_BigGapsMethod_v7.pdf

# 6 Site Assessments – Possible Tranche Two rMCZs

Defra requested advice on 37 rMCZs for possible inclusion in Tranche Two for consultation 2015. Of these 37, 16 sites lie in UK offshore or joint inshore/offshore waters and are illustrated below in Figure 5. Furthermore, JNCC has provided advice on three designated sites regarding possible further features, with the consideration of new data made available since the previous assessments.




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**Figure 5: The 16 possible offshore Tranche Two rMCZs and three designated MCZs with further features for consideration**

## 6.1 Celtic Deep rMCZ

Celtic Deep rMCZ was recommended by the Finding Sanctuary regional MCZ project[72] for the broad-scale habitat **Subtidal mud** and the habitat FOCI **Mud habitats in deep water**.

Following data received through the Marine Institute (Republic of Ireland)[73] annual Celtic Sea Nephrops survey, JNCC is also providing advice on the recently identified habitat Feature of Conservation Interest (**FOCI**) **Sea-pen and burrowing megafauna communities**.

### 6.1.1 Assessment of feature presence and extent

The 2014 assessment was conducted on the EUSeaMap[44] and MB0102[74] modelled habitat, and available point data from British Geological Survey (**BGS**), Marine recorder, MB0102[74], and the Marine Institute's annual Nephrops surveys. JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce a new confidence assessment in feature presence and feature extent, utilising all available data for the site (see Section 5.1). A summary of the assessments is presented below in Table 3. The data and assessments can be viewed in full in Annex 4, Table 109 and Table 110.

[72] Finding Sanctuary regional MCZ project website. Available at: http://webarchive.nationalarchives.gov.uk/20120502155448/http://www.finding-sanctuary.org/
[73] Referred to as Marine Institute hereafter
[74] MB0102. Available at: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368

**Table 3: Celtic Deep rMCZ evidence assessment summary**

| Site (Code) | Feature (Code) | Confidence in feature presence (previous assessment scores) | Rationale for confidence in feature presence | Confidence in feature extent (previous assessment scores) | Rationale for confidence in feature extent |
|---|---|---|---|---|---|
| **Celtic Deep rMCZ** (FS10) | **Subtidal mud** (A5.3) | **High** (High) | Interpreted image and sample data clearly demonstrate the presence of a Subtidal mud feature in the site. There are 50 sediment points demonstrating the presence of the feature. | **High** (Moderate) | Available sample data cover the entirety of the site providing high confidence in the extent of Subtidal mud across the site. |
| | **Mud habitats in deep water** | **High** (High) | Interpreted image and sample data clearly demonstrate the presence of a Mud habitats in deep water feature in the site. There are 50 sediment points which support the presence of the feature. | **High** (Moderate) | Available sample data covering the entirety of the site providing high confidence in the extent of Mud habitats in deep water across the site. |
| | **Sea-pen and burrowing megafauna communities*** | **High** (*) | Interpreted image and sample data clearly demonstrate the presence of Sea-pen and burrowing megafauna communities in the site. There are 64 points which support the presence of the feature. | **High** (*) | Available sample data covering the entirety of the site providing high confidence in the extent of Sea-pen and burrowing megafauna communities across the site. |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

JNCC's 2012 assessment used habitat maps derived from models from the UKSeaMap[43] and MB0102[74] projects together with available point sample data from BGS, Marine recorder, and MB0102[74]. These data, alongside newly acquired Marine Institute *Nephrops* fisheries data, are the best-available evidence for feature presence, and feature extent, in the site.

Following a review of the previous assessment of confidence in the presence and extent of the features **Subtidal mud** and **Mud habitats in deep water** within the site, the confidence scores for presence have remained **High** for both features, and the confidence in extent has increased to **High** for both features. During the previous assessment, the BGS data points indicating extent of the features had yet to undergo final quality assurance (**QA**), and so a Moderate confidence was assigned. Now the data have been quality assessed and found to be good quality, we can raise the confidence in extent to **High**. In addition, PSA data from the Marine Institute provide additional supporting evidence for the presence and extent of **Subtidal mud** and **Mud habitats in deep water**.

New data are now available for the Celtic Deep rMCZ for the period 2006–2012 from annual Marine Institute *Nephrops* surveys. JNCC reviewed these newly available taxon data from Marine Institute and noted the recorded presence of **Sea-pen and burrowing megafauna communities** within Celtic Deep rMCZ from surveys conducted between 2006 and 2012. Given the large number of samples confirming presence (see Table 3), and the spread across the entire site, JNCC have **High** confidence in presence and **High** confidence in extent of the feature.

Should Celtic Deep rMCZ be designated by Defra, JNCC advise that **Mud habitats in deep water** is not designated as a feature of a site if **Subtidal mud** and **Sea-pen and burrowing megafauna communities** are designated. As can be seen in Figure 6, these habitats share the same spatial extent. JNCC consider there is limited extra conservation value in designating **Mud habitats in deep water** where it is afforded protection by its parent and component habitats. Please refer to Annex 6 for more information.

JNCC note that there are only single PSA sample points recording the presence of **Subtidal coarse sediment** and **Subtidal sand** (see Figure 6). However, JNCC is not providing any advice for these features since there is very limited additional evidence to corroborate their presence in the site. The MCZ regional project did not recommend either **Subtidal coarse sediment** or **Subtidal sand** as features of the site despite, in the case of **Subtidal sand**, data being available at the time of their recommendations. Furthermore, data from the annual Marine Institute *Nephrops* surveys located near to these single sample points indicate the presence of **Sea-pen and burrowing megafauna communities** which are more associated with Subtidal mud biotopes. Additionally, EUSeaMap[44] does not model any **Subtidal coarse sediment** or **Subtidal sand** within Celtic Deep rMCZ. JNCC concluded there is very limited evidence to support their presence and do not offer any recommendation on these features in terms of their potential designation within a MCZ at this time.

### 6.1.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of confidence in feature condition and General Management Approach (**GMA**) proposed are presented below in Table 4 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 5.

**Table 4: Summary of JNCC's conservation advice for features in Celtic Deep rMCZ**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **Celtic Deep rMCZ** (FS10) | **Subtidal mud** (A5.3) | **Low** (Low) | **Recover** (Recover) |
| | **Mud habitats in deep water** | **Low** (Moderate) | **Recover** (Recover) |
| | **Sea-pen and burrowing megafauna communities*** | **Low** (*) | **Recover** (*) |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

JNCC proposed a General Management Approach (**GMAs**) of **Recover** in our 2012 assessment for **Subtidal mud** and the **Mud habitats in deep water** within Celtic Deep rMCZ. After reviewing all available data, our view in 2014 remains unchanged at **Recover** for these features**,** due to the moderate and high sensitivities of these features to prevailing fishing pressures that occur across this site. A vulnerability assessment using these exposure data indicate both mud features are likely to have been damaged across the extent of the site from both UK and EU trawling activity.

A **Recover** GMA is also appropriate for the recently identified feature within the site **Sea-pen and burrowing megafauna communities** due to its moderate sensitivity and its high exposure to fishing pressures across this site. The feature is therefore likely to be in a modified state due to the UK and EU trawling activity occurring across the extent of the site; See Table 149 in Annex 7 for further details on the vulnerability assessments for these features.

### 6.1.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. JNCC therefore advises **Low** confidence in condition for all of the site features, **Subtidal mud**, **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities**.

Note that **Mud habitats in deep water** has been expertly judged as having **Low** confidence in feature condition due to the reasons explained in Section 5.3 on the feature condition methodology.

### 6.1.4 Feature risk

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7.

**Table 5: Celtic Deep rMCZ feature risk assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| **Celtic Deep rMCZ** (FS10) | **Subtidal mud** (A5.3) | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is highly sensitive (with low confidence) to one/more pressures. |
| | **Mud habitats in deep water** | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Sea-pen and burrowing megafauna communities** | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |

### 6.1.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site as a whole have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence and extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 6 and Table 7 below.

***Feature assessment***

**Table 6: Celtic Deep rMCZ feature data sufficiency assessment**

| Site (Code) | Feature (Code) | Q1a. Confidence score of at least moderate for feature presence? | Q1b. Is 1a based only on parent habitat being present? | Q1c. Confidence score of at least moderate for extent/distribution? | Outcome from Question 1 assessment |
|---|---|---|---|---|---|
| **Celtic Deep rMCZ** (FS10) | **Subtidal mud** (A5.3) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data support designation of feature** |
| | **Mud habitats in deep water** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature, however JNCC advise that this feature is not designated within this site (see Annex 6).** |
| | **Sea-pen and burrowing megafauna communities** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data support designation of feature** |

As the data for these features meet the criteria set by Question 1 and support the case for designation of these features, there is no requirement for Question 2 of the feature assessment to be considered as set out in the paper '*MCZ Levels of Evidence – Advice on when data supports a feature/site for designation from a scientific, evidence-based perspective*'[68] - see Section 5.5 of this advice.

***Site assessment***

**Table 7: Celtic Deep rMCZ site level assessment**

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **No** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Greater than 75%** |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Does this site contribute to filling a big gap in the network?**<br>**Yes**. This site could contribute to filling a big gap in the network. This site is one of two options to be a replicate for **Sea-pen and burrowing megafauna communities** which is currently only afforded protection within one site within the region in the existing network. The site could also contribute to fill representativity gaps for two |

| | |
|---|---|
| | other features, **Subtidal mud in a low energy environment** and **Mud habitats in deep water** which is currently not affording protection within the region in the existing network. The site could also substantially contribute to increasing the percentage of **Subtidal mud** afforded protection within the region (currently only 2.2% of the known area), as well filling a spatial connectivity gap in the region for **Subtidal sediments**. There are several other sites that could also increase the protection of subtidal mud within the network, although with currently only 2.2% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% by area.<br><br>**Representativity** (seeking two examples of each EUNIS Level 3 habitat within each energy category (low, moderate and high) and depth zone (0-10m, 10-75m, 75-200m, 200m+) and two examples of each FOCI within each CP2 region):<br>- This site is one of seven options within the Tranche Two sites to provide a replicate in the region for **Subtidal mud in a low energy environment**. There is currently one site that affords protection to this feature in this energy category which is the Fal and Helford SAC. The other options would be East of Celtic Deep rMCZ, East of Haig Fras MCZ, Greater Haig Fras rMCZ, North-West of Jones Bank rMCZ, South of Celtic Deep rMCZ and South-West Deeps (West) MCZ (although for South of Celtic Deep rMCZ we have recommended that the data does not justify designation).<br>- The site is one of six options within the Tranche Two sites to fill a gap in the region for **Mud habitats in deep water.** There are currently no sites that afford protection to this feature within the region in the existing network. .<br>- The site is one of two options within the Tranche Two sites to provide a replicate in the region for **Sea-pen and burrowing megafauna communities.** There is currently one site that affords protection to this feature within the region in the existing network which is Plymouth Sound and Estuaries SAC.<br><br>**Adequacy** (seeking protection of at least 10% area of each EUNIS Level 3 habitat within each CP2 region):<br>- This site could substantially contribute to increasing the amount of **Subtidal mud** afforded protection within the region (currently 2.2% of the known area protected in the existing network). There are several other sites that could also increase the protection of subtidal mud within the network, although with currently only 2.2% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% by area.<br><br>**Connectivity** (ensuring that sites affording protection to the same habitat at EUNIS Level 2 are not further than 80km apart):<br>- This site would fill a spatial gap in the region for **Subtidal sediments**. |

### 6.1.6 Feature maps

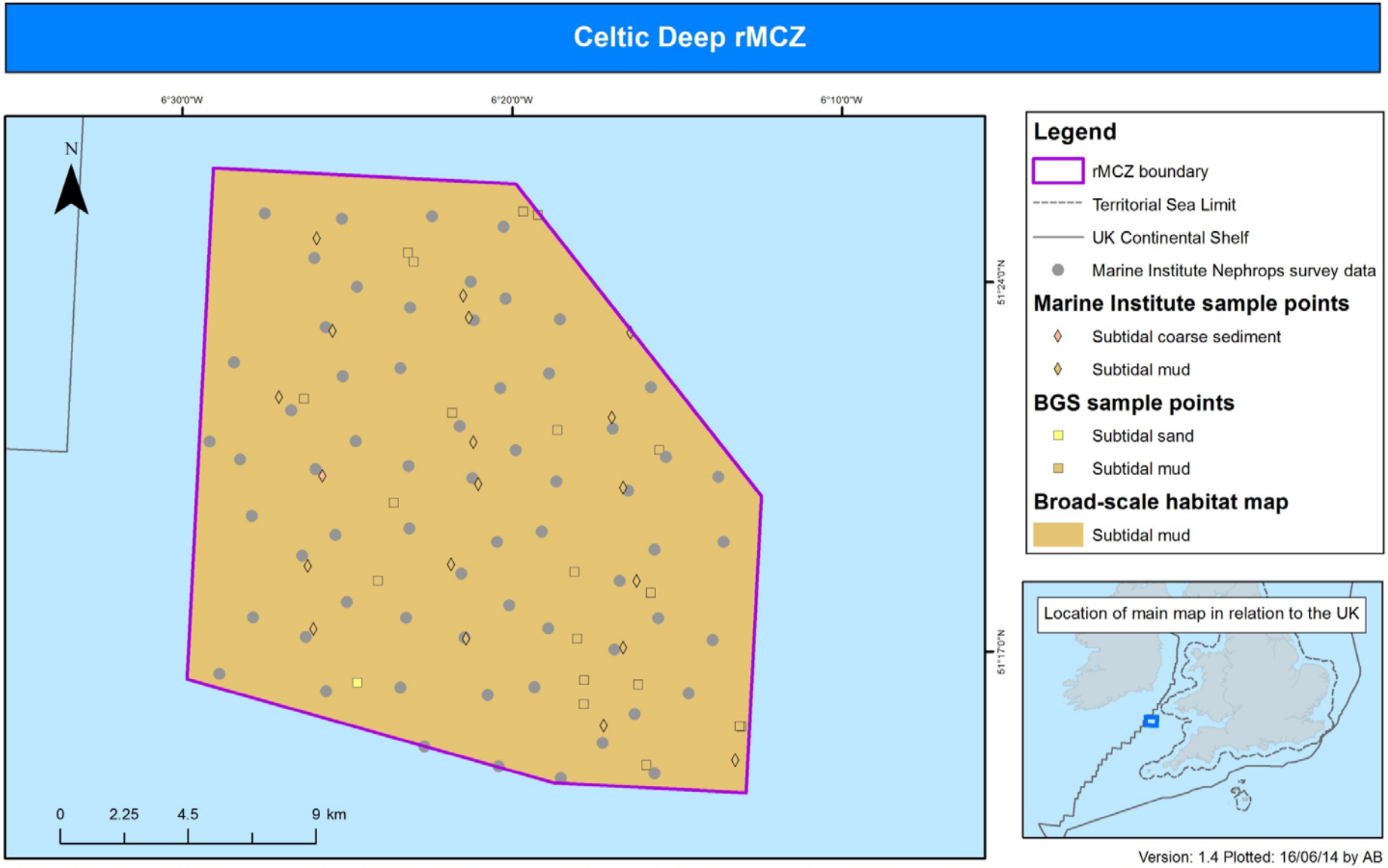



**Figure 6: Map of broad-scale habitats in Celtic Deep rMCZ**

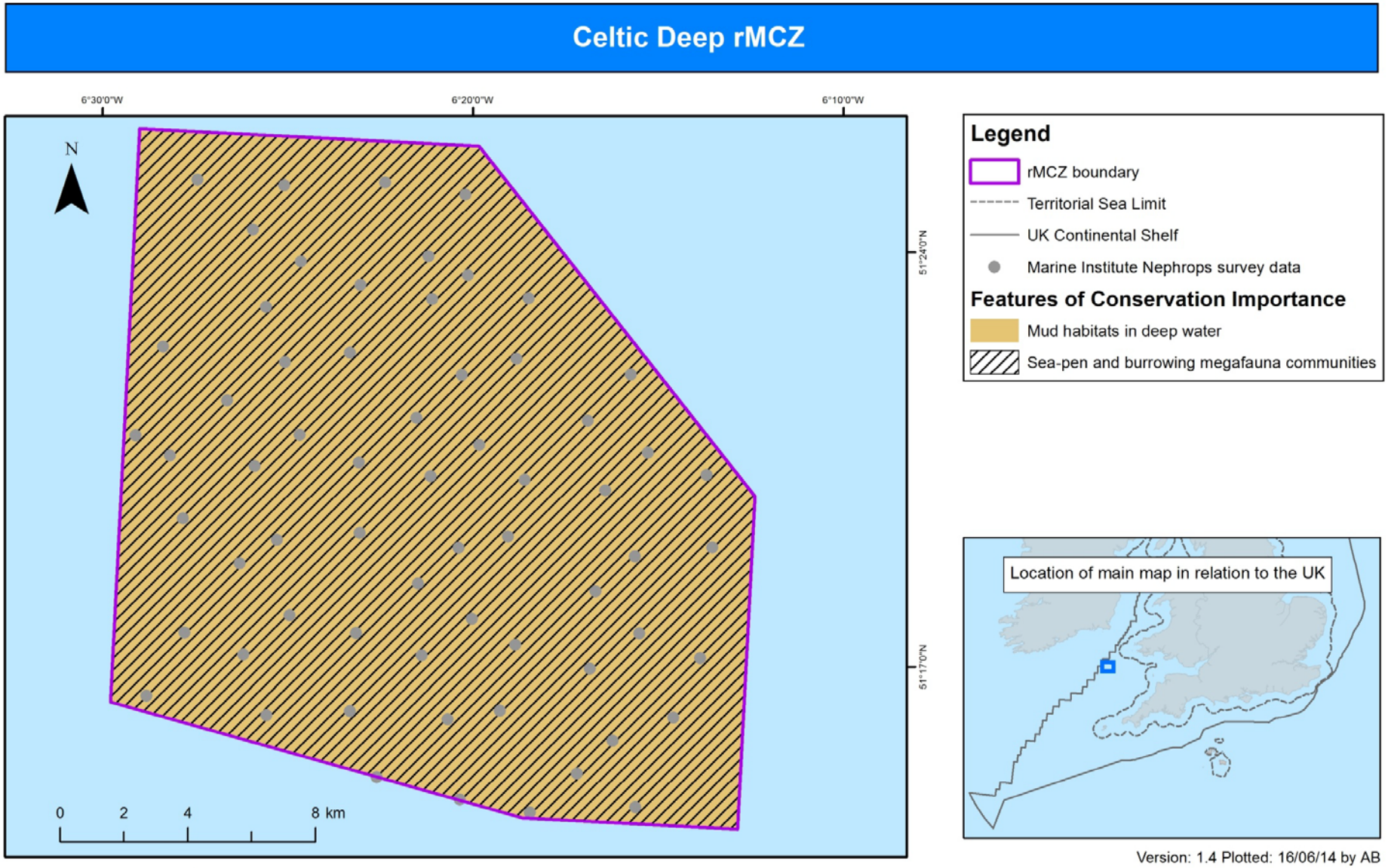



**Figure 7: Map of habitat Features of Conservation Importance in Celtic Deep rMCZ**

## 6.2 Compass Rose rMCZ

Compass Rose was recommended by the Net Gain regional MCZ project[75] for the broad-scale habitat **Moderate energy circalittoral rock**. The project noted the presence of features **Subtidal coarse sediment**, **Subtidal sand** and the habitat Feature of Conservation Interest (**FOCI**) **Subtidal sands and gravels** within the site but they were not recommended as features of the site.

In JNCC's 2014 assessments, we provide advice on **Moderate energy circalittoral rock**, **Subtidal coarse sediment, Subtidal sand** and a recently identified feature - **Subtidal mixed sediments**. The species FOCI **Smelt (*Osmerus eperlanus*)**, and **Ocean quahog (*Arctica islandica*)**, are also included within this 2014 assessment following collection of recent data. JNCC have not assessed the habitat FOCI **Subtidal sands and gravels** – see Section 5.1.

### 6.2.1 Assessment of feature presence and feature extent

The 2014 assessment was conducted on the British Geological Survey (**BGS**) DigSBS250 sediment layer[76] and habitat maps based on models from the MB0102[74] project, and available point sample data from BGS, the MB0102 project[74], 2012 MB0120[32] project survey data and annual International Bottom Trawl Survey catch per unit effort data gathered through MB0116[31]. JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce a new confidence assessment in feature presence and feature extent, utilising all available data for the site (see Section 5.1). A summary of the assessments is presented below in Table 8. The data and assessments can be viewed in full in Annex 4, Table 111 and Table 112.

**Table 8: Compass Rose rMCZ evidence assessment summary**

| **Site** (code) | **Feature** (code) | **Confidence in feature presence** (previous assessment scores) | **Rationale for confidence in feature presence** | **Confidence in feature extent** (previous assessment scores) | **Rationale for confidence in feature extent** |
|---|---|---|---|---|---|
| | **Moderate energy circalittoral rock** (A4.2) | **Low** (Low) | Only modelled data available to demonstrate the presence of Moderate energy circalittoral rock within the site. There are no data points which support the presence of the feature. | **Low** (Low) | Only modelled data available to demonstrate the extent of Moderate energy circalittoral rock within the site with no data points which support the presence of the feature. |

[75] Net Gain regional MCZ project website. Available at: http://webarchive.nationalarchives.gov.uk/20120502152849/http:/www.netgainmcz.org/index.php
[76] BGS DigSBS250250. Available at: http://www.bgs.ac.uk/products/offshore/DigSBS250250.html

| **Site** (code) | **Feature** (code) | **Confidence in feature presence** (previous assessment scores) | **Rationale for confidence in feature presence** | **Confidence in feature extent** (previous assessment scores) | **Rationale for confidence in feature extent** |
|---|---|---|---|---|---|
| **Compass Rose rMCZ** (NG 12) | **Subtidal coarse sediment*** (A5.1) | **High** (*) | Interpreted ground-truthing data clearly demonstrate the presence of the Subtidal coarse sediment feature in the site. There are five points which support the presence of the feature. | **Low** (*) | Only five sample points with patchy isolated distribution available to demonstrate the extent of the Subtidal coarse sediment. Despite extensive sampling across site, expert judgement has been applied to amend the confidence to Low due to the patchy nature of this feature. |
| | **Subtidal sand*** (A5.2) | **High** (*) | Interpreted ground-truthing data clearly demonstrate the presence of the Subtidal sand feature in the site. There are 58 points which support the presence of the feature. | **High** (*) | Available sample data well distributed across the site with good match to underlying mapped feature providing high confidence in the extent of Subtidal sand in the site. |
| | **Subtidal mixed sediments*** (A5.4) | **Moderate** (*) | Interpreted ground-truthing data demonstrate the presence of Subtidal mixed sediments. There are four PSA points from Cefas and BGS grabs which support the presence of the feature. | **Low** (*) | Only four sample points with patchy isolated distribution available to demonstrate the extent of the Subtidal mixed sediments. Despite extensive sampling across site, expert judgement has been applied to amend confidence to Low due to the patchy nature of this feature. |
| | **Ocean quahog (*Arctica islandica*)*** | **Low** (*) | Only one sample point to demonstrate the presence of Ocean quahog in this site. | **Low** (*) | Only one sample point to demonstrate the distribution of Ocean quahog in this site. |
| | **Smelt (*Osmerus eperlanus*)*** | **Moderate** (*) | There are records to demonstrate the presence of Smelt in the site over an extended period of time, but data are limited. There are 10 records from between 1996 and 2012 but only three of these records are from within the last six years. Data were recorded using techniques appropriate for the species with assessment undertaken by specialists. | **Moderate** (*) | Records from surveys contain evidence on the distribution and/ or abundance of the species across the site. Some data are less than 12 years old, but there are insufficient records from within the last six years to justify High confidence (only three records). |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

JNCC has reviewed its previous 2012 assessment of low confidence in the presence and extent of the feature **Moderate energy circalittoral rock**, and after analysis of recently collected sediment grab samples, video recordings and still image data. There is no evidence to support the feature's presence within the site noting previous BGS data indicating the potential presence of rock. These BGS data originated from rock and sediment gravity corers (with sub-surface drilling) but recent data does not show the presence of rock outcrops at the surface (from Cefas and separate BGS survey points). It is therefore likely that there is a sediment veneer of sand, coarse sediment and mixed sediment covering the underlying rock strata previously detected by BGS sampling. The site has only limited multibeam acoustic data and JNCC therefore cannot interpret the acoustic data to identify hard substrate. While a potential indication of

an incline representing a ridge/trough can be seen in the northern area of the site (potentially the 'Heartbreak Ridge' noted by fisherman in the original regional project recommended in 2011[77]), coverage is patchy and the ground-truthing data show no confirmation of rock presence at the surface. The confidence for both presence and extent in **Moderate energy circalittoral rock** is therefore **Low**.

Recent data for the Compass Rose rMCZ are now available following an MB0120[32] survey in 2012, which collected grab, video and still samples along with corridors of multibeam data. **Subtidal sand**, which was not previously assessed as a feature, is now shown to be dominant across the site. There are also a smaller number of records for **Subtidal coarse sediment** and **Subtidal mixed sediments** interspersed within the sand, indicative of a primarily sandy habitat with patchy/mosaic areas of other minor habitats. These data in conjunction with previous surface samples from BGS surveys, increase confidence for the **Subtidal sand** feature to **High** for presence and **High** for extent**.** Our confidence in the presence of the **Subtidal coarse sediment** feature is **High** due to ground-truthing data identifying the feature at five sample stations. However, with this relatively low number of points and their relatively patchy distribution across the site, with no clear grouped points, analysts used their expert judgement to downgrade the extent from moderate to **Low** as explained below. Similarly our confidence in the **Subtidal mixed sediments** feature is **Moderate** for presence and **Low** for extent due to only four samples being found, and the feature seemingly patchy in its distribution across the site. Following the strict definitions in Technical Protocol E[40] confidence in extent for both **Subtidal coarse sediment** and **Subtidal mixed sediments** could have been judged 'moderate' due to the wide spatial distribution of the - albeit limited number of - sampling points throughout the site. However, the JNCC MCZ Evidence QA Group reviewed the strict application of the protocol in such circumstances and concluded that, taking into account the size of the site, the sample distribution was too patchy in nature to be moderately confident in the extent of both features, particularly noting the distribution of the main **Subtidal sand** feature. In other words, the samples assigned to **Subtidal sand** effectively demonstrate the absence of the **Subtidal coarse sediment** and the **Subtidal mixed sediments** showing these latter features are restricted to isolated smaller patches within the site. Many more samples would be required to fully establish the distribution of such features across the site to provide any greater confidence in their distribution.

When undertaking the assessment of sediment features in this site, the BGS map of Quaternary seabed sediments (DigSBS250[76]) was used instead of the EUSeaMap[44] layer (as this latter layer uses the modelled BGS hard substrate layer as a proxy for hard substrate at, or within 50 cm, of the seabed surface). DigSBS250[76] was used due to the recent sampling effort not finding any evidence to support the presence of **Moderate energy circalittoral rock** within the site. Note that this methodology is consistent with other sites where the DigSBS250[76] layer was originally aggregated to broad-scale habitat categories using the

[77] Net Gain final recommendations, p382. Available at: http://jncc.defra.gov.uk/PDF/120718_MCZAP_120702_NG_Final_report_version_1.2.pdf

BGS Modified Folk sediment Trigon[78] before being combined with the BGS hard substrate layer to create the EUSeaMap used elsewhere.

Following a review of International Bottom Trawl Surveys from 1996 to 2012, JNCC's confidence in the presence of the species FOCI **Ocean quahog (*Arctica islandica*)** is **Low**. Whilst data are less than 12 years old, only a single record is present in or near the site so expert judgement reduced the confidence in extent to **Low**. Our confidence for the presence of the highly-mobile species FOCI **Smelt (*Osmerus eperlanus*)** is **Moderate** and **Moderate** for extent as 10 samples recorded its presence across the site within the last 12 years, however only three of these samples were within the last six years.

### 6.2.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of confidence in feature condition and General Management Approach (**GMA**) proposed are presented below in Table 9 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 9: Summary of JNCC's conservation advice for features in Compass Rose rMCZ**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **Compass Rose rMCZ** (NG 12) | **Moderate energy circalittoral rock** (A4.2) | **Not Assessed** (Low) | **Not Assessed** (Recover) |
| | **Subtidal coarse sediment** (A5.1) | **Low** (*) | **Recover** (*) |
| | **Subtidal sand** (A5.2) | **Low** (*) | **Maintain** (*) |
| | **Subtidal mixed sediments** (A5.4) | **Low** (*) | **Recover** (*) |
| | **Ocean quahog (*Arctica islandica*)** | **Low** (*) | **Maintain/Recover** (*) |
| | **Smelt (*Osmerus eperlanus*)** | **Not Assessed** (*) | **Not Assessed** (*) |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

During the previous 2011 recommendation by Net Gain regional project a **Recover** objective was advised for **Moderate energy circalittoral rock**. However, after all available data in 2014, JNCC was unable to recommend a GMA due to the low confidence in both presence and extent of the feature, and the likelihood (even after the collection of recent evidence) that the feature does not outcrop from the sediment layer across the site.

[78] UKSeaMap (2010) Technical Report 3. Available at: http://jncc.defra.gov.uk/pdf/UKSeaMap2010_TechnicalReport_3_Substrate2.pdf

We advise **Recover** GMAs for the proposed features **Subtidal coarse sediment** and **Subtidal mixed sediments** because they are considered highly to moderately vulnerable to pressures associated with fishing activity shown to occur over their known extent within the site. We advise a **Maintain** GMA for **Subtidal sand** because it was not considered vulnerable to any pressures associated with ongoing activities; see Table 150 in Annex 7 for further details on the vulnerability assessments for these features.

JNCC is not able to advise a GMA for the species FOCI **Ocean quahog (*Arctica islandica*)** due to our low confidence in the feature's presence and extent within the site (a single record), together with our low confidence in feature condition and an unknown level of exposure to pressures due its sparse occurrence.

JNCC are not able to advise a GMA for the highly-mobile species FOCI **Smelt (*Osmerus eperlanus*)** due to lack of evidence demonstrating its fidelity to any sites within the offshore area as essential to the species life cycle or life history (see Section 5.3 for further explanation).

### 6.2.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. JNCC therefore advises **Low** confidence in the condition of the broad-scale habitats **Subtidal coarse sediment**, **Subtidal sand**, and **Subtidal mixed sediments**. The species FOCI **Ocean quahog (*Arctica islandica*)** was also assigned **Low** due to our low confidence in its extent.

### 6.2.4 Feature Risk

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7.

**Table 10: Compass Rose rMCZ feature risk assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| **Compass Rose rMCZ** (NG 12) | **Moderate energy circalittoral rock** (A4.2) | Feature not assessed | |
| | **Subtidal coarse sediment** (A5.1) | **Moderate**<br>Feature is **moderately vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal sand** (A5.2) | **Low**<br>Feature is **not moderately or highly vulnerable** to any pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |

| | | | |
|---|---|---|---|
| | **Subtidal mixed sediments** (A5.4) | **Moderate**<br>Feature is **moderately vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Ocean quahog (*Arctica islandica*)** | **Low**<br>Feature is **not moderately or highly vulnerable** to any pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Smelt (*Osmerus eperlanus*)** | Feature not assessed | |

### 6.2.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site as a whole have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence and extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 11, Table 12 and Table 13 below.

***Feature assessment***

**Table 11: Compass Rose rMCZ feature data sufficiency assessment**

| **Site** (Code) | **Feature** (Code) | **Q1a. Confidence score of at least moderate for feature presence?** | **Q1b. Is Q1a based only on parent habitat being present?** | **Q1c. Confidence score of at least moderate for extent/ distribution?** | **Outcome from Question 1 assessment** |
|---|---|---|---|---|---|
| **Compass Rose rMCZ** (NG 12) | **Subtidal coarse sediment** (A5.1) | **Yes** (High confidence) | **No** | **No** (Low confidence) | Move to Question 2 of the feature assessment (see Table 12) |
| | **Subtidal sand** (A5.2) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal mixed sediments** (A5.4) | **Yes** (Moderate confidence) | **No** | **No** (Low confidence) | Move to Question 2 of the feature assessment (see Table 12) |
| | **Ocean quahog (*Arctica islandica*)** | **No** (Low confidence) | **N/A** | **N/A** | Move to Question 2 of the feature assessment (see Table 12) |

## Table 12: Compass Rose rMCZ assessment of additional conservation/ecological considerations

| **Site** (Code) | **Feature** (Code) | **Q2a: Does the feature fill a 'big gap' in the network AND have confidence score of at least moderate for feature presence?** | **Q2b: Is the feature at high risk of damage?** | **Outcome from Question 2 assessment** |
|---|---|---|---|---|
| **Compass Rose rMCZ** (NG 12) | **Subtidal coarse sediment** (A5.1) | **Maybe** – the site is one of four options to fill a gap for this feature (although there could be better options), and confidence in feature presence is high. | **No** – This feature is currently at Moderate risk of damage and Moderate risk of damage in the future. | **Feature should be further considered** by Defra because it could help fill a big gap in the network. However JNCC note that the feature is not at high risk of damage and there is only a small patch of this feature and six sample points supporting the feature and confidence in feature extent is low and so there may be better options for representing this feature within the region. |
| | **Subtidal mixed sediments** (A5.4) | **Maybe** – the site is one of four options to fill a gap for this feature (although there could be better options), and confidence in feature presence is moderate. | **No** – This feature is currently at Moderate risk of damage and Moderate risk of damage in the future. | **Feature should be further considered** by Defra because it could help fill a big gap in the network. However JNCC note that the feature is not at high risk of damage and this feature is based on three sample points supporting the feature and confidence in extent is low and so there may be better options for representing this feature within the region. |
| | **Ocean quahog (*Arctica islandica*)** | **No** – there are no big gaps for this feature in the region and the feature has low confidence in presence. | **Yes** - This feature is currently at Low risk of damage but there is High risk of damage in the future from the following activities: Bioprospecting; Energy production - at sea (tidal, wave and wind turbines); Extraction - sand & gravel, quarrying; Fishing - hydraulic dredging, benthic trawling; Infrastructure - cables & pipelines (Installation), cables & pipelines (Operation), offshore (oil & gas platforms), offshore (wind & wave turbines); and Shipping. | **Feature should be further considered** by Defra so that the designation decision is based on consideration of specific circumstances such as where the precautionary principle is applied. Note JNCC has assessed the feature as low confidence in presence, and it does not fill a big gap in the network, but it is at high risk of damage. Additionally this feature may not be viable as this feature is based solely on a single record with no knowledge of its patch size. Therefore JNCC advise this feature should not be designated. |

### *Site level assessment*

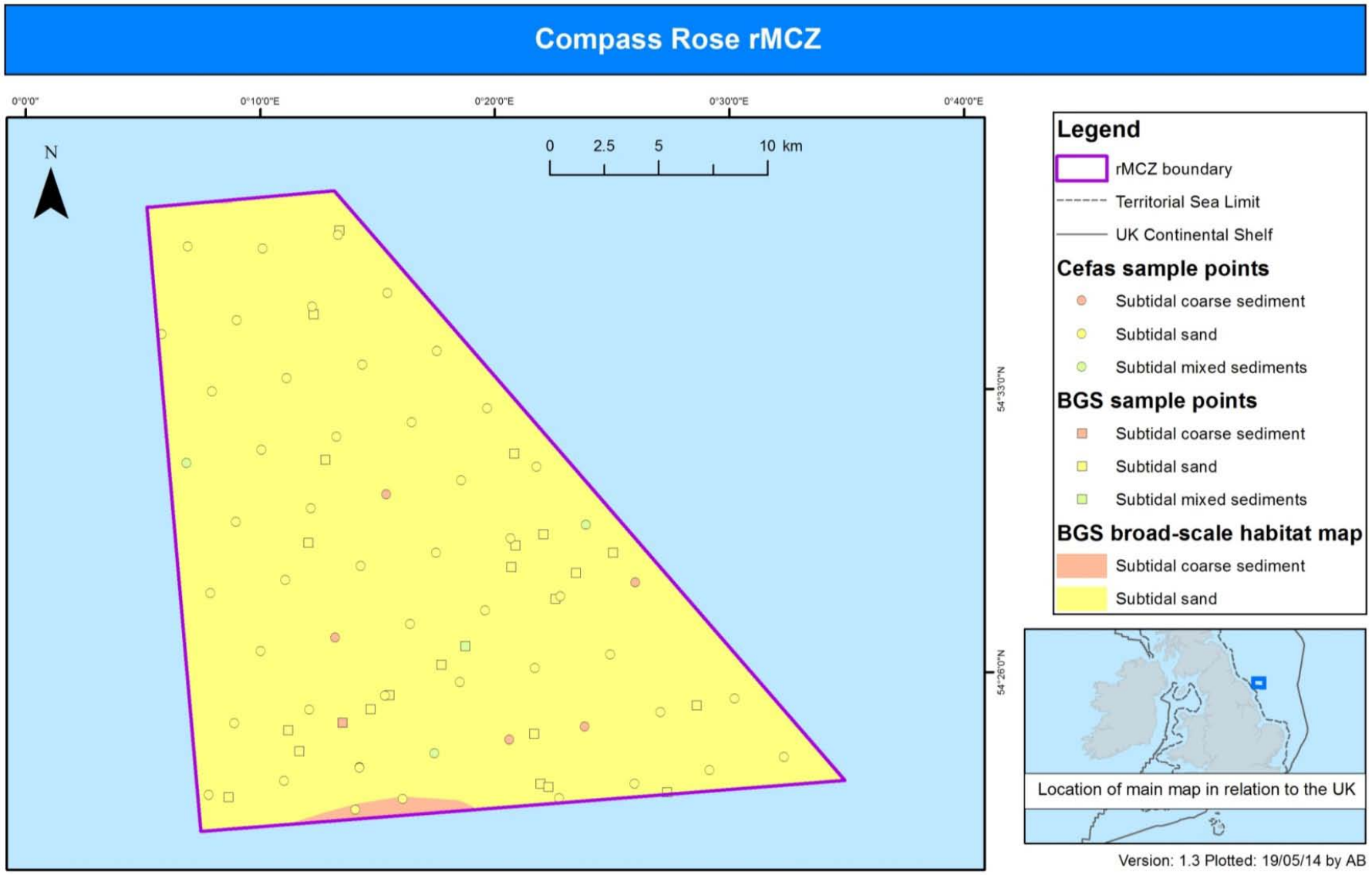
## Table 13: Compass Rose rMCZ site level assessment

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **No** |

| | |
|---|---|
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Greater than 75%** |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Does this site contribute to filling a big gap in the network?**<br><br>**Maybe**. This site could potentially contribute to filling a big gap in the network. This site could substantially contribute to increasing the percentage of **Subtidal sand** afforded protection in the region which is currently only 4.3% of the known area and could make by far the best contribution out of the three options (alternatives are Farnes East rMCZ which would make a smaller contribution and Fulmar rMCZ which we only have low confidence in the extent of the feature) for this feature within the region. It could also contribute to increasing the amount of **Subtidal coarse sediment** afforded protection within the region, however it should be noted that the feature is a small patch and there may be better options for increasing the amount of this feature afforded protection within other sites in the region. This site could help provide a replicate for three features within the region. This site is one of four options to provide a replicate in the region for **Subtidal mixed sediments in 75-200m depth,** one of four options to provide a replicate in the region for **Subtidal mixed sediments in a moderate energy environment**. However it should be noted that there may better options to represent these features within other sites in this region.<br><br>**Representativity** (seeking two examples of each EUNIS Level 3 habitat within each energy category (low, moderate and high) and depth zone (0-10m, 10-75m, 75-200m, 200m+) and two examples of each FOCI within each CP2 region):<br>- The site is one of four options within the Tranche Two sites to provide a replicate in the region for **Subtidal mixed sediments in 75-200m depth**. There is currently only one site that affords protection to this feature in this depth/energy category within the region in the existing network, which is Moray Firth SAC. The other site options would be Farnes East rMCZ, Fulmar rMCZ and North East of Farnes Deep MCZ. However, it should be noted that this feature has low confidence in extent and so there may be better options to represent this habitat within other sites in this region.<br>- The site is one of four options within the Tranche Two sites to provide a replicate in the region for **Subtidal mixed sediments in a moderate energy environment**. There is currently only one site that affords protection to this feature in this depth/energy category within the region in the existing network, which is Moray Firth SAC, The other site options would be Coquet to St Mary's rMCZ, Farnes East rMCZ and Runswick Bay rMCZ. However, it should be noted that this feature has low confidence in extent and so there may be better options to represent this habitat within other sites in this region.<br><br>**Adequacy** (seeking protection of at least 10% area of each EUNIS Level 3 habitat within each CP2 region):<br>- This site could contribute to increasing the amount of **Subtidal coarse sediment** afforded protection within the region (currently 4.0% of the known area protected in the existing network). However, it should be noted that the feature is a small patch and there may be better options for increasing the amount of this feature afforded protection within other sites in the region.<br>- This site could substantially contribute to increasing the amount of **Subtidal sand** afforded protection within the region (currently 4.3% of the known area protected in the existing network) and could make by far the best contribution out of the three options (alternatives are Farnes East rMCZ which would make a smaller contribution and Fulmar rMCZ which we only have low confidence in the extent of the feature) for this feature within the region. |

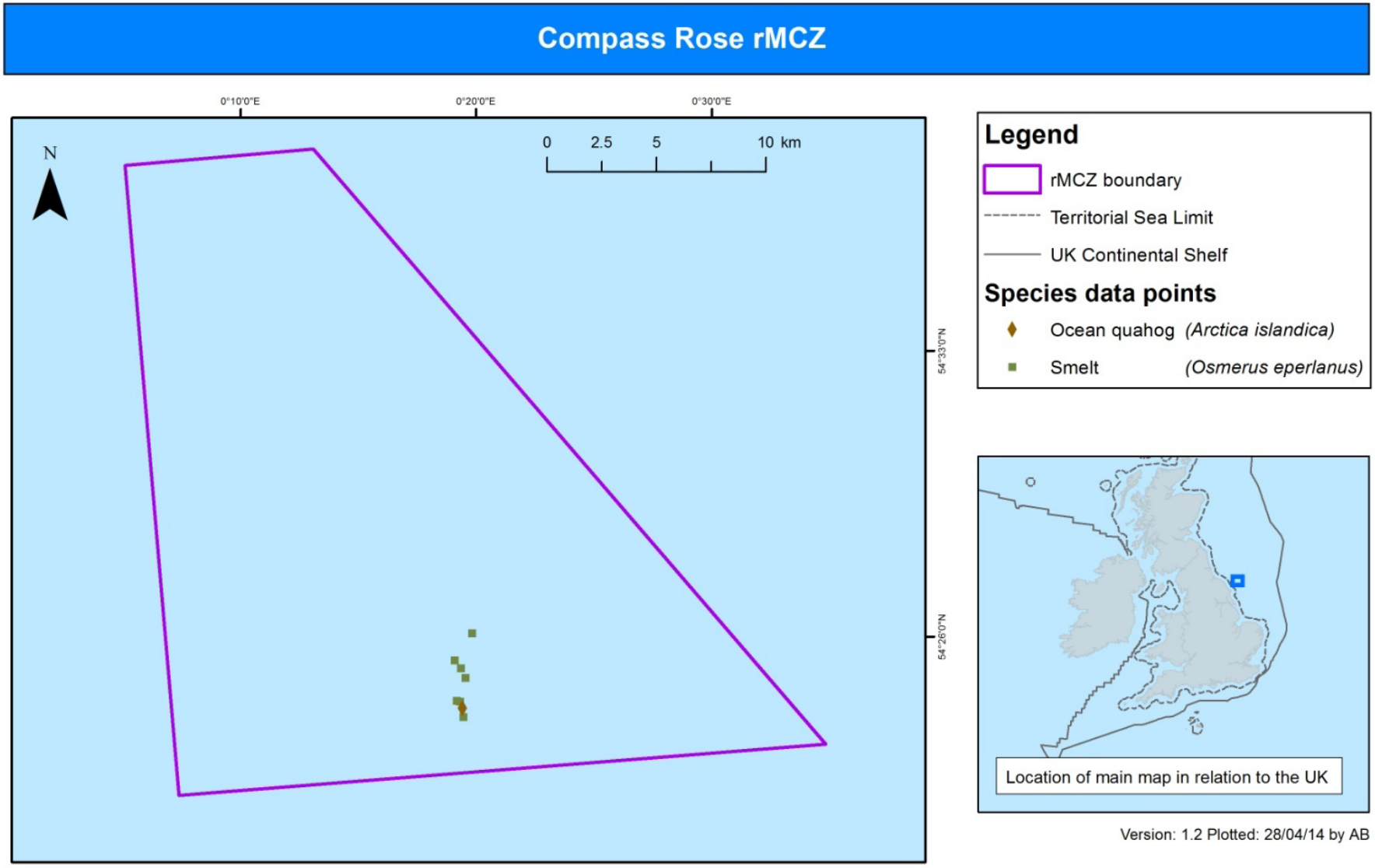
### 6.2.6 Feature maps

Note that Moderate energy circalittoral rock is not displayed in Figure 8 as there is no evidence displaying the feature outcropping within the site.




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BGS sample points: Licence JNCC IPR/139-2DY, British Geological Survey ©NERC. Not to be used for navigation. © JNCC 05/2014

**Figure 8: Map of broad-scale habitats in Compass Rose rMCZ**




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**Figure 9: Map of species Features of Conservation Importance in Compass Rose rMCZ**

## 6.3 East of Celtic Deep rMCZ

East of Celtic Deep was recommended by the Finding Sanctuary regional MCZ project[72] for the broad-scale habitats **Subtidal coarse sediment**, **Subtidal sand** and **Subtidal mud**. The habitat Feature of Conservation Interest (**FOCI**) **Subtidal sands and gravels** were not recommended by the regional MCZ project.

Prior to the public consultation in 2012-2013, JNCC recommended that the feature **Subtidal coarse sediment** should not be considered as a feature for designation in this site, as the small size of the feature (0.7km$^2$) makes it is unlikely it could be successfully managed to achieve favourable condition.

The broad-scale habitat **Subtidal mixed sediments** and habitat FOCI **Mud habitats in deep water** were recorded in the site by a recent MB0120 survey[32]. JNCC has assessed these potential new features for East of Celtic Deep rMCZ in this present advice.

This rMCZ overlaps with a Special Protected Areas (**SPA**) Area of Search for breeding Manx Shearwater (*Puffinus puffinus)*[79]. SPAs are created under the EU Wild Birds Directive (2009) for rare and vulnerable birds as listed in Annex I of the Directive.

### 6.3.1 Assessment of feature presence and extent

The 2014 assessments were conducted using a habitat map from MB0120[32] and available point data from the British Geological Survey (**BGS**), Marine Recorder, and MB0120[32]. JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce a new confidence assessment in feature presence and feature extent, utilising all available data for the site (see Section 5.1). A summary of the assessments is presented below in Table 14. The data and assessments can be viewed in full in Annex 4, Table 113 and Table 114.

[79] JNCC Report 461, Kober et al., 2012. Available from: http://jncc.defra.gov.uk/page-6268

**Table 14: East of Celtic Deep rMCZ evidence assessment summary**

| Site (Code) | Feature (Code) | Confidence in feature presence (previous assessment scores) | Rationale for confidence in feature presence | Confidence in feature extent (previous assessment scores) | Rationale for confidence in feature extent |
|---|---|---|---|---|---|
| **East of Celtic Deep rMCZ** (FS11) | **Subtidal coarse sediment** (A5.1) | **No Confidence** (Low) | Only modelled data available to demonstrate the presence of Subtidal coarse sediment within the site. Recent ground-truthing has not recorded this feature within the site; expert judgement has been applied to amend confidence from Low to No confidence. | **No Confidence** (Low) | JNCC have no confidence in the presence of this feature within the site, therefore the extent has not been assessed. |
| | **Subtidal sand** (A5.2) | **High** (Moderate) | A full coverage habitat map from survey with 25 ground-truthing data points clearly demonstrate the presence of Subtidal sand in the site. | **High** (Low) | Full coverage habitat map covering more than 50% of the mapped extent of the feature with supporting ground–truth sample data provides high confidence in the extent of Subtidal sand in the site. |
| | **Subtidal mud** (A5.3) | **High** (Low) | A full coverage habitat map from survey with 10 ground-truthing data points clearly demonstrate the presence of Subtidal mud in the site. | **High** (Low) | Full coverage habitat map covering more than 50% of the mapped extent of the feature with supporting ground–truth sample data provides high confidence in the extent of Subtidal mud in the site. |
| | **Subtidal mixed sediments*** (A5.4) | **High** (*) | A full coverage habitat map from survey with two ground-truthing data points clearly demonstrate the presence of Subtidal mixed sediments in the site. | **High** (*) | Full coverage habitat map covering more than 50% of the mapped extent of the feature with supporting ground –truth sample data provides high confidence in the extent of Subtidal mixed sediments in the site. |
| | **Mud habitats in deep water*** | **High** (*) | A full coverage habitat map from survey with nine ground-truthing data points clearly demonstrate the presence of Mud habitats in deep water in the site. | **High** (*) | Full coverage habitat map covering more than 50% of the mapped extent of the feature and supporting ground –truth sample data provides high confidence in the extent of Mud habitats in deep water in the site. |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

JNCC have **No confidence** the feature **Subtidal coarse sediment** is present within the East of Celtic Deep rMCZ; no further advice is provided. This judgement is due to the small spatial predicted by the EUSeaMap habitat model within the rMCZ, together with a lack of ground-truthing data available for the feature despite targeted survey effort within the site. Consequently, JNCC used expert judgment to assign this feature a score of **No confidence**, as ordinarily **Low** confidence could be assigned under Technical Protocol E[40] when only modelled/interpreted data are available. However as no evidence was found to support the presence of this feature during in a recent survey, including almost full coverage acoustic data

and well-distributed sediment sampling stations, JNCC considers that there is no evidence supporting the presence of **Subtidal coarse sediment** in the site.

Multiple ground-truthing sample points from the 2012 MB0120 survey[32] and from BGS confirm the presence of **Subtidal sand** in the site. The extent of **Subtidal sand** has been mapped using acoustic data gathering by Cefas and its extent is similar to that predicted by the EUSeaMap[44] habitat model. Consequently, JNCC now has **High** confidence in presence (previously moderate in 2012) and **High** confidence in the extent (previously low in 2012) for **Subtidal sand** in East of Celtic Deep rMCZ. Our increased confidence reflects the recent high quality survey data collected within the site.

JNCC have **High** confidence in the presence and **High** confidence in the extent of **Subtidal mud** in the site following gathering multiple ground-truth sampling points and a mapped extent of the feature from the MCZ verification survey of the site (see Figure 10).

The feature **Subtidal mixed sediments** was not previously recommended for this site but was recently recorded during a MB0120[32] survey. JNCC has **High** confidence in both the presence and extent of this feature as there is a full coverage habitat map from survey with ground-truth sample data available. JNCC recommend that **Subtidal mixed sediments** is added as feature to the East of Celtic Deep rMCZ.

JNCC have **High** confidence in the presence and **High** confidence in the extent of the habitat FOCI **Mud habitats in deep water**. The site is located within a low energy environment, the required energy state for this particular habitat. Our **High** confidence in the presence and extent of this feature is due to multiple ground-truth data collected in the MB0120[32] survey, in addition to a full coverage habitat map displaying its extent. JNCC recommend that **Mud habitats in deep water** is added as feature to the East of Celtic Deep rMCZ.

JNCC is not providing advice on the habitat FOCI **Sea-pen and burrowing megafauna communities**. While data were available from annual Marine Institute *Nephrops* surveys of the Celtic Sea, these data did not indicate the presence of the habitat FOCI **Sea-pen and burrowing megafauna communities** as the mean burrow density from each individual data point within the site were lower than that required to classify the habitat as being present. Therefore no data exists to confirm presence of the feature in the site at this time. For more information on this process, see Section 5.1.

### 6.3.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of confidence in feature condition and the General Management Approach (**GMA**) proposed are presented below in Table 15 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 15: Summary of JNCC's conservation advice for features in East of Celtic Deep rMCZ**

| **Site** (code) | **Feature** (code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **East of Celtic Deep rMCZ** (FS11) | **Subtidal coarse sediment** (A5.1) | **Not Assessed** (Low) | **Not Assessed** (Recover) |
| | **Subtidal sand** (A5.2) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal mud** (A5.3) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal mixed sediments*** (A5.4) | **Low** (*) | **Recover** (*) |
| | **Mud habitats in deep water*** | **Low** (*) | **Recover** (*) |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

The regional MCZ project recommended **Recover** GMA for the features **Subtidal sand** and **Subtidal mud**; JNCC agreed in our 2012 advice[24] on these recommendations. After the review of currently available data (see Table 1) our view remains unchanged in 2014 for these features. JNCC advise a Recover GMA for the proposed features **Subtidal mixed sediments** and **Mud habitats in deep water.** These features are considered moderate to highly vulnerable to pressures associated with fishing activities across the site; refer to the VAs for further detail in Annex 7 Table 151.

### 6.3.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. We previously advised that JNCC had **Low** confidence in the condition of the features **Subtidal mud** and **Subtidal sand**. Our view remains unchanged in 2014 JNCC. JNCC advices that we have **Low** confidence in feature condition for the additional features **Subtidal mixed sediments** and **Mud habitats in deep water**. Note that **Mud habitats in deep water** has been expertly judged as having **Low** confidence in feature condition due to the reasons explained in Section 5.3 on the feature condition methodology.

### 6.3.4 Feature risk

Section 5.4 provides information on the data used and the methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7.

**Table 16: East of Celtic Deep rMCZ feature risk assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| | **Subtidal coarse sediment** (A5.1) | Feature not assessed | |
| **East of Celtic Deep rMCZ** (FS11) | **Subtidal sand** (A5.2) | **Moderate** Feature is **moderately vulnerable** to one/more pressures. | **High** Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Subtidal mud** (A5.3) | **High** Feature is **highly vulnerable** to one/more pressures. | Moderate Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal mixed sediments** (A5.4) | **Moderate** Feature is **moderately vulnerable** to one/more pressures. | **Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Mud habitats in deep water** | **High** Feature is **highly vulnerable** to one/more pressures | **Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to one/more pressures. |

### 6.3.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site as a whole have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence and extent, considered additional conservation/ecological matters that may support priority designation of a feature, whether a feature is at risk of damage or whether the feature could potentially fill a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice with the assessment and results presented in Table 17 and Table 18 below.

***Feature assessment***

**Table 17: East of Celtic Deep rMCZ feature data sufficiency assessment**

| Site | Feature (Code) | Q1a. Confidence score of at least moderate for feature presence? | Q1b. Is 1a based only on parent habitat being present? | Q1c. Confidence score of at least moderate for extent/distribution? | Outcome from Question 1 assessment |
|---|---|---|---|---|---|
| **East of Celtic Deep rMCZ** (FS11) | **Subtidal sand** (A5.2) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal mud** (A5.3) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal mixed sediments** (A5.4) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Mud habitats in deep water** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |

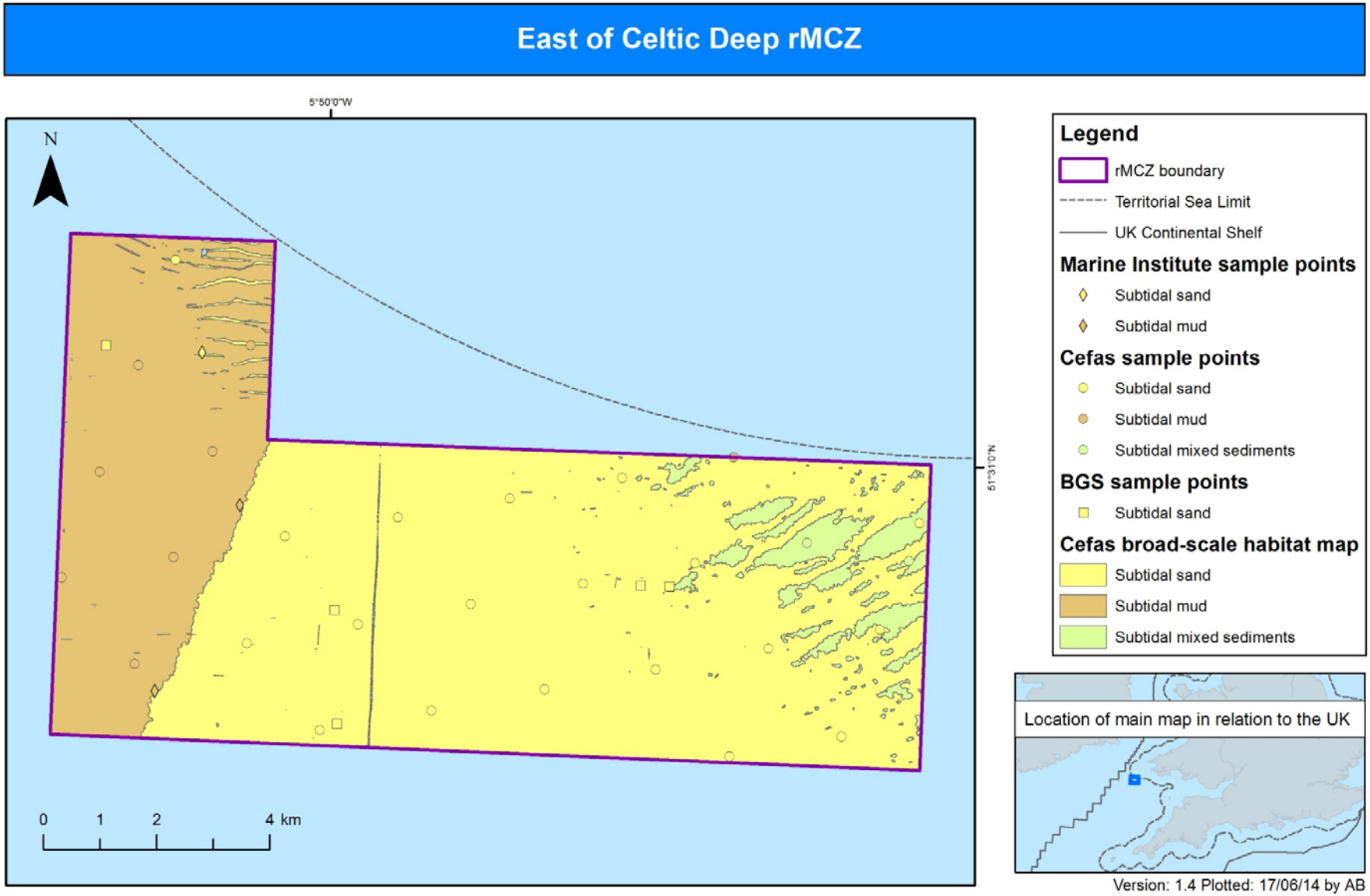
As the data for these features meet the criteria set by Question 1 and support the case for designation of these features, there is no requirement for Question 2 of the feature assessment to be considered as set out in the paper '*MCZ Levels of Evidence – Advice on when data supports a feature/site for designation from a scientific, evidence-based perspective*'[68] - see Section 5.5 of this advice.

***Site level assessment***

**Table 18: East of Celtic Deep rMCZ site level assessment**

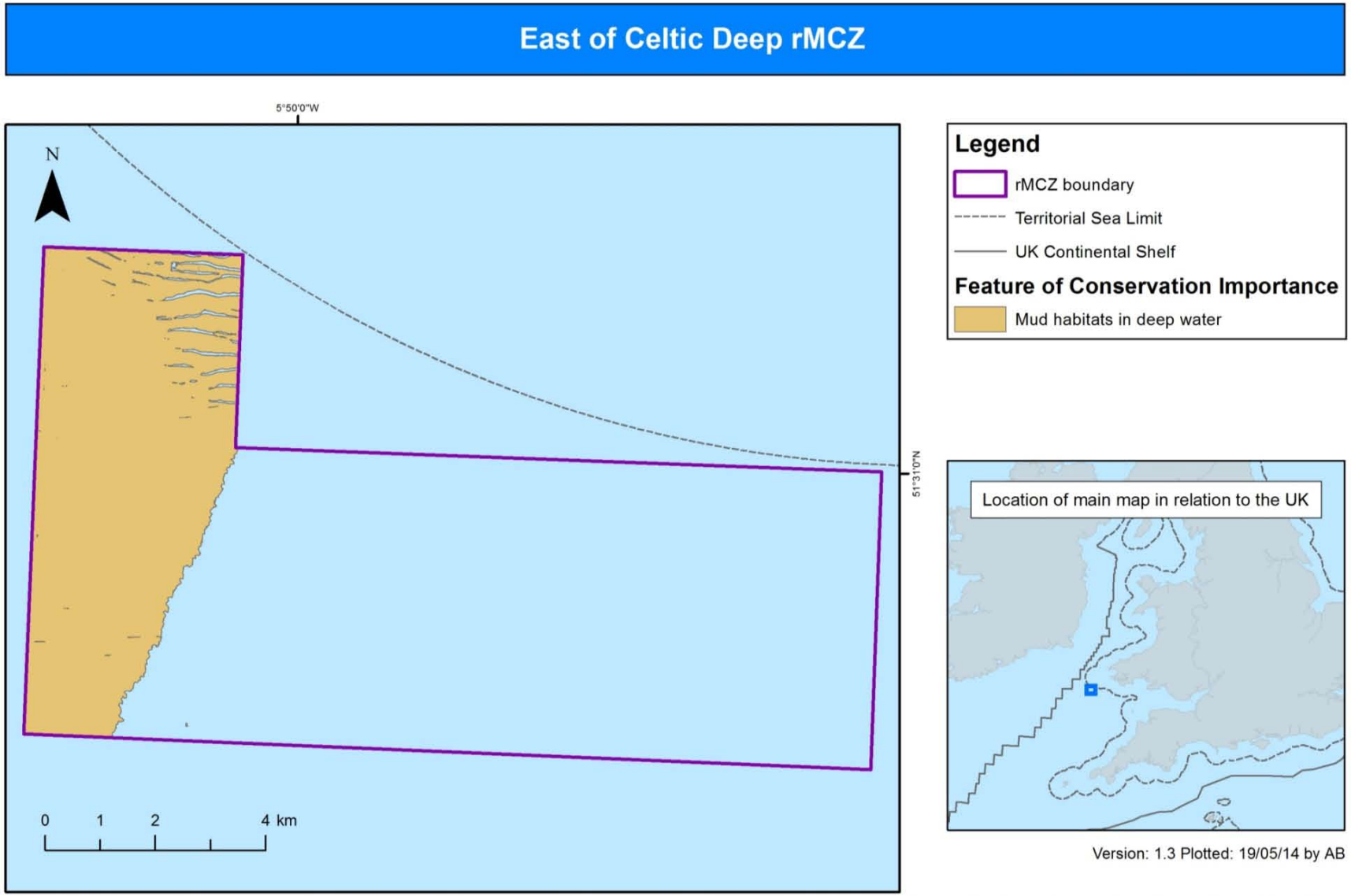
| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **No** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Greater than 75%** |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Does this site contribute to filling a big gap in the network?**<br>**Yes**. This site could contribute to filling a big gap in the network. It would help to fill representativity gaps for **Subtidal mud in a low energy environment** and **Mud habitats in deep water** which is currently not afforded protection within the region in the existing network. It would also contribute to increasing the proportion of both **Subtidal sand** and **Subtidal mud** afforded protection within the region. There are several other sites that could also increase the protection of subtidal mud within the network although with currently only 2.2% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% by area.<br><br>**Representativity** (seeking two examples of each EUNIS Level 3 habitat within each energy category (low, moderate and high) and depth zone (0-10m, 10-75m, 75-200m, 200m+) and two examples of each FOCI within each CP2 region):<br>- This site is one of seven options within the Tranche Two sites to provide a replicate in the region for **Subtidal mud in a low energy environment**. There is currently one site that affords protection to this feature in this depth/energy category within the region in the existing network which is the Fal and Helford SAC. The other options would be Celtic Deep rMCZ, East of Haig Fras MCZ, Greater Haig Fras rMCZ, North-West of Jones Bank rMCZ, South of Celtic Deep rMCZ and South-West Deeps MCZ (although for South of Celtic Deep rMCZ we have recommended that the data does not justify designation).<br>- The site is one of six options within the Tranche Two sites to fill a gap in the region for **Mud habitats in deep water**. There are currently no sites that afford protection to this feature within the region in the existing network. The other options for this feature include Celtic Deep rMCZ, East of Haig Fras MCZ, Greater Haig Fras rMCZ, North-West of Jones Bank rMCZ, South of Celtic Deep rMCZ.<br><br>**Adequacy** (seeking protection of at least 10% area of each EUNIS Level 3 habitat within each CP2 region):<br>- This site could contribute to increasing the amount of **Subtidal sand** afforded protection within the region (currently 7.3% of the known area protected in the existing network).<br>- This site could contribute to increasing the amount of **Subtidal mud** afforded protection within the region (currently 2.2% of the known area protected in the existing network). There are several other sites that could also increase the protection of subtidal mud within the network although with currently only 2.2% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% by area. |

### 6.3.6 Feature maps




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**Figure 10: Map of broad-scale habitats in East of Celtic Deep rMCZ**




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**Figure 11: Map of habitat Features of Conservation Importance in East of Celtic Deep rMCZ**

## *6.4* East of Haig Fras MCZ

East of Haig Fras MCZ was designated in November 2013 for the broad-scale habitat features **Moderate energy circalittoral rock**, **Subtidal sand** and a mosaic habitat of **Subtidal coarse sediment/Subtidal mixed sediments**.

In 2013, JNCC provided advice on the feature **Subtidal mud** as a further feature to be included in the designation. This feature was not designated in Tranche One, but is being considered for designation as part of Tranche Two. The habitat Feature of Conservation Interest (**FOCI**) **Mud habitats in deep water** has also been considered as a feature for this site in our 2014 advice.

### 6.4.1 Assessment of feature presence and extent

JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce a new confidence assessment in feature presence and feature extent, utilising all available data for the site (see Section 5.1). A summary of the assessments is presented below in Table 19. The data and assessments can be viewed in full in Annex 4, Table 115 and Table 116.

**Table 19: East of Haig Fras MCZ evidence assessment summary**

| Site (Code) | Feature (Code) | Confidence in feature presence (previous assessment scores) | Rationale for confidence in feature presence | Confidence in feature extent (previous assessment scores) | Rationale for confidence in feature extent |
|---|---|---|---|---|---|
| **East of Haig Fras rMCZ** (FS 07) | **Subtidal mud** (A5.3) | **High** (High) | Full coverage habitat map from survey with supporting ground-truth sample data clearly demonstrate the presence of Subtidal mud in the site. | **High** (High) | Full coverage habitat map from survey with ground-truth sample data providing high confidence in the extent of Subtidal mud in the site. |
| | **Mud habitats in deep water*** | **High** (*) | Full coverage habitat map from survey with supporting ground-truth sample data clearly demonstrate the presence of Mud habitats in deep water in the site. | **High** (*) | Full coverage habitat map from survey with ground-truth sample data providing high confidence in the extent of Mud habitats in deep water in the site. |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

Further to JNCC's advice in 2013, further data were acquired for the site during April 2013 as part of the MB0120[32] survey. Acoustic data and ground-truthing samples were collected to further investigate the designated mosaic feature **Subtidal coarse sediment/Subtidal mixed sediments** but did not include sampling points on the mapped extent of **Subtidal mud**. As a result, JNCC's advice for **Subtidal mud** remains unchanged from 2013; we have **High** confidence in the presence and extent of the feature in the

site. Technical Protocol E[40] requires there to be greater than two ground-truthing samples, where a new habitat map has been produced to assign **High** confidence in presence. Samples should be well distributed across the recommended feature to assign **High** confidence in extent. On this basis, the habitat FOCI **Mud habitats in deep water** has been assigned **High** confidence for both feature presence and feature extent.

Features already designated within East of Haig Fras MCZ have not been reassessed and remain as stated in the Designation Order[80]. Refer to JNCC's advice on offshore Marine Conservation Zones proposed for designation in 2013[47] for further information on these designated features.

A further review of available data did not show the presence of any species FOCI within East of Haig Fras MCZ and therefore no species assessments have been completed.

### 6.4.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of confidence in feature condition and the General Management Approach (**GMA**) proposed are presented below in Table 20 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 20: Summary of JNCC's conservation advice for features in East of Haig Fras MCZ**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **East of Haig Fras rMCZ** (FS 07) | **Subtidal mud** (A5.3) | **Low** (Low) | **Recover** (Maintain) |
| | **Mud habitats in deep water*** | **Low** (*) | **Recover** (*) |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

A **Recover** GMA was proposed for the designated features **Moderate energy circalittoral rock**, **Subtidal coarse sediments**, **Subtidal sand** and **Subtidal coarse** and **mixed sediments** mosaic feature in JNCC's 2013 advice[47].

For the recommended feature **Subtidal mud**, JNCC proposed a **Maintain** GMA in the 2013 advice. Having reviewed updated activities data occurring in the site JNCC now proposes a **Recover** GMA for this feature and for the additional feature **Mud habitats in deep water**. These features are considered moderate to highly vulnerable to pressures associated with fishing activities across the site; refer to the VAs for further detail in Annex 7 Table 152.

[80] East of Haig Fras Designation Order. Available at: http://www.legislation.gov.uk/ukmo/2013/7/created

### 6.4.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. JNCC advises that confidence in the condition of the **Subtidal mud** and **Mud habitats in deep water** are Low. Note that **Mud habitats in deep water** has been expertly judged as having **Low** confidence in feature condition due to the reasons explained in Section 5.3 on the feature condition methodology.

### 6.4.4 Feature risk

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7.

**Table 21: East of Haig Fras MCZ feature risk assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| **East of Haig Fras rMCZ** (FS 07) | **Subtidal mud** (A5.3) | **Moderate**<br>Feature is **moderately vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Mud habitats in deep water** | **Moderate**<br>Feature is **moderately vulnerable** to one/more pressures.<br>. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |

### 6.4.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence and extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 22 and Table 23 below.

### *Feature assessment*

### Table 22: East of Haig Fras MCZ feature data sufficiency assessment

| Site (Code) | Feature (Code) | Q1a. Confidence score of at least moderate for feature presence? | Q1b. Is 1a based only on parent habitat being present? | Q1c. Confidence score of at least moderate for extent/distribution? | Outcome from Question 1 assessment |
|---|---|---|---|---|---|
| | **Subtidal mud** (A5.3) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature.** |
| | **Mud habitats in deep water** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature.** |

As the data for these features meet the criteria set by Question 1 and support the case for designation of these features, there is no requirement for Question 2 of the feature assessment to be considered as set out in the paper '*MCZ Levels of Evidence – Advice on when data supports a feature/site for designation from a scientific, evidence-based perspective*'[68] - see Section 5.5 of this advice.

### *Site level assessment*

### Table 23: East of Haig Fras MCZ site level assessment

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **No** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Less than 50%** but this is only because the other features present within the site, that make up the remainder of the coverage of the site have already been designated in 2013. As this is the case these features cover the equivalent of 100%. |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Do the additional features within the site contribute to filling a big gap in the network?**<br>**Yes**. This site could contribute to filling a big gap in the network. It would help to fill representativity gaps for **Subtidal mud in a low energy environment** and **Mud habitats in deep water** which is currently not afforded protection within the region in the existing network. It would also contribute to increasing the percentage of **Subtidal mud** afforded protection within the region. There are several other sites that could also increase the protection of subtidal mud within the network although with currently only 2.2% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% by area. Due to the site having already been designated and our confidence in feature presence and extent being high, JNCC recognise that designating Subtidal mud and Mud habitats in deep water as features of East of Haig Fras MCZ may be easier than designating entirely new sites to help fill these gaps in the network.<br><br>**Representativity** (seeking two examples of each EUNIS Level 3 habitat within each energy category (low, moderate and high) and depth zone (0-10m, 10-75m, 75-200m, 200m+) and two examples of each FOCI within each CP2 region):<br>- This site is one of seven options within the Tranche Two sites to provide a replicate in the region for **Subtidal mud in a low energy environment**. There is currently one site that affords protection to this feature in this depth/energy category within the region in the existing network which is the Fal and Helford SAC. The other options would be Celtic Deep rMCZ, East of Celtic Deep rMCZ, Greater Haig Fras rMCZ, North-West of Jones Bank rMCZ, South of Celtic Deep rMCZ and South-West Deeps MCZ (although for South of Celtic Deep rMCZ we have recommended that the data does not justify designation).<br>- The site is one of six options within the Tranche Two sites to fill a gap in the region for **Mud habitats in deep water**. There are currently no sites that afford protection to this feature within the region in the existing |

| | |
|---|---|
| | network. The other options for this feature include Celtic Deep rMCZ, East of Celtic Deep rMCZ, Greater Haig Fras rMCZ, North-West of Jones Bank rMCZ, South of Celtic Deep rMCZ.<br><br>**Adequacy** (seeking protection of at least 10% area of each EUNIS Level 3 habitat within each CP2 region):<br>This site could contribute to increasing the amount of **Subtidal mud** afforded protection within the region (currently 2.2% of the known area protected in the existing network). There are several other sites that could also increase the protection of subtidal mud within the network although with currently only 2.2% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% by area. |

### 6.4.6 Feature maps

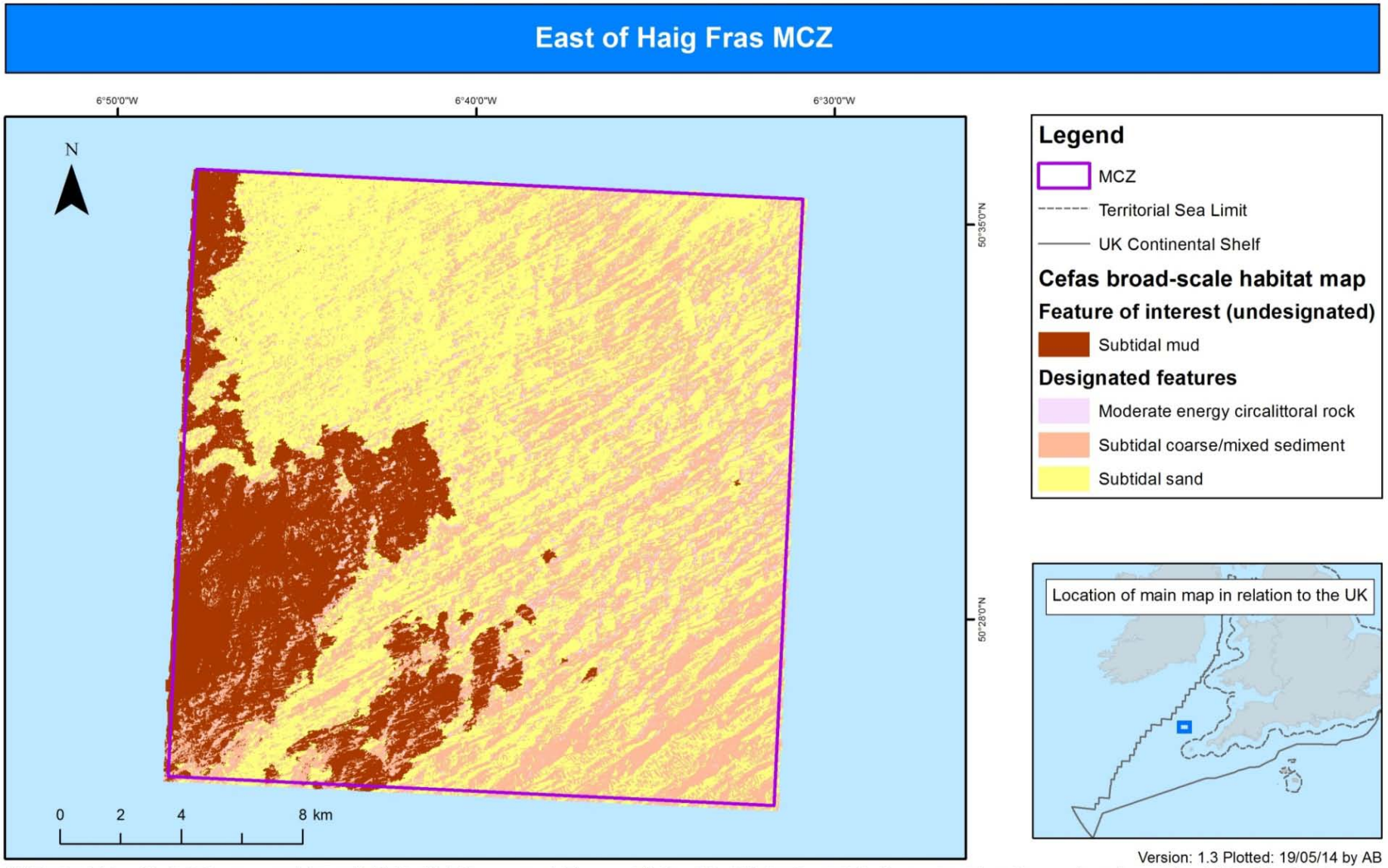



**Figure 12: Map of broad-scale habitats in East of Haig Fras MCZ**

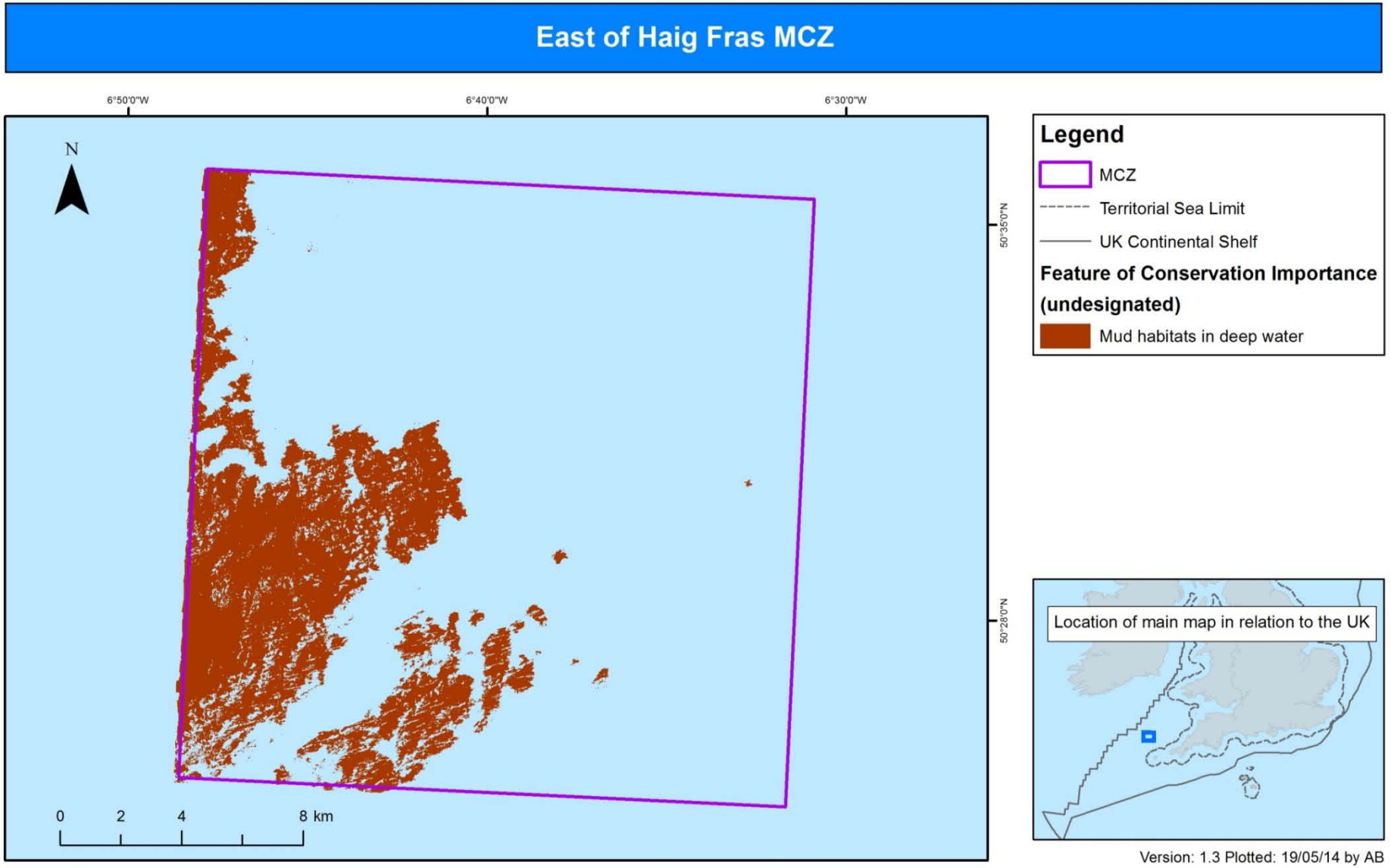



**Figure 13: Map of habitat Features of Conservation Importance in East of Haig Fras MCZ**

## 6.5 Farnes East rMCZ

Farnes East MCZ was recommended by the Net Gain regional MCZ project[75] for the broad-scale habitats **Moderate energy circalittoral rock**, **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mud**, **Subtidal mixed sediments** and the habitat Feature of Conservation Interest (**FOCI**) **Peat and clay exposures**.

A new habitat map was produced in 2013 following an MB0120[32] survey, supporting the presence of the broad-scale habitats **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mud** and **Subtidal mixed sediments**, but does not support the presence of the habitat FOCI **Peat and clay exposures**. The new habitat map also maps Circalittoral rock, the parent habitat of Moderate energy circalittoral rock.

The presence of the habitat FOCI **Sea-pen and burrowing megafauna communities** was identified in the southern portion of the site, based on three ground-truthing samples found within the mapped extent of parent feature, **Subtidal mud**. The habitat FOCI **Mud habitats in deep water** was also identified within the site. The presence of species FOCI **Ocean quahog** (*Arctica islandica*), is identified at 18 survey stations across the site. The high mobility species FOCI **Smelt (*Osmerus eperlanus*)** was also recorded in the site as part of the Defra MB0116[31] contract; however, there is no evidence to support fidelity for this species to this site (see Section 5.3).

### 6.5.1 Assessment of feature presence and extent

Since there are new features confirmed within the site and new evidence to inform the extent of previously recommended features, JNCC assessed presence and extent for all features, taking into account all available data in March 2014. JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce a new confidence assessment in feature presence and feature extent, utilising all available data for the site (see Section 5.1). A summary of the assessments is presented below in Table 24. The data and assessments can be viewed in full in Annex 4, Table 117 and Table 118.

**Table 24: Farnes East rMCZ evidence assessment summary**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature presence** (previous assessment scores) | **Rationale for confidence in feature presence** | **Confidence in feature extent** (previous assessment scores) | **Rationale for confidence in feature extent** |
|---|---|---|---|---|---|
| | **Moderate energy circalittoral rock** (A4.2) | **High** (Low) | A preliminary field assessment from a recent MCZ site verification survey has identified the presence of the feature in multiple ground-truthing samples across the site. | **Low** (Low) | With only preliminary field assessment results there are no processed ground-truthing records to support the presence of this feature and so the extent is based on acoustic data only. |

| Site (Code) | Feature (Code) | Confidence in feature presence (previous assessment scores) | Rationale for confidence in feature presence | Confidence in feature extent (previous assessment scores) | Rationale for confidence in feature extent |
|---|---|---|---|---|---|
| **Farnes East rMCZ** (NG14) | **Subtidal coarse sediment** (A5.1) | **High** (Moderate) | Extensive sonar data recorded in 2012 interpreted into a habitat map with 15 ground-truth sample points clearly demonstrate the presence of Subtidal coarse sediment in the site. | **High** (Low) | New habitat map from survey with the habitat class supported by 15 ground-truthing samples providing high confidence in the extent of Subtidal coarse sediment in the site. |
| | **Subtidal sand** (A5.2) | **High** (Low) | Extensive sonar data recorded in 2012 interpreted into a habitat map with 22 ground-truth sample points clearly demonstrate the presence of Subtidal sand in the site. | **High** (Low) | New habitat map from survey with the habitat class supported by 22 ground-truthing samples providing high confidence in the extent of Subtidal sand in the site. |
| | **Subtidal mud** (A5.3) | **High** (Low) | Extensive sonar data recorded in 2012 interpreted into a habitat map with 17 ground-truth sample points clearly demonstrate the presence of Subtidal mud in the site. | **High** (Low) | New habitat map from survey with the habitat class supported by 17 ground-truthing samples providing high confidence in the extent of Subtidal mud in the site. |
| | **Subtidal mixed sediments** (A5.4) | **High** (Low) | Extensive sonar data recorded in 2012 interpreted into a habitat map with 46 ground-truth sample points clearly demonstrate the presence of Subtidal mixed sediments in the site. | **High** (Low) | New habitat map from survey of the site with the habitat class supported by 46 ground-truthing samples providing high confidence in the extent of Subtidal mixed sediments in the site. |
| | **Mud habitats in deep water*** | **High** (*) | There are 17 ground-truth samples which demonstrate the presence of Mud habitats in deep water in the site. | **High** (*) | New habitat map from survey of the site with the habitat class supported 17 ground-truthing samples providing high confidence in the extent of Mud habitats in deep water in the site. |
| | **Peat and clay exposures** | **Low** (Low) | Only a single polygon record from local knowledge with no ground-truthing data to demonstrate the presence of Peat and clay exposures in this site. Sonar data indicate a distinct feature in the area but there is no data to validate this. | **Low** (Low) | Only a single polygon record from local knowledge with no ground-truthing to validate to demonstrate the extent of Peat and clay exposures in the site. |
| | **Sea-pen and burrowing megafauna communities*** | **Moderate** (*) | There are three ground-truth samples to demonstrate the presence of Sea-pen and burrowing megafauna communities in the site. | **Moderate** (*) | There are three ground-truthing samples located within a mapped extent of Subtidal mud to demonstrate the extent of Sea-pen and burrowing megafauna communities in the site. |
| | **Ocean quahog (*Arctica islandica*)*** | **High** (*) | There are 20 records from surveys that have occurred within the past six years which demonstrate the presence of Ocean quahog in the site. | **High** (*) | There are 20 records which demonstrate the distribution of Ocean quahog in the site. It should be noted that the majority of records are focused in the east and south-west. |
| | **Smelt (*Osmerus eperlanus*)*** | **Moderate** (*) | There are 22 records including four between six and12 years old which demonstrate the presence of Smelt in the site. | **Moderate** (*) | Multiple records demonstrate the distribution of Smelt in the site. It should be noted that the majority of records are predominately in the east of the site, with no records identified in the north west or south west. |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

New data was acquired for this site in March 2012 as part of the MB0120[32] contract. Acoustic and ground-truthing samples were collected in order to increase the evidence available for Farnes East rMCZ. These surveys were supplemented with existing multibeam data from the Civil Hydrography Programme dataset and some Defra Digital Elevation Model data in the north west of the site. A new habitat map (see Figure 14) was subsequently produced highlighting the presence of **Circalittoral rock**, **Subtidal coarse sediment, Subtidal sand, Subtidal mud** and **Subtidal mixed sediments.** The feature map identifies the known spatial extent of the habitat FOCI **Sea-pen and burrowing megafauna communities** and **Mud habitats in deep water** in addition to the distribution of species FOCI **Ocean quahog** (***Arctica islandica***) within the site**.** The habitat FOCI **Peat and clay exposures** is not currently confirmed as being present within the site.

JNCC does not provide advice here on habitat FOCI **Subtidal sands and gravels** in this site. Refer to Section 5.1 for further information.

Technical Protocol E[40] and associated guidance document[41] were applied to the site features to produce a new confidence assessment in feature presence and extent, utilising new and existing data available for the site.

**Moderate energy circalittoral rock** was recommended for this site based on the extent of the feature shown in UKSeaMap[43]. In JNCC's 2012 advice, we advised **Low** confidence in presence and extent for this feature. While new data have been gathered from the site, and a habitat map produced identifying the presence of **Circalittoral rock** (the parent feature of Moderate energy circalittoral rock), there are no ground-truthing records available to support the presence of this feature. Consequently, it must be considered that the presence is only indicated by the interpreted extent identified in the habitat map. In March 2014 the site was resurveyed as part of MB0120[32], which undertook ground-truthing to establish the presence of rock within the site. A field assessment was carried out onboard the vessel, which confirmed the presence of the feature within the site in multiple locations. Using expert judgement the feature has been assigned a **High** confidence in presence based on this new information. The extent of the feature across the site has not been assessed as part of the field assessment carried out during the most recent survey. Instead the extent assessment was carried out using the extent of the parent feature **Circalittoral rock** outlined in the habitat map. Therefore as the extent is only supported by acoustic data, **Low** confidence has been assigned for extent.

The previous 2012 assessment for **Subtidal coarse sediment** advised **Moderate** confidence in presence and **Low** confidence in extent, based on ground-truth data collected by BGS and an interpreted habitat map (UKSeaMap[43]). The survey work undertaken as part of MB0120[32] identified 15 ground-truthing PSA records, which were incorporated into a new habitat map for the site. In order to assign **High** confidence in presence under Technical Protocol E[40], there need to be greater than two ground-truth sample points where a new habitat map has been produced. To assign **High** confidence in extent, these samples should

also be widely distributed across the recommended feature. As a result, in accordance with Technical Protocol E[40] this feature has been assigned **High** confidence for both presence and extent.

JNCC advised in 2012[24] that we had Low confidence in the feature presence and feature extent of the Broad-scale habitat features **Subtidal sand**, **Subtidal mud** and **Subtidal mixed sediments** as a result of the application of purely modelled data or insufficient agreement in point samples to allow a higher confidence. The survey work undertaken as part of MB0120[32] found 22, 17 and 46 ground-truthing PSA records of **Subtidal sand**, **Subtidal mud** and **Subtidal mixed sediments** respectively, which were incorporated into a new habitat map for the site. In accordance with Technical Protocol E[40] these features have been assigned **High** confidence for both presence and extent.

JNCC advised in 2012[24] that we had low confidence in the feature presence and feature extent of the habitat FOCI **Peat and clay exposures**. The feature was identified by local knowledge and incorporated into the sites' recommended features. There were no additional data sources to support the presence of this feature and as a result it was not possible to assign a higher confidence. The data acquired under MB0120[32] did not verify the presence or extent of this feature, therefore the confidence in presence and extent remains **Low** and no further advice is provided here. New data for Farnes East rMCZ have been gathered in March 2014. JNCC will therefore provide further advice should these data verify its presence.

The habitat FOCI **Sea-pen and burrowing megafauna communities** were identified as being present within the site during the MB0120[32] survey in 2012. The presence is supported by three ground-truthing samples located within the mapped extent of its parent habitat Subtidal mud; locations are illustrated in Figure 15. Technical Protocol E[40] requires there to be greater than two ground-truthing samples where a new habitat map has been produced, in order to assign high confidence in feature presence. While there are sufficient ground-truthing samples, there is no mapped extent available, resulting in a **Moderate** confidence being assigned. With multiple samples available, but no mapped extent, in accordance with Technical Protocol E[40], it is advised that a **Moderate** confidence in extent be assigned to this feature.

The habitat FOCI **Mud habitats in deep water** was identified within the site in the recent MB0120[32] survey and we have not previously provided advice about it in this site. Our confidence in the presence and extent of this feature is **High**. This level of confidence is supported by multiple ground-truthing samples and a mapped extent of the feature matching that of **Subtidal Mud** as illustrated in Figure 14.

The species FOCI **Ocean quahog** (***Arctica islandica***) was recently identified in the site and we have not provided advice on it before. The feature was identified as present under the Defra MB0116[31] and MB0120[32] contracts. This feature was identified as single records from two surveys during 2009 and 2010 under MB0116[31]. The dedicated MCZ site verification survey, under MB0120[32], identified the presence of the species at 18 stations, predominately in the east and south-west of the site. With the application of Technical Protocol E[40] and associated guidance document[41], the number of records less than six years old is sufficient in order to advise **High** confidence in presence of this feature. **High** confidence is also

recommended for distribution, although it should be noted that the species has not been recorded across the entirety of the site, with the majority of distribution predominately focused in the areas outlined and in the feature map (See Figure 15).

**Smelt** (***Osmerus eperlanus***) is a high-mobility species FOCI that has been identified as being present within the site through the MB0116[31] contract. This consisted of 22 records sampled by International Bottom Trawl Surveys between 1976 and 2005. Technical Protocol E[40] requires there to be at least five records to be present, some of which being between 6-12 years old in order to achieve Moderate confidence in presence. Moderate confidence in distribution can be assigned where multiple records indicate distribution/abundance and with data less than 12 years of age. As a result under Technical Protocol E[40] JNCC advises **Moderate** confidence in presence and distribution of this feature. It should be noted that the International Bottom Trawl Surveys trawls did not target this species and has not been found in any subsequent surveys since 2005.

Despite the moderate confidence in the presence and distribution of this feature, JNCC advises that **Smelt** (***Osmerus eperlanus***) is not considered further as a feature of this site; see Section 5.3 for more information.

### 6.5.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of confidence in feature condition and General Management Approach (**GMA**) proposed are presented below in Table 25 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 25: Summary of JNCC's conservation advice for features in Farnes East rMCZ**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **Farnes East rMCZ** (NG14) | **Moderate energy circalittoral rock** (A4.2) | **Low** (Low) | **Maintain** (Maintain) |
| | **Subtidal coarse sediment** (A5.1) | **Low** (Low) | **Maintain** (Maintain) |
| | **Subtidal sand** (A5.2) | **Low** (Low) | **Maintain** (Maintain) |
| | **Subtidal mud** (A5.3) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal mixed sediments** (A5.4) | **Low** (Low) | **Maintain** (Maintain) |
| | **Mud habitats in deep water*** | **Low** (*) | **Recover** (*) |
| | **Peat and clay exposures** | **Low** (Low) | **Maintain** (Maintain) |

| **Site** (Code) | **Feature** (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| | **Sea-pen and burrowing megafauna communities*** | **Low** (*) | **Recover** (*) |
| | **Ocean quahog (*Arctica islandica*)*** | **Moderate** (*) | **Recover** (*) |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

In JNCC's 2012 advice[24], GMA's of **Maintain** for **Moderate energy circalittoral rock**, **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mixed sediments** and **Peat and clay exposures** were proposed. Additionally JNCC advised a GMA of **Recover** for **Subtidal mud**. These GMA's are still advised following review in 2014. The recent features added to the site **Mud habitats in deep water, Sea-pen and burrowing megafauna communities** and **Ocean quahog (*Arctica islandica*)** have all been advised a **Recover** GMA, due to them being moderately or highly vulnerable to pressures associated with benthic trawling. For further information, refer to Table 153 in Annex 7.

JNCC are not able to advise a GMA for the highly-mobile species FOCI **Smelt (*Osmerus eperlanus*)** due to lack of evidence demonstrating its fidelity to any sites within the offshore area as essential to the species life cycle or life history (see Section 5.3 for further explanation).

### 6.5.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. JNCC advises **Low** confidence in feature condition for **Moderate energy circalittoral rock**, **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mud**, **Subtidal mixed sediments**, **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities**. Note that **Mud habitats in deep water** has been expertly judged as having **Low** confidence in feature condition due to the reasons explained in Section 5.3 on the feature condition methodology.

Following Technical Protocol F[63], JNCC advises **Moderate** confidence in feature condition for **Ocean quahog (*Arctica islandica*)**.

### *6.5.4* Feature risk

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7.

**Table 26: Farnes East rMCZ feature risk assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| **Farnes East rMCZ** (NG14) | **Moderate energy circalittoral rock** (A4.2) | Low<br>Feature is not moderately or highly vulnerable to any pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Subtidal coarse sediment** (A5.1) | **Low**<br>Feature is not moderately or highly vulnerable to any pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal sand** (A5.2) | **Low**<br>Feature is not moderately or highly vulnerable to any pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Subtidal mud** (A5.3) | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal mixed sediments** (A5.4) | **Low**<br>Feature is not moderately or highly vulnerable to any pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Mud habitats in deep water** | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Peat and clay exposures** | **Low**<br>Feature is not moderately or highly vulnerable to any pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Sea-pen and burrowing megafauna communities** | **High**<br>Feature is **highly vulnerable** to one/more pressures.<br>. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Ocean quahog (*Arctica islándica*)** | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Smelt (*Osmerus eperlanus*)** | Feature not assessed | |

### 6.5.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site as a whole have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence and extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill

a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 27, Table 28 and Table 29 below.

***Feature assessment***

**Table 27: Farnes East rMCZ feature data sufficiency assessment**

| Site (Code) | Feature (Code) | Q1a. Confidence score of at least moderate for feature presence? | Q1b. Is 1a based only on parent habitat being present? | Q1c. Confidence score of at least moderate for extent/ distribution? | Outcome from Question 1 assessment |
|---|---|---|---|---|---|
| Farnes East rMCZ (NG14) | **Moderate energy circalittoral rock** (A4.2) | **Yes** (High confidence) | **Yes** | **N/A** | Move to Question 2 of the feature assessment (see Table 28). |
| | **Subtidal coarse sediment** (A5.1) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal sand** (A5.2) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal mud** (A5.3) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal mixed sediments** (A5.4) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Mud habitats in deep water*** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Peat and clay exposures** | **No** (Low confidence) | **N/A** | **N/A** | Move to Question 2 of the feature assessment (see Table 28). |
| | **Sea-pen and burrowing megafauna communities** | **Yes** (Moderate confidence) | **No** | **Yes** (Moderate confidence) | **Data supports designation of feature** |
| | **Ocean quahog (*Arctica islandica*)** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |

## Table 28: Farnes East MCZ Assessment of additional conservation/ecological considerations

| **Site** (Code) | **Feature** (Code) | **Q2a: Does the feature fill a 'big gap' in the network AND have confidence score of at least moderate for feature presence?** | **Q2b: Is the feature at high risk of damage?** | **Outcome from Question 2 assessment** |
|---|---|---|---|---|
| **Farnes East rMCZ** (NG14) | **Moderate energy circalittoral rock** (A4.2) | **Yes** – This site is the only option within the Tranche Two sites to provide a replicate in the region for Moderate energy circalittoral rock in 75-200m depth because we don't have a confirmed presence of this feature in Compass Rose rMCZ. There is currently only one site that affords protection to this feature in this depth/energy category within the region in the existing network. It is also the only site to contribute to the percentage of Moderate energy circalittoral rock afforded protection within the region (currently there is 6.0% protected in the existing network). Confidence in feature presence is high. | **N/A** | **Conservation benefits support priority feature designation**** |
| | **Peat and clay exposures** | **No** –This site is the only option to fill a gap in the region for Peat and clay exposures and there are currently no sites that afford protection to this feature within the region in the existing network. However, confidence in feature presence is low. | **Yes** - This feature is currently at Low risk of damage but there is High risk of damage in the future from the following activities: Waste disposal - quarrying (geological material), munitions (chemical & conventional), fish waste (land-based processing; processing vessels); Infrastructure - offshore wind & wave turbines, offshore oil & gas platforms, offshore artificial reefs, cables & pipelines (Operation), cables & pipelines (Installation); Fishing hydraulic dredging; Extraction - sand & gravel and oil & gas. | **Feature should be further considered** by Defra so that the designation decision is based on consideration of specific circumstances such as where the precautionary principle is applied because although we only have low confidence in feature presence, this feature would fill a big gap in the network and is at high future risk of damage. |

****** Subject to considerations listed in the method in Section 5.5

### *Site level assessment*

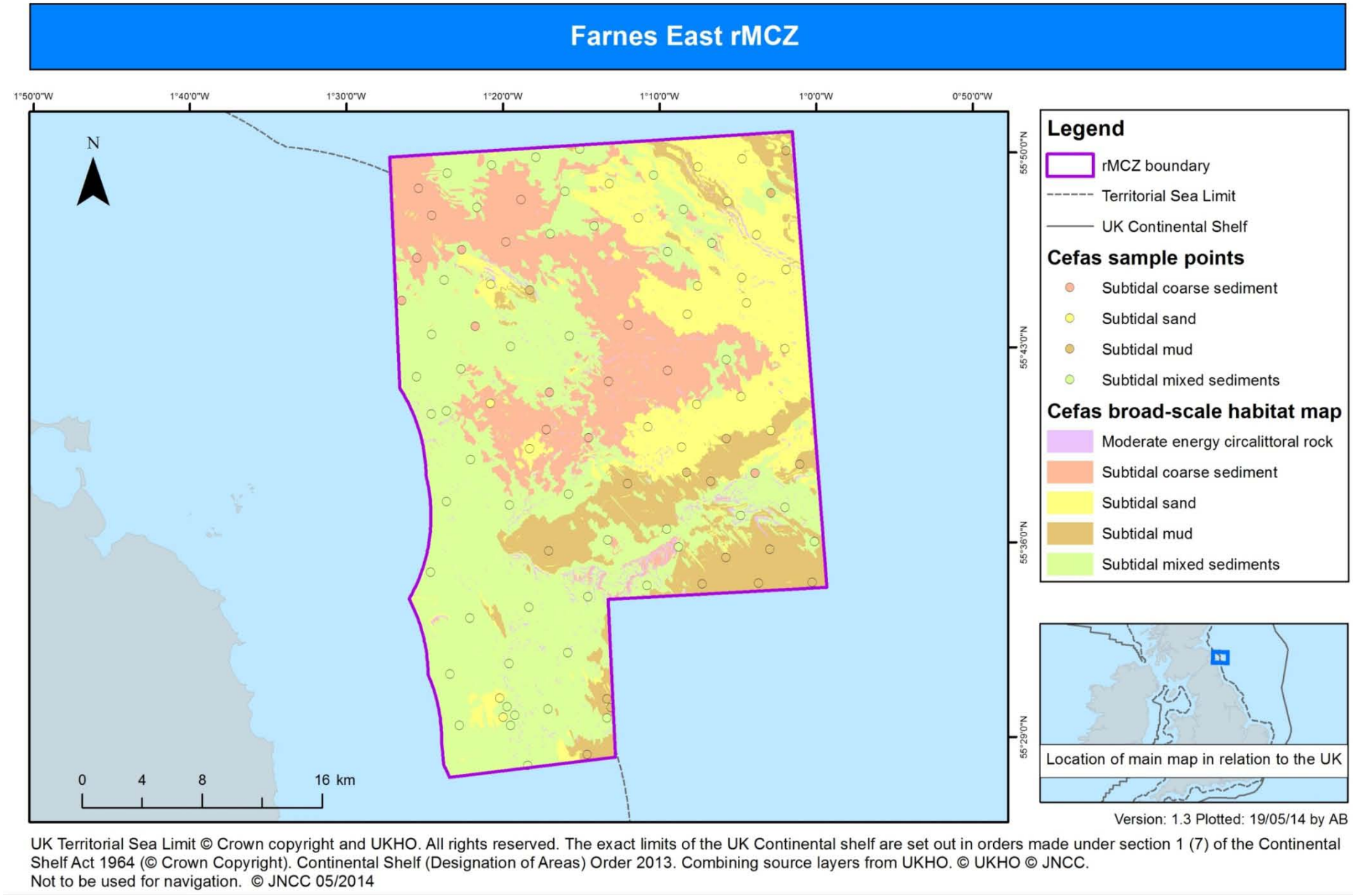
## Table 29: Farnes East rMCZ site level assessment

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **No** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Greater than 75%** |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Does this site contribute to filling a big gap in the network?** **Yes**. This site is the only option within the Tranche Two sites to provide a replicate in the region for **Moderate energy circalittoral rock in 75-200m depth** and to contribute to the percentage of **Moderate energy circalittoral rock** afforded protection within the region (currently there is 6.0% of the known area protected in the existing network) because we |

| | |
|---|---|
| | don't have any data to prove the presence of this feature in Compass Rose rMCZ. It is therefore the only option to fill a spatial gap in the region for **Circalittoral rock** within the region. This site is the only option to fill a gap in the region for **Peat and clay exposures.** However, it should be noted that our confidence in the feature presence is low and so further evidence may be required to demonstrate its presence. This site is one of two options within the Tranche Two sites to fill a gap in the region for **Sea-pen and burrowing megafauna communities** which is currently not afforded protection within the region in the existing network, and is one of three options within the Tranche Two sites to fill a gap for **Mud habitats in deep water** which is also currently not afforded protection within the region in the existing network. The site can also provide replicates for a number of habitats, **Subtidal mixed sediments in 75-200m depth, Subtidal mixed sediments in a moderate energy environment** and **Subtidal mixed sediments in a low energy environment**. This site can contribute to increasing the percentage of **Subtidal coarse sediment, Subtidal sand** and **Subtidal mud** afforded protection within the region. There are a number of other sites that could also increase the protection of subtidal mud, although with currently only <0.1% of known habitat area afforded protection, several sites will be needed to afford protection to the recommended minimum of 10% by area. The unique combination of features at Farnes East rMCZ means that it is a good option to fill multiple big gaps within the region.<br><br>**Representativity** (seeking two examples of each EUNIS Level 3 habitat within each energy category (low, moderate and high) and depth zone (0-10m, 10-75m, 75-200m, 200m+) and two examples of each FOCI within each CP2 region):<br>- This site the only option within the Tranche Two sites to provide a replicate in the region for **Moderate energy circalittoral rock in 75-200m depth** because we don't have any data to prove the presence of this feature in Compass Rose. There is currently only one site that affords protection to this feature in this depth/energy category within the region in the existing network, which is the Pobie Bank Reef SAC.<br>- The site is one of four options within the Tranche Two sites to provide a replicate in the region for **Subtidal mixed sediments in 75-200m depth**. There is currently only one site that affords protection to this feature in this depth/energy category within the region in the existing network, which is Moray Firth SAC, The other site options would be Compass Rose rMCZ, Fulmar rMCZ and North East of Farnes Deep MCZ.<br>- The site is one of four options within the Tranche Two sites to provide a replicate in the region for **Subtidal mixed sediments in a moderate energy environment**. There is currently only one site that affords protection to this feature in this depth/energy category within the region in the existing network, which is Moray Firth SAC, The other site options would be Compass Rose rMCZ, Coquet to St Mary's rMCZ and Runswick Bay rMCZ.<br>- The site is one of three options within the Tranche Two sites to provide a replicate in the region for **Subtidal mixed sediments in a low energy environment**. There is currently only one site that affords protection to this feature in this depth/energy category within the region in the existing network, which is Moray Firth SAC, The other site options would be Fulmar rMCZ and North East of Farnes Deep MCZ.<br>- This site is **the only option** to fill a gap in the region for **Peat and clay exposures**. There are currently no sites that afford protection to this feature within the region in the existing network. However, it should be noted that our confidence in the feature presence is low and so further evidence may be required to demonstrate its presence.<br>- The site is one of three options within the Tranche Two sites to fill a gap in the region for **Mud habitats in deep water** in the region. There are currently no sites that afford protection to this feature within the region in the existing network. The other site options are Fulmar rMCZ and North-East of Farnes Deep MCZ.<br>- This site is one of two options within the Tranche Two sites to fill |

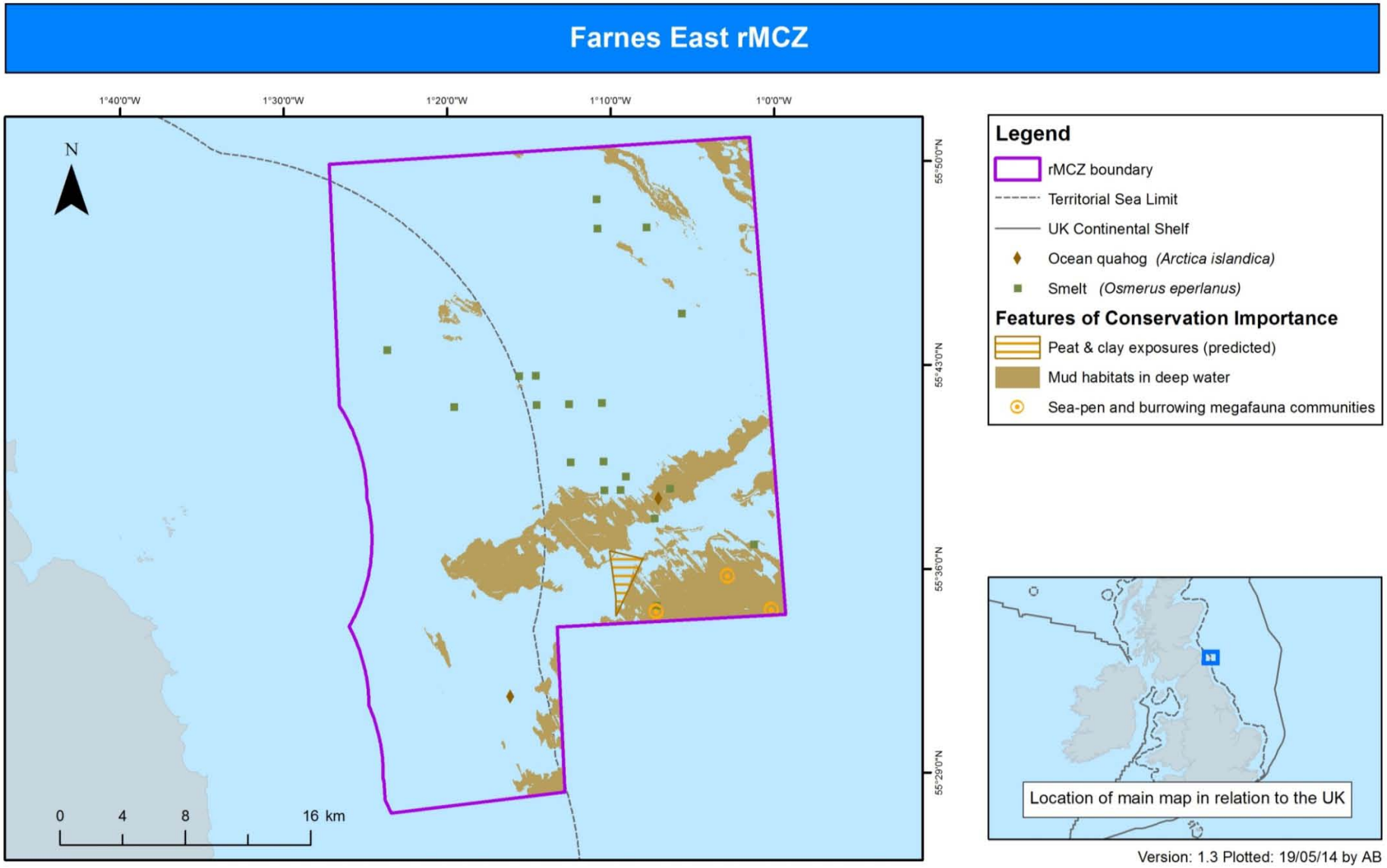
| | |
|---|---|
| | a gap in the region for **Sea-pen and burrowing megafauna communities**. There are currently no sites that afford protection to this feature within the region in the existing network. The other site option is North-East of Farnes Deep MCZ but we have no confidence in feature presence within this site.<br><br>**Adequacy** (seeking protection of at least 10% area of each EUNIS Level 3 habitat within each CP2 region):<br>- This is the only site to contribute to the percentage of **Moderate energy circalittoral rock** afforded protection within the region (currently there is 6.0% of the known area protected in the existing network) because we don't have any data to prove the presence of this feature in Compass Rose.<br>- This site will help to increase the amount of **Subtidal coarse sediment** afforded protection within the region (currently 4.0% of the known area protected in the existing network).<br>- This site will help to increase the amount of **Subtidal sand** afforded protection within the region (currently 4.3% of the known area protected in the existing network).<br>- This site will help to increase the amount of **Subtidal mud** afforded protection within the region (currently only 0.1% of the known area protected in the existing network) afforded protection within the region. There are a number of other sites that could also increase the protection of subtidal mud, although with currently only <0.1% of known habitat area afforded protection, several sites will be needed to afford protection to the recommended minimum of 10% by area.<br><br>**Connectivity** (ensuring that sites affording protection to the same habitat at EUNIS Level 2 are not further than 80km apart):<br>- It is the only option to fill a spatial gap in the region for **Circalittoral rock**. |

### 6.5.6 Features maps




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Not to be used for navigation. © JNCC 05/2014

**Figure 14: Map of broad-scale habitats in Farnes East rMCZ**




UK Territorial Sea Limit © Crown copyright and UKHO. All rights reserved. The exact limits of the UK Continental shelf are set out in orders made under section 1 (7) of the Continental Shelf Act 1964 (© Crown Copyright). Continental Shelf (Designation of Areas) Order 2013. Combining source layers from UKHO. © UKHO © JNCC.
Not to be used for navigation. © JNCC 05/2014

**Figure 15: Map of habitat and species Features of Conservation Importance in Farnes East rMCZ**

## 6.6 Fulmar rMCZ

Fulmar rMCZ was proposed by the Net Gain regional MCZ project[75] for the broad-scale habitats **Subtidal coarse sediment**, **Subtidal sand** and the species Feature of Conservation Interest (**FOCI**) **Ocean quahog (*Arctica islandica*)**. Net Gain also recommended the habitat FOCI **Subtidal sands and gravels**, however we do not provide advice on this feature here (see Section 5.1). Additionally, the regional MCZ project identified the presence of the species FOCI **Amphipod shrimp (*Gitanopsis bispinosa*)**, **Native oyster (*Ostrea edulis*)** and **Undulate ray (*Raja undulate*)** as being present within the site, but these features were not recommended for designation.

JNCC have recently acquired data that identified the presence of the broad-scale habitats **Subtidal mud**, **Subtidal mixed sediments** and the high-mobility species FOCI **Smelt (*Osmerus eperlanus*)** within the site. These features have been identified through a MB0120[32] survey in 2012 and the MB0116[31] data mining contract. The survey did not collect mulitbeam sonar across the entire site, so an updated habitat map is not available for this site at this present site.

JNCC has assessed all features that are known to be present within the site in our 2014 advice.

### 6.6.1 Assessment for feature presence and extent

JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce a new confidence assessment in feature presence and feature extent, utilising all data currently available for the site (see Section 5.1). A summary of the assessments is presented below in Table 30. The data and assessments can be viewed in full in Annex 4, Table 119 and Table 120.

**Table 30: Fulmar rMCZ evidence assessment summary**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature presence** (previous assessment scores) | **Rationale for confidence in feature presence** | **Confidence in feature extent** (previous assessment scores) | **Rationale for confidence in feature extent** |
|---|---|---|---|---|---|
| **Fulmar rMCZ** (NG 17) | **Subtidal coarse sediment** (A5.1) | **Moderate** (Moderate) | There are four BGS ground-truthing samples to demonstrate the presence of Subtidal coarse sediment in the site | **Low** (Low) | Expert judgement applied to assign Low confidence in extent because a recent survey did not record the widespread presence of the feature and JNCC analysis indicates the presence of muddy biotopes across the site. |
| | **Subtidal sand** (A5.2) | **High** (High) | There are 75 data points (from three surveys ) from over five locations which demonstrate the presence of Subtidal sand within the site. | **Low** (High) | Expert judgement applied to assign a Low confidence since recent data conflict with the original classification. JNCC analysis indicates muddy biotopes are present across the site. |
| | **Subtidal mud*** (A5.3) | **High** (*) | There are 49 ground-truthing data points (from two surveys) which demonstrate the presence of Subtidal | **Moderate** (*) | New feature identified during site verification survey; the feature recorded throughout the site and JNCC analysis indicates the widespread |

| **Site** (Code) | **Feature** (Code) | **Confidence in feature presence** (previous assessment scores) | **Rationale for confidence in feature presence** | **Confidence in feature extent** (previous assessment scores) | **Rationale for confidence in feature extent** |
|---|---|---|---|---|---|
| | | | mud in the site. | | occurrence of muddy biotopes across the site. Expert judgement applied to assign Moderate confidence due to uncertainty introduced by data indicating presence of Subtidal sand (amongst mud) across the site. |
| | **Subtidal mixed sediments** (A5.4) | **High** (*) | There are six ground-truthing samples which demonstrate the presence of Subtidal mixed sediments in the site. | **Low** (*) | Habitat identified in four locations distributed across the site. Expert judgement has been applied to assign Low confidence, particularly since biotope identifies widespread occurrence of identifying muddy biotopes across the site. |
| | **Mud habitats in deep water*** | **High** (*) | There are 48 ground-truthing data points which demonstrate the presence of Mud habitats in deep water in the site. | **Moderate** (*) | New feature found during recent site verification survey that identifies the feature spread throughout the site; biotope analysis indicated muddy biotopes across the site. Expert judgement applied to assign Moderate confidence due to uncertainty introduced by BGS records of Subtidal sand (amongst the mud) across the site. |
| | **Native oyster (*Ostrea edulis*)*** | **Not Assessed** (*) | There are six samples identified in UK Offshore Operators Association data. The Scientific Advisory Panel advised that the feature not to go forward due to its association with man-made structures in the site. JNCC agrees with this advice. | **Not Assessed** (*) | There are six samples identified in UK Offshore Operators Association data. The Scientific Advisory Panel advised that the feature should not go forward due to its association with man-made structures in the site. JNCC agrees with this advice. |
| | **Ocean quahog (*Arctica islandica*)*** | **High** (Moderate) | There are nine records found within the last six years which demonstrate the presence of Ocean quahog in the site. | **High** (Low) | Nine records within the last six years identify the species in multiple locations, which demonstrate the distribution of Ocean quahog in the site. |
| | **Amphipod shrimp (*Gitanopsis bispinosa*)*** | **Not Assessed** (*) | There is only one record identified by the Net Gain regional MCZ project demonstrating the presence of this feature. JNCC advised the project at the time not to assess this feature and this remains our advice. | **Not Assessed** (*) | There is only one record identified by the Net Gain regional MCZ project demonstrating the presence and distribution of this feature. JNCC advised the project at the time not to assess this feature and this remains our advice |
| | **Smelt** (***Osmerus eperlanus***)* | **High** (*) | There are eight records identified within the past six years to demonstrate the presence of Smelt in this site. | **High** (*) | There are eight records identified within the past six years distributed across the site to demonstrate the distribution of Smelt in the site. |
| | **Undulate ray (*Raja undulate*)*** | **Not Assessed** (*) | No supporting evidence to demonstrate the presence of Undulate ray in this site. | **Not Assessed** (*) | No confirmed presence – predicted extent only with no supporting evidence to demonstrate the distribution of Undulate ray in this site. |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

The site was surveyed as part of an MB0120[32] survey in 2012, which collected information from sediment Particle Size Analysis (**PSA**), video transects, still images and transit multibeam coverage between

stations. Additional information collated by MB0116[31] identified datasets that have provided limited additional data on species presence and distribution within the site.

The site was initially recommended for the broad-scale habitats **Subtidal coarse sediment** and **Subtidal sand**, based on both ground-truthing samples available from British Geological Survey (**BGS**) and their agreement with the habitat map derived from habitat models developed by the UKSeaMap[43] project.

Recently acquired survey data has recorded a difference between the previously available existing BGS data and the recent data gathered through MB1020[32]. The area was extensively surveyed by BGS between 1975 and 1980, who classified 61 locations out of the 68 sampled within the site boundary, as **Subtidal sand**. The MB0120[32] survey collected 66 samples in the site, 48 being classified as **Subtidal mud**, 12 of **Subtidal sand** and the remaining six as **Subtidal mixed sediments**. While the sample spacing in both datasets was between 2 and 5 km and the recent survey did not attempt to re-sample previous locations, there still appeared to be a significant contradiction between the two datasets where their respective samples fall in broadly similar locations. Whilst the samples were recorded with different equipment and processed using different techniques, these differences would not fully account for the different sample classifications. The recent samples had a lower sand content and so JNCC undertook some basic analysis of the fauna from samples that were obtained during the 2012 MB0120[32] survey; unfortunately a similar faunal dataset were not available for the BGS samples.

Our biological analysis showed the infaunal community across the site matched A5.376 *Paramphinome jeffreysii*, *Thyasira* spp. and *Amphiura filiformis* in offshore circalittoral sandy mud while the epifaunal community matched the A5.354 *Virgularia mirabilis* and *Ophiura* spp. with *Pecten maximus* on circalittoral sandy or shelly mud. JNCC concluded that the whole site most likely comprises circalittoral mud and sandy mud biotopes. Whilst the sediment PSA samples indicated both subtidal sand and subtidal mud are present, the biological communities were attributed to the broad-scale habitat **Subtidal mud**.

**Subtidal coarse sediment** was identified at three locations within the site from BGS sample points, corresponding with the mapped extent of the feature within UKSeaMap[43]. However, the recent survey failed to identify samples of this feature despite targeting its modelled extents. While this recent data does not disprove the presence of the feature within the site, it should be noted that the BGS sediment samples had been converted into their European Nature Information System (**EUNIS**) Level 3 equivalent from their original Folk classification. The recent survey of the site did try to identify additional data points to support the presence and extent of the feature. Under Technical Protocol E[40] and supplementary guidance[41] a **Moderate** confidence has been advised for the presence of **Subtidal coarse sediment**, being that there are three ground-truthing points identifying the presence of the feature. Under Technical Protocol E[40] the assessment of extent would be judged as moderate, however since the biological community analysis identified muddy communities throughout the site, and within data gathered in close proximity to the BGS samples, expert judgement has been applied and a **Low** confidence be assigned to the extent due to the uncertainty introduced by the analysis.

**Subtidal sand** has been found within the site on multiple surveys by both BGS and MB0120[32]. JNCC's 2012 advice on the presence and extent of the feature was verified by 61 seabed samples from BGS, one sample from Cefas data mining, and UKSeaMap[43] as the underlying basemap, as seen in Figure 16. The recent MB0120[32] survey also recorded the presence of the feature in 12 samples. However as discussed above, it should be noted that the mapped distribution of the recent [Subtidal sand] sample points differ significantly to the original BGS data. With multiple surveys and samples identifying the presence of **Subtidal sand**, it is clear the feature is present within the site and under Technical Protocol E[40] JNCC advise a **High** confidence in its presence. If either the BGS or recent survey datasets are considered in isolation, a **High** confidence in extent would be advised under Technical Protocol E[40]. However, taking the two datasets shows uncertainty in the spatial distribution of the **Subtidal sand** that led JNCC to use expert judgement to assign a **Low** confidence in extent due to the conflicting data. Our understanding of the distribution of the sand was further compounded by the biological analysis indicating the presence of predominantly circalittoral mud and sandy mud across the site.

**Subtidal mud** and **Mud habitats in deep water** are new features for this site that JNCC has not previously given advice. Data verifying the presence of this feature comprises a single BGS sediment point (identifying Subtidal mud only) and 48 samples collected during the recent site survey under the MB0120[32] project. JNCC advises that there is **High** confidence in the presence of the feature within this site. While there is a wide spatial distribution of samples identifying the feature across the site, with the results from the biological analysis further indicating the presence of circalittoral mud and sandy mud biotopes across the site, expert judgement has been used to advise a **Moderate** confidence in extent for these features because of the uncertainty created through the conflicting sediment types assigned to BGS samples within the site.

**Subtidal mixed sediments** is a new feature to the site that was found as part of the recent site verification survey and for which we had not provided advice previously. Six samples were found during the recent survey, predominately in the south west corner of the site coinciding with the increased sampling regime around the previously mapped extent of **Subtidal coarse sediment**. The remaining samples are located in the north of the site and are surrounded by samples assigned to **Subtidal mud**. The number of samples identified are sufficient for JNCC to have **High** confidence in the presence of **Subtidal mixed sediments**. There is some uncertainty in the spatial extent of the feature within the site due to the outputs of the biological analysis and the wider uncertainties associated with the distribution of sediment classes throughout this site (as described above). Consequently, JNCC used expert judgement to assess the data and advise Low confidence in feature extent, it should be noted that this feature was awarded a **High** confidence in feature presence due to the increased sampling effort in the south-west corner of the site, where four of the six points verifying the presence of the feature are located. Judgements on other features could also have benefited from a higher sampling effort, highlighting that our knowledge on the distribution of benthic features is generally limited by low sampling effort.

The species FOCI **Ocean quahog (*Arctica islandica*)** was recommended by the Net Gain regional MCZ project[75] as a feature within the Fulmar rMCZ. JNCC advised on the presence and extent of this feature in 2012, assigning moderate confidence in feature presence and low confidence in feature extent. Subsequent to our 2012 advice package, additional information has been sourced from MB0116[31] and MB0120[32] that increases the evidence base available for this feature. With the availability of these recent data, JNCC now advises a **High** confidence in presence and distribution be advised for this feature under Technical Protocol E[40] and the supplementary guidance[41]. The confidence scores have improved due to a greater number of records of this species within the past six years, of which more than five samples have been gathered.

The species FOCI **Native oyster (*Ostrea edulis*)** was identified as being present within the site by the Net Gain regional MCZ project, but was not recommended for designation due to the advice provided the Scientific Advisory Panel (in 2011)[81] about the link of the available records to man-made structures in the area. Based on this advice, JNCC has not provided any further advice for this feature in 2014.

The species FOCI **Amphipod shrimp (*Gitanopsis bispinosa*)** was identified as being present within the site by the Net Gain regional MCZ project, but was not recommended for designation due to advice provided at the time by JNCC, noting that from a single record it was unlikely to go forward as a designated feature. There has since been no additional data found that would result in JNCC reconsidering that advice and therefore JNCC has not provided any further advice on this feature in 2014.

High-mobility species FOCI **Smelt (*Osmerus eperlanus*)** is a new feature to the site for which JNCC has not previously offered advice. It has been identified in International Bottom Trawl Surveys on 49 occasions within the site, although the species was not a target feature during these trawls. The features meets the requirement under Technical Protocol E[40] and supplementary guidance[41] for greater than five samples that are less than six years old, allowing **High** confidence to be recommended for both presence and distribution. However, it should be noted that there is no evidence that the site is essential to the life cycle or life history of the species and as a result it is not recommended that this species is included as a designated feature of this site. JNCC will not provide any no further advice for this feature (see Section 5.3)

The high-mobility species FOCI **Undulate ray (*Raja undulata*)** was identified by the Net Gain regional MCZ project as a potential feature within the site, but was not recommended for designation due to its high mobility and the limited confidence in the data. No new data have become available to confirm the presence of Undulate ray within the site. Based on the lack of information available, JNCC advises it has **No confidence** in the presence of this species within this site and no further advice is provided in 2014.

[81] Science Advisory Panel Response to the Net Gain 3rd iteration Report (Point 2.8.3). Available at: http://tna.europarchive.org/20120312235551/http://www.netgainmcz.org/docs/SAP%20Response%20to%20Net%20Gain%203rd%20iteration%20Report%20final%20ds_website.pdf

### 6.6.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of confidence in feature condition and General Management Approach (**GMA**) proposed are presented below in Table 31 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 31: Summary of JNCC's conservation advice for features in Fulmar rMCZ**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **Fulmar rMCZ** (NG 17) | **Subtidal coarse sediment** (A5.1) | **Low** (Low) | **Recover** (Maintain) |
| | **Subtidal sand** (A5.2) | **Low** (Low) | **Maintain** (Maintain) |
| | **Subtidal mud*** (A5.3) | **Low** (*) | **Maintain** (*) |
| | **Subtidal mixed sediments** (A5.4) | **Low** (*) | **Maintain** (*) |
| | **Mud habitats in deep water*** | **Low** (*) | **Maintain** (*) |
| | **Ocean quahog (*Arctica islandica*)*** | **Low** (Low) | **Maintain** (Maintain) |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

In JNCC's 2012 advice, **Maintain** GMA's were proposed for the features **Subtidal coarse sediment**, **Subtidal sand** and species FOCI **Ocean quahog (*Arctica islandica*)**. For **Subtidal sand** and **Ocean quahog (*Arctica islandica*)** these GMA's are continued to be advised for in 2014. However following review, **Subtidal coarse sediment** is highly sensitive to pressures associated with benthic trawling that are occurring across the extent of the feature and has therefore been assigned a **Recover** GMA; refer to Table 154 in Annex 7 for further detail.

The features that have not been previously advised upon are not considered moderately or highly vulnerable to any pressures associated with ongoing activities and we therefore advise, a **Maintain** GMA for **Subtidal mud**, **Subtidal mixed sediments** and **Mud habitats in deep water**.

JNCC are not able to advise a GMA for the highly-mobile species FOCI **Smelt (*Osmerus eperlanus*)** due to lack of evidence demonstrating its fidelity to any sites within the offshore area as essential to the species life cycle or life history (see Section 5.3 for further explanation).

### 6.6.3 Confidence on feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. JNCC advises **Low** confidence in feature condition for all features as they do not satisfy further criteria to enable their confidence to be raised above low. Note that **Mud habitats in deep water** has been expertly judged as having **Low** confidence in feature condition due to the reasons explained in Section 5.3 on the feature condition methodology.

### 6.6.4 Feature risk

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7.

**Table 32: Fulmar rMCZ feature risk assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| **Fulmar rMCZ** (NG 17) | **Subtidal coarse sediment** (A5.1) | **Moderate**<br>Feature is **moderately vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal sand** (A5.2) | **Low**<br>Feature is **not moderately or highly vulnerable** to any pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Subtidal mud*** (A5.3) | **Low**<br>Feature is **not moderately or highly vulnerable** to any pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal mixed sediments** (A5.4) | **Low**<br>Feature is **not moderately or highly vulnerable** to any pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Mud habitats in deep water** | **Low**<br>Feature is **not moderately or highly vulnerable** to any pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Ocean quahog (*Arctica islandica*)** | Low<br>Feature is **not moderately or highly vulnerable** to any pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |

| | | |
|---|---|---|
| | **Native oyster (*Ostrea edulis*)** | Feature not assessed |
| | **Amphipod shrimp (*Gitanopsis bispinosa*)*** | Feature not assessed |
| | **Smelt (*Osmerus eperlanus*))** | Feature not assessed |
| | **Undulate ray (*Raja undulate*)** | Feature not assessed |

### 6.6.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site as a whole have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence and extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 33, Table 34 and Table 35 below.

***Feature assessment***

**Table 33: Fulmar rMCZ feature data sufficiency assessment**

| Site (Code) | Feature (Code) | Q1a. Confidence score of at least moderate for feature presence? | Q1b. Is Q1a based only on parent habitat being present? | Q1c. Confidence score of at least moderate for extent/ distribution? | Outcome from Question 1 assessment |
|---|---|---|---|---|---|
| **Fulmar rMCZ** (NG 17) | **Subtidal coarse sediment** (A5.1) | **Yes** (Moderate confidence) | **No** | **No** (Low confidence) | Move to Question 2 of the feature assessment (see Table 34) |
| | **Subtidal sand** (A5.2) | **Yes** (High confidence) | **No** | **No** (Low confidence) | Move to Question 2 of the feature assessment (see Table 34) |
| | **Subtidal mud*** (A5.3) | **Yes** (High confidence) | **No** | **Yes** (Moderate confidence) | **Data supports designation of feature** |
| | **Subtidal mixed sediments** (A5.4) | **Yes** (High confidence) | **No** | **No** (Low confidence) | Move to Question 2 of the feature assessment (see Table 34) |
| | **Mud habitats in deep water** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Ocean quahog (*Arctica islandica*)** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |

## Table 34: Fulmar MCZ Assessment of additional conservation/ecological considerations

| Site (Code) | Feature (Code) | Q2a: Does the feature fill a 'big gap' in the network AND have confidence score of at least moderate for feature presence? | Q2b: Is the feature at high risk of damage? | Outcome from Question 2 assessment |
|---|---|---|---|---|
| **Fulmar rMCZ** (NG 17) | **Subtidal coarse sediment** (A5.1) | **Maybe** – This site could help to increase the amount of Subtidal coarse sediment afforded protection within the region (currently 4.0% protected in the existing network). Confidence in feature presence is moderate. | **No** – This feature is currently at Moderate risk of damage and there is Moderate risk of damage in the future. | **Feature should be further considered** by Defra because it could help fill a big gap in the network. However JNCC note that the feature is not at high risk of damage and there is only a four sample points supporting the feature and confidence in feature extent is low and so there may be better options for representing this feature within the region. |
| | **Subtidal sand** (A5.2) | **Maybe** – This site could help to increase the amount of Subtidal sand afforded protection within the region (currently 4.3% protected in the existing network). Confidence in feature presence is high. | **Yes** - This feature is currently at Low risk of damage but there is High risk of damage in the future from the following activities: Infrastructure - cables & pipelines (Installation); Extraction - sand & gravel, quarrying | **Feature should be further considered** by Defra so that the designation decision is based on consideration of specific circumstances such as where the precautionary principle is applied because we have high confidence in feature presence, this feature could fill a big gap in the network and is at high risk of damage; however there may be better options for representing this feature within the region. |
| | **Subtidal mixed sediments** (A5.4) | **Maybe** – The site is one of four options which could provide a replicate in the region for Subtidal mixed sediments in 75-200m depth and one of three options to provide a replicate for Subtidal mixed sediments in a low energy environment. Confidence in feature presence is high. | **No** – This feature is currently at Moderate risk of damage and there is Moderate risk of damage in the future | **Feature should be further considered** by Defra because it could help fill a big gap in the network. However JNCC note that the feature is not at high risk of damage and there is only six sample points supporting the feature and confidence in feature extent is low and so there may be better options for representing this feature within the region. |

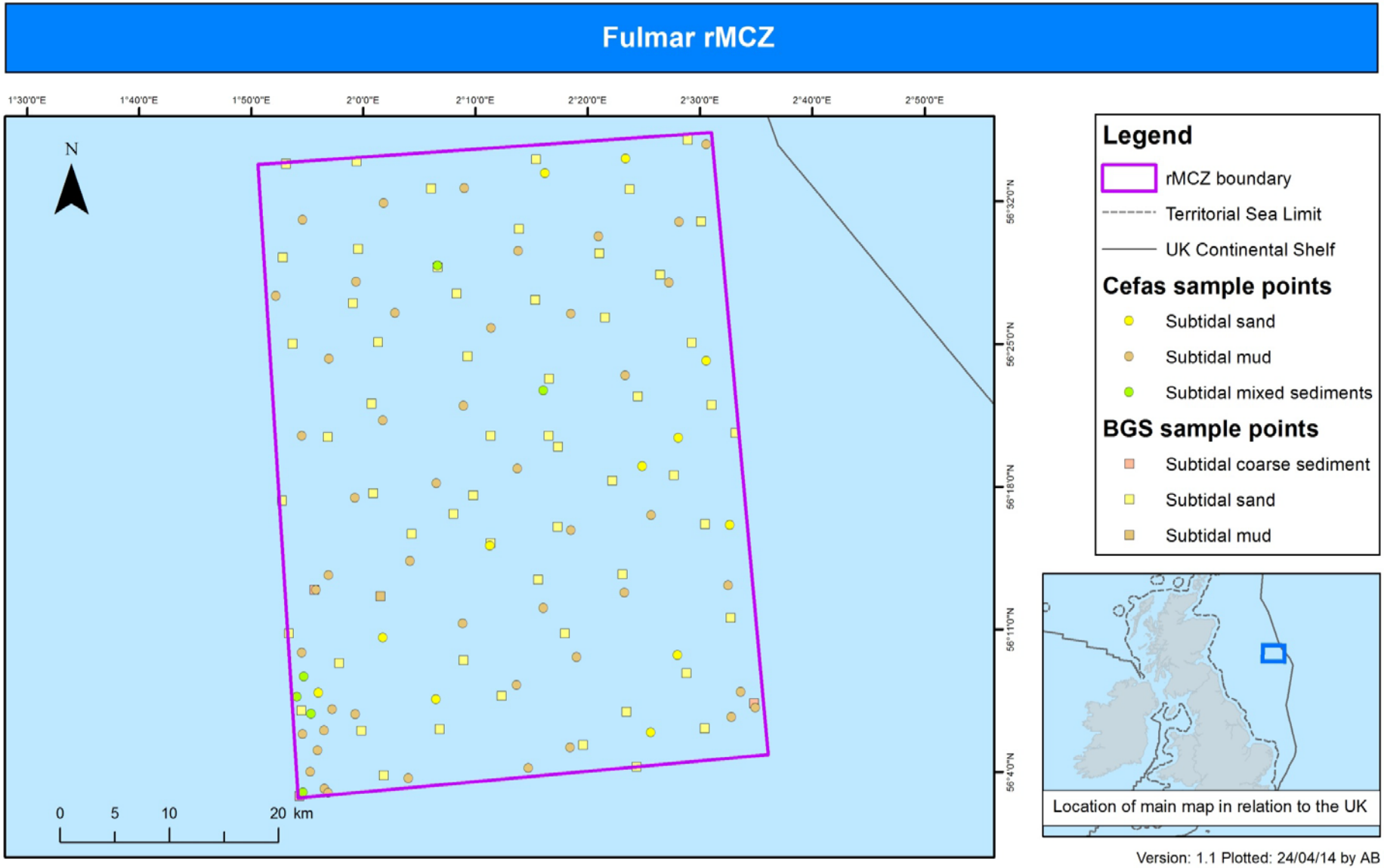
### *Site level assessment*

## Table 35: Fulmar rMCZ site level assessment

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **No** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Not possible to assess based on the data points available.** |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Does this site contribute to filling a big gap in the network?**<br>**Yes**. Fulmar rMCZ is one of three options within the Tranche Two sites to fill a gap in the region for **Mud habitats in deep water** which is also currently not afforded protection within the region in the existing network. This site would also fill a spatial gap for **Subtidal sediment** within the region. The site could provide replicates for **Subtidal mixed sediments in 75-200m depth** and **Subtidal mixed sediments in a low energy environment** although for Subtidal mixed sediments there may be better options for representing this feature within the region. It would also contribute to increasing the percentage of **Subtidal sand** (currently 4.3% of the known area protected in the region in the existing network) and **Subtidal mud** afforded protection in the region (currently only 0.1% of the known area protected in the region in the existing network). There are a number of other sites that could also increase the protection of subtidal mud within the network, although with currently only <0.1% of the known area afforded protection, several sites will be needed to afford protection to the recommended |

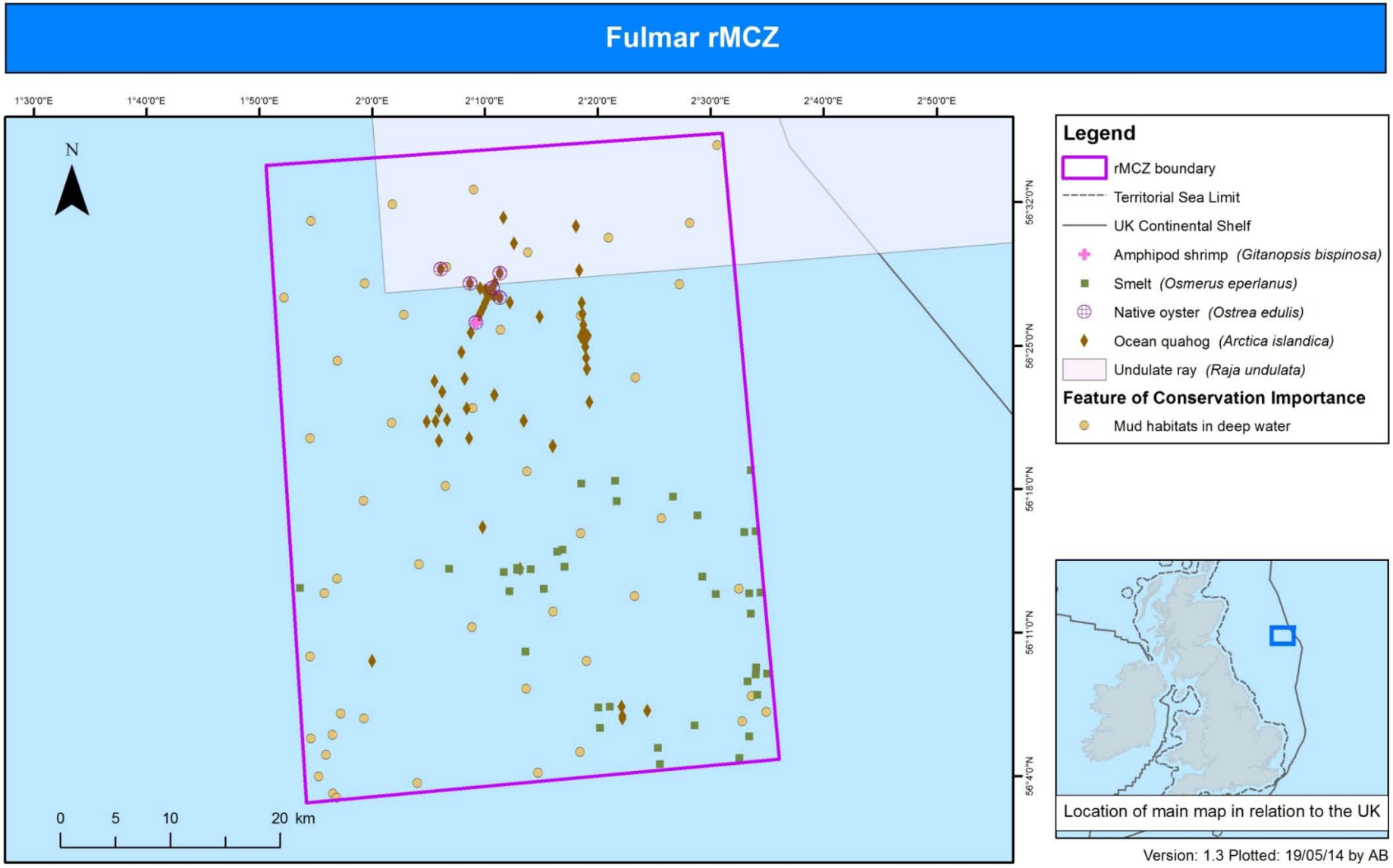
| | |
|---|---|
| | minimum of 10% by area. It would also contribute to increasing the percentage of **Subtidal coarse sediment** afforded protection within the region, however there may be better options for representing this feature within the region.<br><br>**Representativity** (seeking two examples of each EUNIS Level 3 habitat within each energy category (low, moderate and high) and depth zone (0-10m, 10-75m, 75-200m, 200m+) and two examples of each FOCI within each CP2 region):<br>- The site is one of four options within the Tranche Two sites to provide a replicate in the region for **Subtidal mixed sediments in 75-200m depth**. However there is only six sample points supporting the feature and confidence in feature extent is low and so there may be better options for representing this feature within other sites in the region. There is currently only one site that affords protection to this feature in this depth/energy category within the region in the existing network, which is Moray Firth SAC, The other site options would be Compass Rose rMCZ, Farnes East rMCZ and North East of Farnes Deep MCZ.<br>- The site is one of three options within the Tranche Two sites to provide a replicate in the region for **Subtidal mixed sediments in a low energy environment**. However there is only six sample points supporting the feature and confidence in feature extent is low and so there may be better options for increasing the amount of this feature afforded protection within other sites in the region. There is currently only one site that affords protection to this feature in this depth/energy category within the region in the existing network, which is Moray Firth SAC, The other site options would be Farnes East rMCZ and North East of Farnes Deep MCZ.<br>- The site is one of three options within the Tranche Two sites to fill a gap in the region for **Mud habitats in deep water**. There are currently no sites that afford protection to this feature within the region in the existing network. The other site options are Farnes East rMCZ and North-East of Farnes Deep MCZ.<br><br>**Adequacy** (seeking protection of at least 10% area of each EUNIS Level 3 habitat within each CP2 region):<br>- This site will help to increase the amount of **Subtidal coarse sediment** afforded protection within the region (currently 4.0% of the known area protected in the region in the existing network). However there is only six sample points supporting the feature and confidence in feature extent is low and so there may be better options for increasing the amount of this feature afforded protection within other sites in the region.<br>- This site will help to increase the amount of **Subtidal sand** afforded protection within the region (currently 4.3% of the known area protected in the region in the existing network).<br>- This site will help to increase the amount of **Subtidal mud** afforded protection within the region (currently only 0.1% of the known area protected in the region in the existing network) afforded protection within the region. There are a number of other sites that could also increase the protection of subtidal mud within the network, although with currently only <0.1% afforded protection, several sites will be needed to afford protection to the recommended minimum of 10% by area.<br><br>**Connectivity** (ensuring that sites affording protection to the same habitat at EUNIS Level 2 are not further than 80km apart):<br>- The site would fill a spatial gap in the region for **Subtidal sediment** within the region. |

### 6.6.6 Feature Maps




UK Territorial Sea Limit © Crown copyright and UKHO. All rights reserved. The exact limits of the UK Continental shelf are set out in orders made under section 1(7) of the Continental Shelf Act 1964 (© Crown Copyright). Continental Shelf (Designation of Areas) Order 2013. Combining source layers from UKHO. © UKHO © JNCC.
BGS sample points: Licence JNCC IPR/139-2DY, British Geological Survey ©NERC. Not to be used for navigation. © JNCC 04/2014

**Figure 16: Map of broad-scale habitats in Fulmar rMCZ**




UK Territorial Sea Limit © Crown copyright and UKHO. All rights reserved. The exact limits of the UK Continental shelf are set out in orders made under section 1 (7) of the Continental Shelf Act 1964 (© Crown Copyright). Continental Shelf (Designation of Areas) Order 2013. Combining source layers from UKHO. © UKHO © JNCC.
Undulate ray - MB102 task 2B Highly mobile species Aug 2010 ABP mer. Not to be used for navigation. © JNCC 05/2014

**Figure 17: Map of habitat and species Features of Conservation Importance in Fulmar rMCZ**

## 6.7 Greater Haig Fras rMCZ

**Greater Haig Fras** rMCZ was recommended by the Finding Sanctuary regional MCZ project[72] for the broad-scale habitats **Moderate energy circalittoral rock**, **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mud**, and **Subtidal mixed sediments** as well as the Geological feature **Haig Fras Rock Complex**. The habitat Feature of Conservation Interest (**FOCI**) **Subtidal sands and gravels** was identified as present within the site but not recommended by the Regional Project.

JNCC is also providing advice on the habitat FOCI **Mud habitats in deep water** and species FOCI **Fan mussel (*Atrina fragilis*)** which were not previously assessed.

### 6.7.1 Assessment of feature presence and feature extent

The 2014 assessments were conducted on the habitat map derived from the EUSeaMap[44] model, the British Geological Survey (**BGS**) DigSBS250 sediment layer[76] and MB0102[74] habitat maps from models, as well as available ground-truthing data from BGS, MB0102[74], Haig Fras Special Area of Conservation (**SAC**) Selection Assessment Document[82] data, and a recent MB0120[32] survey that provided acoustic, video/still imagery and benthic grab sample data. JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce a new confidence assessment in feature presence and feature extent, utilising all available data for the site (see Section 5.1). A summary of the assessments is presented below in Table 36. The data and assessments can be viewed in full in Annex 4, Table 121 and Table 122.

**Table 36: Greater Haig Fras rMCZ Evidence Assessment Summary**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature presence** (previous assessment scores) | **Rationale for confidence in feature presence** | **Confidence in feature extent** (previous assessment scores) | **Rationale for confidence in feature extent** |
|---|---|---|---|---|---|
| **Greater Haig Fras rMCZ** (FS 05) | **Moderate energy circalittoral rock** (A4.2) | **Not Assessed** (High) | Not assessed as this feature is protected through the Haig Fras cSAC/SCI and as a result, should not be a feature within the MCZ. | **Not Assessed** (Low) | Not assessed as this feature is protected through the Haig Fras cSAC/SCI and as a result, should not be a feature within the MCZ. |
| | **Subtidal coarse sediment** (A5.1) | **High** (Moderate) | Interpreted ground-truthing data (from 21 sediment grab samples) demonstrates the presence of Subtidal coarse sediment in the site. | **Moderate** (Low) | High number of data points across the site, and general but not a complete match with the BGS DigSBS250 substrate map layer demonstrate the extent of Subtidal coarse sediment in the site. |
| | **Subtidal sand** (A5.2) | **High** (Moderate) | Interpreted ground-truthing data (from 16 sediment grab samples) demonstrate the presence of Subtidal sand in | **Moderate** (Low) | High number of data points across the site, and general but not a complete match with the BGS DigSBS250 substrate map layer demonstrate the |

[82] Haig Fras SAC Selection Assessment Document. Available at: http://jncc.defra.gov.uk/pdf/HaigFras_SelectionAssessment_4.0.pdf

| **Site** (Code) | **Feature** (Code) | **Confidence in feature presence** (previous assessment scores) | **Rationale for confidence in feature presence** | **Confidence in feature extent** (previous assessment scores) | **Rationale for confidence in feature extent** |
|---|---|---|---|---|---|
| | | | the site. | | extent of Subtidal sand in the site. |
| | **Subtidal mud** (A5.3) | **High** (Moderate) | Presence of Subtidal mud is supported by interpreted ground-truthing data (from 47 sediment grab samples). | **High** (Low) | High number of data points across the site, and good match of points to BGS DigSBS250 substrate map layer demonstrate the extent of Subtidal mud in the site. |
| | **Subtidal mixed sediments** (A5.4) | **High** (Moderate) | Interpreted ground-truthing data (from 15 sediment grab samples) demonstrate the presence of Subtidal mixed sediments in the site. | **Moderate** (Low) | High number of data points across the site, and general but not complete match with the BGS DigSBS250 substrate map layer demonstrate the extent of Subtidal mixed sediments in the site. |
| | **Mud habitats in deep water*** | **High** (*) | Interpreted ground-truthing data (47 sediment grab samples) demonstrate the presence of Subtidal mud (parent feature) in the site. | **High** (*) | High number of data points across the site, and good accordance of parent feature points to BGS DigSBS250 substrate map layer demonstrate the extent of Mud habitats in deep water in the site. |
| | **Fan mussel (*Atrina fragilis*)*** | **Moderate** (*) | Multiple records (three stations - two live and one dead), from 2012 demonstrate the presence of Fan mussel in the site. There are an insufficient number of samples to support moderate confidence but expert judgement was applied to assign moderate confidence | **Low** (*) | No habitat map available and only two live samples (one dead sample) to demonstrate the distribution of Fan mussel in the site. |
| | **Haig Fras Rock Complex** | **High** (High) | Full multibeam acoustics and video/still/grab ground-truthing demonstrates the presence of the Haig Fras Rock Complex in the site. | **High** (High) | Full multibeam acoustics to demonstrate the extent of the Haig Fras rock Complex in the site. |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

Following a review of the previous assessment of confidence in the presence and extent of the feature **Moderate energy circalittoral rock**, JNCC have further evidence in the form of complete acoustic coverage along with a high number of ground-truthing points to have **High** confidence in the presence and extent of this feature within the site. However, this feature is protected across its known extent within the site by the Haig Fras candidate SAC (**cSAC**) / Site of Community Importance (**SCI**) designated under the Habitats Directive and so it is **not proposed** as a feature of this rMCZ. Very small patches (~50 m – 100 m length) of rocky outcrop are known to occur outside of the cSAC/SCI boundary within the wider MCZ site boundary, but are not being considered as an MCZ feature due to their small size and our low confidence in their extent beyond the boundary of the cSAC/SCI.

JNCC used the BGS DigSBS250[76] substrate layer instead of the map from the UKSeaMap habitat model used in the original regional project assessment. The BGS rock layer, presented in MB0103[83] and used by the UKSeaMap[43] model, has been shown to be incorrect for this site following provision of new data for the location of rock designated within Haig Fras cSAC/SCI. Sediment classes within the BGS DigSBS250[76] layer were grouped to broad-scale habitat categories using the BGS modified Folk sediment trigon[60].

Recent sediment data are now available for the Greater Haig Fras rMCZ following an MB0120[32] survey in 2012 that collected grab samples and opportunistic multibeam (in the northern area of the site, above the Haig Fras cSAC/SCI). Consequently, our confidence in the presence and extent of **Subtidal coarse sediment** has been increased from moderate to **High** for presence and from low to **Moderate** for extent due to a high number of ground-truthing data across the site (eight Cefas, 13 BGS sample points), with some match between the sample results and the underlying habitat polygons presented in the BGS DigSBS250[76] substrate layer. While this match was generally good, there were some stations from recent survey whose PSA results contradicted the underlying BGS map. Often the habitat, as identified by the PSA data, aligned with its closest PSA sample however it was felt inappropriate to give High confidence in extent due to these inconsistencies and the apparent patchy nature of the substrate itself. JNCC note there is generally greater match between PSA results to underlying polygons between Cefas and BGS data in the north east of site, showing a graded shift between a mud dominant region in the west to a sand/coarse sediment region in the east.

JNCC's confidence for the features **Subtidal sand** and **Subtidal mixed sediments** is now **High** for presence and **Moderate** for extent, having been Moderate and Low respectively in 2012. This increase is due to a large number of ground-truthing data spread across the site (nine Cefas, seven BGS; and six Cefas, nine BGS sample stations respectively), and a general but not complete match between the PSA results and the underlying BGS habitat polygons. These small inconsistencies are most likely due to an apparent patchy distribution of these two habitats.

JNCC's confidence for the feature **Subtidal mud** was Moderate for presence and Low for extent in our 2012 advice, however it is now **High** for presence and **High** for extent due to a large number of ground-truthing data (33 Cefas, 14 BGS sample stations) across the site, which has a close match with the underlying habitat polygons from BGS. The extent of the habitat is well defined within the site.

While **Moderate energy circalittoral rock** is not recommended as a feature for the MCZ since it is part of the Haig Fras cSAC/SCI, JNCC is providing advice on the geological feature the Haig Fras Rock Complex to ensure the feature's geology is adequately offered protection. The confidence for the geological feature

[83] MB103. Available at: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16370http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16370

Haig Fras Rock Complex is **High** for presence and **High** for extent due to the full coverage of acoustic data for this feature, together with visual verification from video and still image data.

JNCC's confidence for the habitat FOCI **Mud habitats in deep water** (not previously assessed) is **High** for presence and **High** for extent based on the sampling conducted to verify the parent feature of Subtidal mud. The classification of **Mud habitats in deep water** is supported by the accompanying PSA results and evidence from video/still imagery for the parent feature Subtidal mud, together the evidence from the EUSeaMap[44] energy layer (derived from wave and current data) that the mud exists within a relatively stable, low energy environment.

JNCC's confidence for the species FOCI **Fan mussel (*Atrina fragilis*)** (not previously assessed) is **Moderate** for presence and **Low** for extent based on video and still imagery and analysis collected by Cefas during the MB0120[32] survey in 2012. A small number of live and dead mussels were observed in video footage from one site survey tow, as well from still imagery collected in two separate camera tows from different stations within the site. While we can therefore be confident that the mussel is present within the site at three locations, only two examples of live mussels were observed (at separate stations). Due to their often slightly cryptic nature (i.e. buried in sediment) and widely dispersed distribution (often solitary or in small patches) it is difficult to assess presence with any greater clarity, and similarly extremely difficult to assess extent with so few observations. It is worth noting the national rarity of sightings of this species with National Biodiversity Network[84] and Ocean Biogeographic Information Systems[85] records showing less than 10 sightings in whole south-west region from all records, mostly accidental collections from trawling. While there are an insufficient number of samples to support moderate confidence in feature presence, expert judgement was used to raise the confidence from low to **Moderate**, given that there is more than one separate record collected, the species' cryptic, widely dispersed and rare nature, and that the data are recent with indication of further presence through dead shells. Given the limited number of samples, confidence in feature extent was assigned as **Low**.

Overall, the available data do not indicate the habitat FOCI **Sea-pen and burrowing megafauna communities** is present within the broad scale habitat 'Subtidal mud'. There is no evidence showing the species that form 'gallery burrow systems' in the seabed imagery or the infaunal data analysed by Cefas, and the PSA results indicate the substratum is primarily 'sandy mud' as opposed to 'fine circalittoral mud' which is more commonly associated with the habitat[49].However, new data are now available for Greater Haig Fras rMCZ for 2012-13 from annual Marine Institute *Nephrops* surveys. These data were received too late to be considered within this present advice package but could be considered during JNCC's Tranche Two post-consultation advice if this site be included for public consultation. Following an initial review of these recently available taxon data from Marine Institute, JNCC noted the likelihood that **Sea-pen and**

[84] National Biodiversity Network. Available at: http://www.nbn.org.uk/
[85] Ocean Biodiversity Information Systems. Available at: http://www.iobis.org/

**burrowing megafauna communities** are present within the known extent of the broad-scale habitat Subtidal mud.

### 6.7.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of confidence in feature condition and the General Management Approach (**GMA**) proposed are presented below in Table 37 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 37: Summary of JNCC's conservation advice for features in Greater Haig Fras rMCZ**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **Greater Haig Fras rMCZ** (FS 05) | **Moderate energy circalittoral rock** (A4.2) | **Not Assessed** (Low) | **Not Assessed** (Recover) |
| | **Subtidal coarse sediment** (A5.1) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal sand** (A5.2) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal mud** (A5.3) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal mixed sediments** (A5.4) | **Low** (Low) | **Recover** (Recover) |
| | **Mud habitats in deep water*** | **Low** (*) | **Recover** (*) |
| | **Fan mussel *(Atrina fragilis)**** | **Low** (*) | **Recover** (*) |
| | **Haig Fras Rock Complex** | **High** (High) | **Maintain** (Maintain) |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

During the previous assessment by the Finding Sanctuary regional MCZ project[72], **Recover** GMAs were advised for the features **Moderate energy circalittoral rock, Subtidal coarse sediment**, **Subtidal sand, Subtidal mud** and **Subtidal mixed sediment**. A **Maintain** GMA was previously proposed by JNCC for the geological feature **Haig Fras Rock Complex;** our view remains unchanged for this geological feature following Technical Protocol F[63].

In 2014, JNCC still advises **Recover** GMAs for **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mud**, and **Subtidal mixed sediments** because they are still considered to be highly to moderately vulnerable to the pressures associated with fishing occurring within the site over their recorded extent. JNCC advises **Recover** GMAs for recently added features of **Mud habitats in deep water** and **Fan mussel** (***Atrina***

***fragilis***), because they too are considered to be highly to moderately vulnerable to pressures associated with fishing occurring within the site over their recorded extent; see Table 155 in Annex 7 for further details on the vulnerability assessments for these features.

### 6.7.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. JNCC advises **Low** confidence in the condition of **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mud**, **Subtidal mixed sediments** and species FOCI **Fan mussel (*Atrina fragilis*)** because none of the features were highly sensitive (with moderate or high confidence) to any pressures to which they were highly or moderately vulnerable. **Mud habitats in deep water** has been expertly judged as having **Low** confidence in feature condition due to the reasons explained in Section 5.3 on the feature condition methodology.

The geological feature **Haig Fras Rock Complex** was assigned **High** confidence in condition due to the feature's known extent and low vulnerability to known pressures. The full coverage multibeam data confirm the feature's extent, along with the highly unlikely chance of the rock feature integrity being damaged by fishing gear allow JNCC to assign **High** confidence in condition.

### 6.7.4 Feature risk

***Feature risk assessment***

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7

**Table 38: Greater Haig Fras MCZ Feature Risk Assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| **Greater Haig Fras rMCZ** (FS 05) | **Moderate energy circalittoral rock** (A4.2) | Feature not assessed | |
| | **Subtidal coarse sediment** (A5.1) | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal sand** (A5.2) | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |

| | | | |
|---|---|---|---|
| | **Subtidal mud** (A5.3) | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal mixed sediments** (A5.4) | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Mud habitats in deep water** | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Fan mussel *(Atrina fragilis)*** | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Haig Fras Rock Complex** (G9) | Feature not assessed because it is a geological feature | |

### 6.7.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site as a whole have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence and extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 39, Table 40 and Table 41 below.

***Feature assessment***

**Table 39: Greater Haig Fras MCZ Feature Data Sufficiency Assessment**

| **Site** (Code) | **Feature** (Code) | **Q1a. Confidence score of at least moderate for feature presence?** | **Q1b. Is 1a based only on parent habitat being present?** | **Q1c. Confidence score of at least moderate for extent/ distribution?** | **Outcome from Question 1 assessment** |
|---|---|---|---|---|---|
| **Greater Haig Fras rMCZ** (FS 05) | **Subtidal coarse sediment** (A5.1) | **Yes**<br>(High confidence) | **No** | **Yes**<br>(Moderate confidence) | **Data supports designation of feature** |
| | **Subtidal sand** (A5.2) | **Yes**<br>(High confidence) | **No** | **Yes**<br>(Moderate confidence) | **Data supports designation of feature** |
| | **Subtidal mud** (A5.3) | **Yes**<br>(High confidence) | **No** | **Yes**<br>(High confidence) | **Data supports designation of feature** |

| | | | | | |
|---|---|---|---|---|---|
| | **Subtidal mixed sediments** (A5.4) | **Yes** (High confidence) | **No** | **Yes** (Moderate confidence) | **Data supports designation of feature** |
| | **Mud habitats in deep water** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Fan mussel *(Atrina fragilis)*** | **Yes** (Moderate confidence) | **No** | **No** (Low confidence) | Move to Question 2 of the feature assessment (see Table 40). |
| | **Haig Fras Rock Complex** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |

## Table 40: Greater Haig Fras MCZ Assessment of additional conservation/ecological considerations

| **Site** (Code) | **Feature** (Code) | **Q2a: Does the feature fill a 'big gap' in the network AND have confidence score of at least moderate for feature presence?** | **Q2b: Is the feature at high risk of damage?** | **Outcome from Question 2 assessment** |
|---|---|---|---|---|
| **Greater Haig Fras rMCZ** (FS 05) | **Fan mussel *(Atrina fragilis)*** | **Yes** – This site is one of two options within the offshore Tranche Two sites to fill a gap in the region for **Fan mussel (*Atrina fragilis*)**. There are currently no sites that afford protection to this feature within the region in the existing network. Confidence in feature presence is Moderate. The other option for this feature include South-West Deeps (West) MCZ, however our confidence in the presence of the feature within that alternative site is low and so this provides the best option to represent this feature within the region. | **N/A** | **Conservation benefits support priority feature designation****. Note that this feature may not meet the viability guidelines as outlined in the ENG[26], however there is limited knowledge about what is meant by viability with respect to Fan mussel (*Atrina fragilis*), and as such JNCC consider the conservation benefits support priority feature designation. |

****** Subject to considerations listed in the method in Section 5.5

### *Site level assessment*

## Table 41: Greater Haig Fras MCZ Site level assessment

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **No** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Greater than 75%** |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Does this site contribute to filling a big gap in the network?**<br>**Yes**. This site is the best option out of two options to be a replicate for **Fan mussel (*Atrina fragilis*)** which is currently not protected within the region in the existing network. The site can also contribute to fill gaps in the representativity for two other features: **Subtidal mud in a low energy environment** and **Mud habitats in deep water** which is also currently not afforded protection within the region in the existing network. This site could also contribute to increasing the percentage of **Subtidal coarse sediment, Subtidal sand** and **Subtidal mud** afforded protection within the region. There are several other sites that could also increase the protection of subtidal mud within the network although with currently only 2.2% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% by area. Although there are other options that could to contribute towards many of the gaps, it does increase the percentage cover of a number of habitats within the region and provides a needed and the best replicate for **Fan mussel (*Atrina fragilis*).** |

| | |
|---|---|
| | **Representativity** (seeking two examples of each EUNIS Level 3 habitat within each energy category (low, moderate and high) and depth zone (0-10m, 10-75m, 75-200m, 200m+) and two examples of each FOCI within each CP2 region):<br>- This site is one of seven options within the Tranche Two sites to provide a replicate in the region for **Subtidal mud in a low energy environment**. There is currently one site that affords protection to this feature in this depth/energy category within the region in the existing network which is the Fal and Helford SAC. The other options would be Celtic Deep rMCZ, East of Celtic Deep rMCZ, East of Haig Fras MCZ, North-West of Jones Bank rMCZ, South of Celtic Deep rMCZ and South-West Deeps (West) MCZ (although for South of Celtic Deep rMCZ we have recommended that the data does not justify designation).<br>- The site is one of six options within the Tranche Two sites to fill a gap in the region for **Mud habitats in deep water**. There are currently no sites that afford protection to this feature within the region in the existing network. The other options for this feature include Celtic Deep rMCZ, East of Celtic Deep rMCZ, East of Haig Fras MCZ, North-West of Jones Bank rMCZ, South of Celtic Deep rMCZ.<br>- This site is one of two options within the offshore Tranche Two sites to fill a gap in the region for **Fan mussel (*Atrina fragilis*)**. There are currently no sites that afford protection to this feature within the region in the existing network. The other option for this feature include South-West Deeps (West) MCZ, however our confidence in the presence of the feature within this alternative site is low.<br><br>**Adequacy** (seeking protection of at least 10% by area of each EUNIS Level 3 habitat within each CP2 region):<br>- This site will help to increase the amount of **Subtidal coarse sediment** afforded protection within the region (currently 3.2% of the known area protected in the existing network).<br>- This site will help to increase the amount of **Subtidal sand** afforded protection within the region (currently 7.3% of the known area protected in the existing network).<br>- This site will help to increase the amount of **Subtidal mud** afforded protection within the region (currently 2.2% of the known area protected in the existing network). There are several other sites that could also increase the protection of subtidal mud within the network although with currently only 2.2% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% by area. |

### 6.7.6 Feature maps

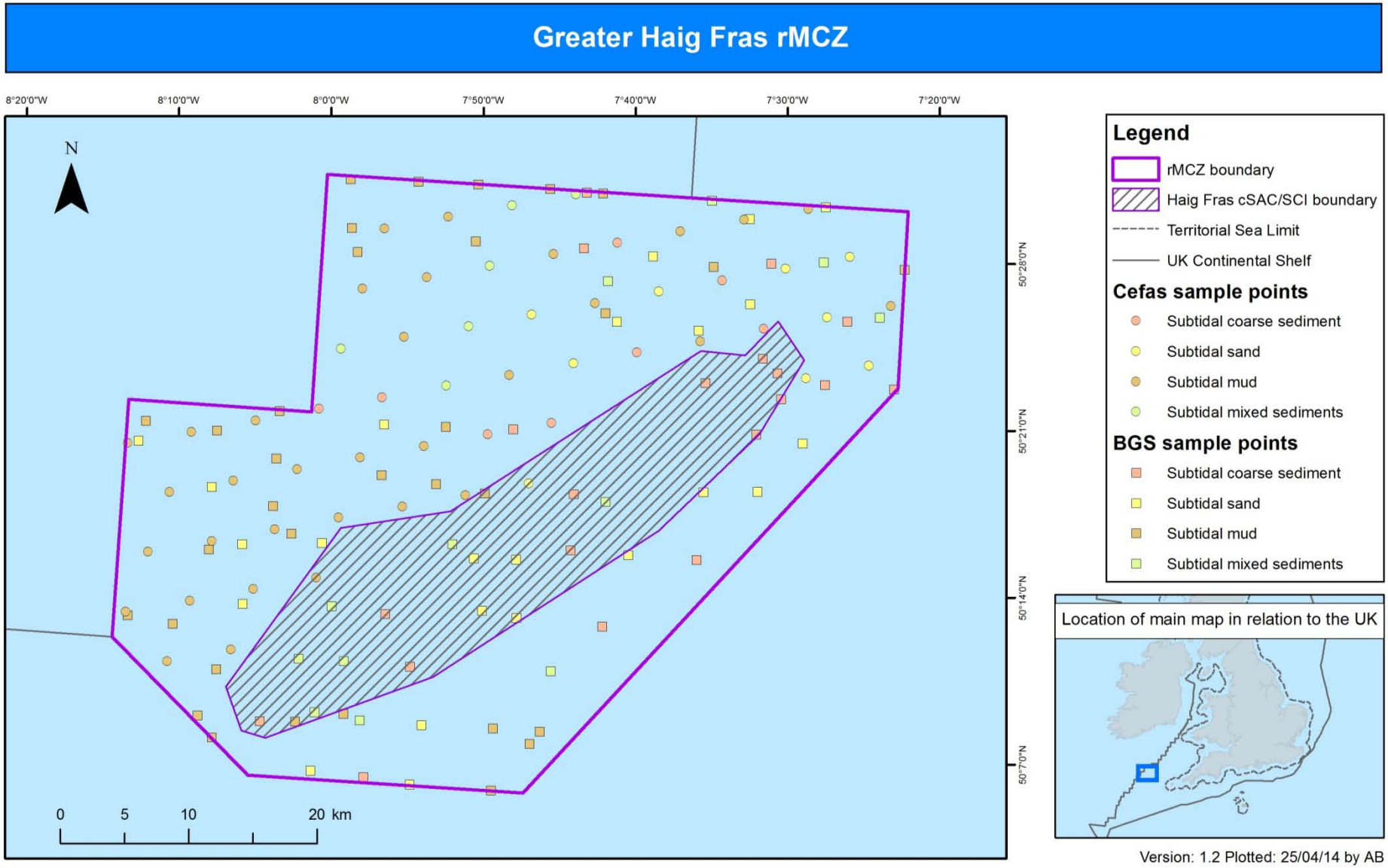
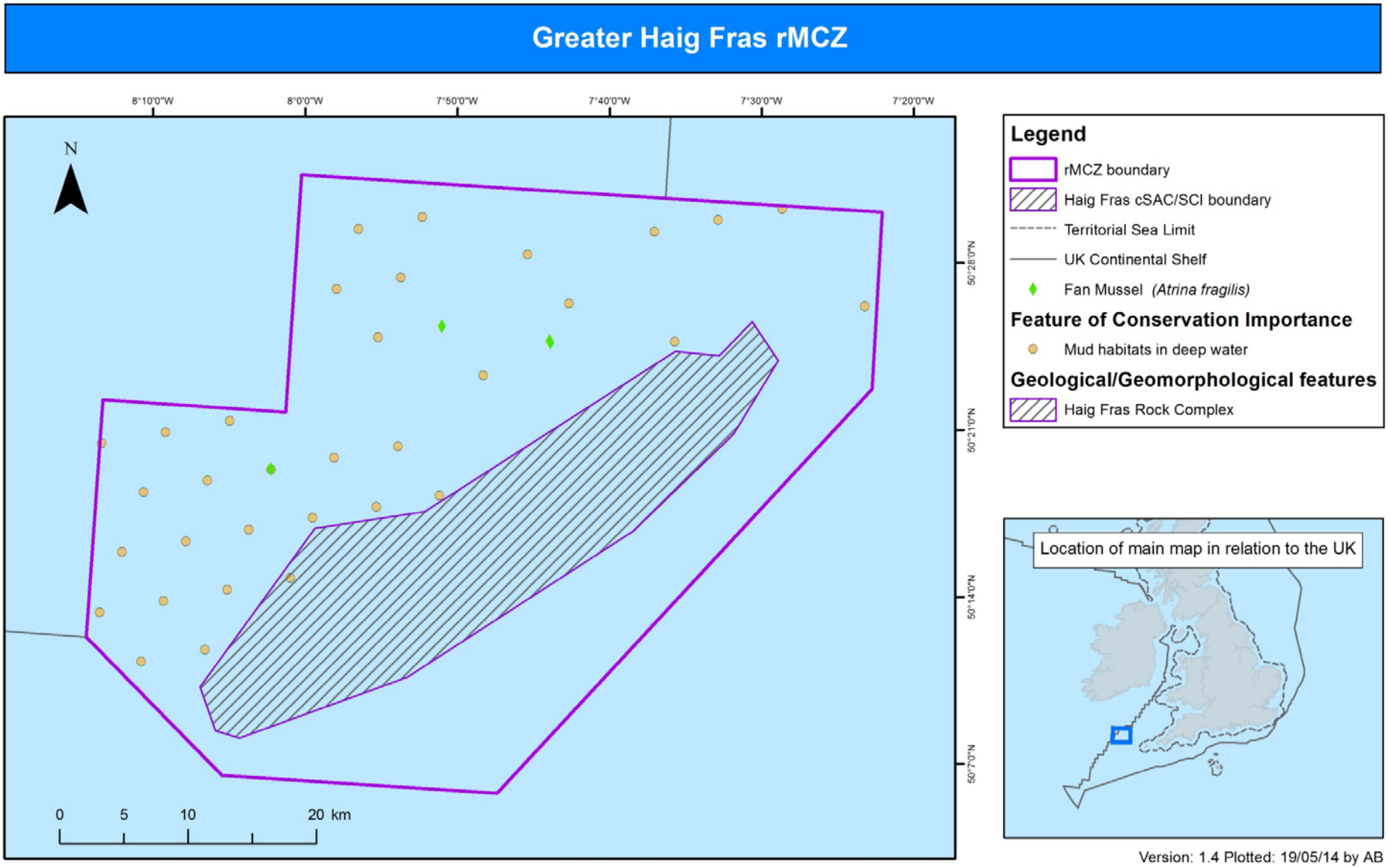



**Figure 18: Map of broad-scale habitats in Greater Haig Fras rMCZ**




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BGS sample points: Licence JNCC IPR/139-2DY, British Geological Survey ©NERC. Not to be used for navigation. © JNCC 05/2014

**Figure 19: Map of habitat Features of Conservation Importance and geological feature within Greater Haig Fras rMCZ**

## 6.8 Mid St Georges Channel rMCZ

Mid St Georges Channel MCZ was recommended by the Irish Sea Conservation Zones regional MCZ project[86] for the Broad-scale habitats **Moderate energy circalittoral rock**, **Subtidal coarse sediment, Subtidal sand** and **Subtidal mixed sediments**. The habitat Feature of Conservation Interest (**FOCI**) **Subtidal sands and gravels** were also recommended by the regional MCZ project, but we do not offer advice on that habitat here (see Section 5.1).

The broad-scale habitat **Subtidal biogenic reefs** was not originally recommended by the regional MCZ project but has been identified as a potential new feature for the site.

Mid St Georges Channel rMCZ was surveyed as part of MB0120[32] in 2013 to provide additional ground-truthing data to verify the presence/extent of the recommended features. However an updated habitat map for this site was not available in time for our 2014 advice.

### 6.8.1 Assessment of feature presence and extent

JNCC's 2014 assessments were conducted on the maps derived from habitat models from EUSeaMap[44], MB0102[74], and MB0120[32] together with sample point data from the British Geological Survey (**BGS**), Marine Recorder and the MB0102[74] contract. JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce new confidence assessment in feature presence and feature extent, utilising all available data for the site (see Section 5.1). A summary of the assessments is presented below in Table 42. The data and assessments can be viewed in full in Annex 4, Table 123 and Table 124.

**Table 42: Mid St Georges Channel rMCZ Evidence Assessment Summary**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature presence** (previous assessment scores) | **Rationale for confidence in feature presence** | **Confidence in feature extent** (previous assessment scores) | **Rationale for confidence in feature extent** |
|---|---|---|---|---|---|
| **Mid St Georges Channel rMCZ** (ISCZ 04) | **Moderate energy circalittoral rock** (A4.2) | **High** (Low) | Ground-truth sample data from five video tows that demonstrate the presence of Moderate energy circalittoral rock in the site. | **Moderate** (Low) | There is limited knowledge about the feature across the site (except in the south east) to demonstrate the extent of Moderate energy circalittoral rock. |
| | **Subtidal coarse sediment** | **High** (Moderate) | There are 49 sediment sample points throughout the site that demonstrate the | **High** (Low) | There are 49 sediment sample points well distributed throughout the site that demonstrate the extent of Subtidal |

[86] Irish Seas Conservation Zones regional MCZ project website. Available from: http://webarchive.nationalarchives.gov.uk/20120502155448/http://www.irishseaconservation.org.uk

| **Site** (Code) | **Feature** (Code) | **Confidence in feature presence** (previous assessment scores) | **Rationale for confidence in feature presence** | **Confidence in feature extent** (previous assessment scores) | **Rationale for confidence in feature extent** |
|---|---|---|---|---|---|
| | (A5.1) | | presence of Subtidal coarse sediment in the site. | | coarse sediment. |
| | **Subtidal sand** (A5.2) | **High** (Low) | There are 13 sediment sample points that demonstrate the presence of Subtidal sand in the site. | **High** (Low) | Many ground-truth stations well distributed across the site to demonstrate the extent of the Subtidal sand feature. |
| | **Subtidal mixed sediments** (A5.4) | **High** (Low) | There are 57 sediment sample points that demonstrate the presence of Subtidal mixed sediments in the site. | **High** (Low) | There are 57 sediment sample points well distributed throughout the site that demonstrate the extent of Subtidal mixed sediments. |
| | **Subtidal biogenic reefs*** (A5.6) | **Low** (*) | There are only two ground-truthing samples from one video tow to demonstrate the presence of Subtidal biogenic reefs in the site. | **Low** (*) | Only two ground-truthing samples from one video tow are available to show the extent of Subtidal biogenic reefs in the site. |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

JNCC have **High** confidence in the presence of **Moderate energy circalittoral rock**; confirmed by 44 photographic images from five video tows in a recent MB0120[32] survey. JNCC applied expert judgement to assess the feature and judged it was sufficiently represented in the video tows to constitute clear evidence to justify that a **High** confidence score in presence was appropriate for the feature. We have **Moderate** confidence in the extent of this feature, the majority of the ground-truthing data indicates it primarily occurs in the south-east of the site with limited evidence of it occurring elsewhere. We have **High** confidence in the presence and **High** confidence in the extent of features **Subtidal coarse sediment**, **Subtidal sand** and **Subtidal mixed sediments** as the recent MB0120[32] survey sampled extensively across the site. Our level of confidence in the presence and extent of these three features is justified by the multiple records of ground-truthing data from the 2012 MB0120[32] survey, together with BGS and Marine Recorder ground-truthing data throughout the site. Whilst a new habitat map is not available for this 2014 advice, the level of survey effort and the distribution of sampling stations within the site are sufficient to provide **High** confidence in the extent of **Subtidal coarse sediment, Subtidal sand** and **Subtidal mixed sediments.**

JNCC used expert judgement to assess confidence in the presence of **Subtidal biogenic reefs** within the site. A recent workshop[58] concluded that the presence of Annex I biogenic reef cannot be inferred from single images, and produced primary and secondary criteria to define a biogenic reef, including density, patch size, elevation, distinctness from surrounding habitat and associated biota. When determining our level of confidence in the presence of this broad-scale habitat within the site, expert judgement was used to assess where possible, the images and video footage against these criteria. We have **Low** confidence in the presence and extent of **Subtidal biogenic reefs** that have been identified at two points approximately 100m apart on one video tow. Whilst the Technical Protocol E[40] indicates such evidence would indicate moderate confidence in presence and extent, JNCC applied expert judgement to conclude that a **Low** confidence is more appropriate after reviewing the image and video data available. JNCC concluded these

images did not demonstrate a significant presence in the site of a biogenic reef feature. Further survey work would be required in order to determine whether the feature is present in the site.

### 6.8.2 Advice on the General Management Approach for rMCZ features

A summary of the JNCC's assessments of confidence in feature condition and General Management Approach (**GMA**) proposed are presented below in Table 43 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 43: Summary of JNCC's conservation advice for features in Mid St Georges Channel rMCZ**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **Mid St Georges Channel rMCZ** (ISCZ 04) | **Moderate energy circalittoral rock** (A4.2) | **Low** (Low) | **Maintain** (Maintain) |
| | **Subtidal coarse sediment** (A5.1) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal sand** (A5.2) | **Low** (Low) | **Maintain** (Recover) |
| | **Subtidal mixed sediments** (A5.4) | **Low** (Low) | **Maintain** (Recover) |
| | **Subtidal biogenic reefs*** (A5.6) | **Not Assessed** (*) | **Not Assessed** (*) |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

The Irish Sea Conservation Zone regional MCZ project set a **Maintain** GMA for the feature **Moderate energy circalittoral rock** and a **Recover** GMA for the features **Subtidal coarse sediment** and **Subtidal sand**. JNCC concurred with these GMAs in our 2012 advice. After the review of recently collected data (see Table 1) our advice remains unchanged in 2014 for **Moderate energy circalittoral rock** and **Subtidal coarse sediment** because they are still considered to be moderately to highly vulnerable to pressures associated with ongoing activities, namely benthic trawling; refer to the Vulnerability Assessments in Table 156 for further detail in Annex 7.

**Subtidal mixed sediments** was previously recommended a **Recover** GMA; however after considering the updated information on extent of the feature within the site since 2012 and the current distribution of fishing activity, JNCC now advises that a **Maintain** GMA is now more appropriate for this feature. The fishing activities initially thought to occur over the feature do not now occur throughout the feature's extent within the site, therefore reducing its vulnerability to fishing-related pressures. **Subtidal sand** was also previously recommended a **Recover** GMA; however the fishing activity now occurring in the vicinity of the feature is at

a low level. JNCC is not providing any assessment for the **Subtidal biogenic reefs** because there is no evidence available to support the presence of a reef feature in the site.

### 6.8.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. JNCC advises that we have **Low** confidence in feature condition for the broad-scale habitats **Moderate energy circalittoral rock**, **Subtidal coarse sediment**, **Subtidal sand** and **Subtidal mixed sediments**.

### 6.8.4 Feature Risk

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7.

**Table 44: Mid St Georges Channel MCZ Feature Risk Assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| **Mid St Georges Channel rMCZ** (ISCZ 04) | **Moderate energy circalittoral rock** (A4.2) | **Low** Feature is not moderately or highly vulnerable to any pressures. | **High** Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Subtidal coarse sediment** (A5.1) | **Moderate** Feature is **moderately vulnerable** to one/more pressures. | **Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal sand** (A5.2) | **Low** Feature is not moderately or highly vulnerable to any pressures. | **High** Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Subtidal mixed sediments** (A5.4) | **Low** Feature is not moderately or highly vulnerable to any pressures. | **Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal biogenic reefs** (A5.6) | Feature not assessed | |

### 6.8.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site as a whole have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature

presence and extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 45 and Table 46 below.

### *Feature assessment*

**Table 45: Mid St Georges Channel MCZ Feature Data Sufficiency Assessment**

| Site (Code) | Feature (Code) | Q1a. Confidence score of at least moderate for feature presence? | Q1b. Is 1a based only on parent habitat being present? | Q1c. Confidence score of at least moderate for extent/ distribution? | Outcome from Question 1 assessment |
|---|---|---|---|---|---|
| **Mid St Georges Channel rMCZ** (ISCZ 04) | **Moderate energy circalittoral rock** (A4.2) | **Yes** (High confidence) | **No** | **Yes** (Moderate confidence) | **Data supports designation of feature** |
| | **Subtidal coarse sediment** (A5.1) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal sand** (A5.2) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal mixed sediments** (A5.4) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |

As the data for these features meet the criteria set by Question 1 and support the case for designation of these features, there is no requirement for Question 2 of the feature assessment to be considered as set out in the paper '*MCZ Levels of Evidence – Advice on when data supports a feature/site for designation from a scientific, evidence-based perspective*'[68] - see Section 5.5 of this advice.

### *Site level assessment*

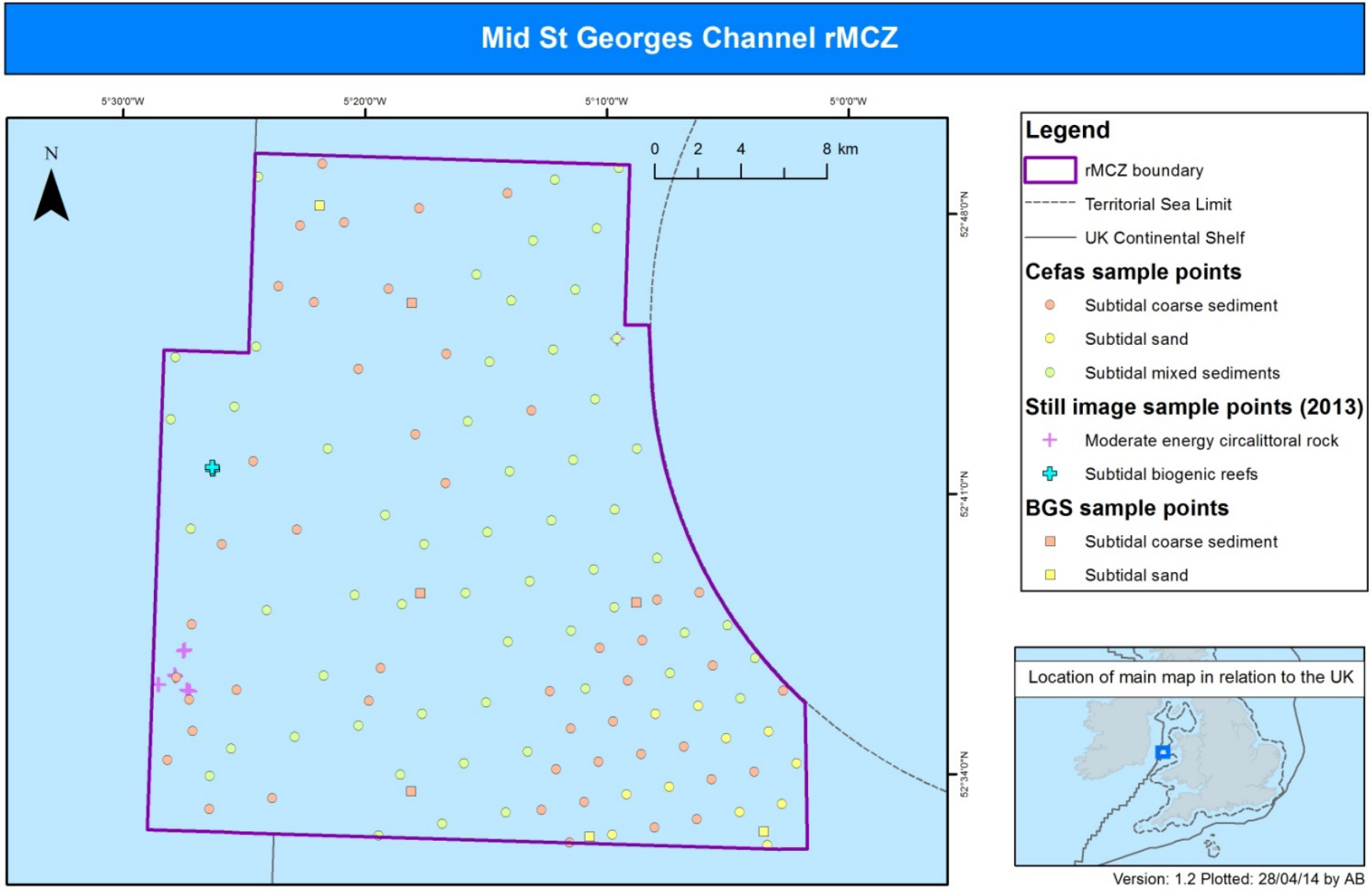
**Table 46: Mid St Georges Channel MCZ Site level assessment**

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **No** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Greater than 75%** |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Does this site contribute to filling a big gap in the network?**<br>**Maybe**. This site is one of three options to provide a replicate in the region for **Subtidal mixed sediments in 75-200m water depth** and **Subtidal sand in 75-200m depth**. There are already one replicate for each of these features considered as afforded protection within the existing network through the 'Big Gaps' assessment. These replicates are within potential Scottish Nature Conservation MPAs which for the purpose of the 'Big Gaps' assessment were considered to be 'designated sites'. See Section 5.5 for more detail. If any of these sites, or specific features within those sites, are not designated by Scottish Government, then there may be additional gaps that arise within the network in the Irish Sea. The site could also provide one of three |

| | |
|---|---|
| | options for a replicate of **Moderate energy circalittoral rock in 75-200m depth** in the region. The site could also contribute to increasing the percentage of **Moderate energy circalittoral rock** and **Subtidal coarse sediment** afforded protection within the region.<br><br>**Representativity** (seeking two examples of each EUNIS Level 3 habitat within each energy category (low, moderate and high) and depth zone (0-10m, 10-75m, 75-200m, 200m+) and two examples of each FOCI within each CP2 region):<br>- This site is one of three options within the Tranche Two sites to provide a replicate in the region for **Moderate energy circalittoral rock in 75-200m depth**. There is currently one site that affords protection to this feature in this depth/energy category within the region in the existing network which is The Maidens SAC. The other option would be North St Georges Channel rMCZ and South Rigg rMCZ.<br>- The site is one of three options within the Tranche Two sites to provide a replicate in the region for **Subtidal sand in 75-200m depth**. There is currently one site that affords protection to this feature in this depth/energy category within the region in the existing network which is Clyde Sea Sill potential Nature Conservation MPA (for the purpose of the 'Big Gaps' assessment pNCMPAs were considered to be 'designated sites'. See Section 5.5 for more detail)[87]. The other option would be North St Georges Channel rMCZ and South Rigg rMCZ.<br>- The site is one of three options within the Tranche Two sites to provide a replicate in the region for **Subtidal mixed sediments in 75-200m water depth**. There is currently one site that affords protection to this feature in this depth/energy category within the region in the existing network which is Upper Loch Fyne and Loch Goil potential Nature Conservation MPA (for the purpose of the 'Big Gaps' assessment pNCMPAs were considered to be 'designated sites'. See Section 5.5 for more detail)[57]. The other option would be North St Georges Channel rMCZ and South Rigg rMCZ.<br>**Adequacy** (seeking protection of at least 10% in area of each EUNIS Level 3 habitat within each CP2 region):<br>- This site could contribute to increasing the amount of **Moderate energy circalittoral rock** afforded protection within the region (currently 5.2% of the known area protected in the existing network).<br>- This site could contribute to increasing the amount of **Subtidal coarse sediment** afforded protection within the region (currently 9.1% of the known area protected in the existing network). |

### 6.8.6 Feature map

[87] Please note that proposed Nature Conservation MPAs in Scotland were included in the 'Big Gaps' assessment as if they were existing sites. If any of these sites, or specific features within those sites, are not designated by Scottish Government, then there may be additional gaps that arise within the network in the Northern North Sea and Irish Sea (see Section 6.5 for more detail).




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**Figure 20: Map of broad-scale habitats in Mid St Georges Channel rMCZ**

## 6.9 Mud Hole rMCZ

Mud Hole rMCZ was recommended by the Irish Sea Conservation Zone regional MCZ project[86] for the following three features: the broad-scale habitat **Subtidal mud** and the habitat Features of Conservation Interest (**FOCI**) **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities**.

In 2012 a MB0120[32] survey collected further evidence for Mud Hole rMCZ. The survey confirmed the presence of the features recommended for the site and a new habitat map was developed from these survey data, which included multiple ground-truth validation points.

### 6.9.1 Assessment of feature presence and extent

JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce a confidence assessment in feature presence and feature extent, utilising all available data for the site in 2014 (see Section 5.1). A summary of the assessments is presented below in Table 47. The data and assessments can be viewed in full in Annex 4, Table 125 and Table 126.

**Table 47: Mud Hole rMCZ Evidence Assessment Summary**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature presence** (previous assessment scores) | **Rationale for confidence in feature presence** | **Confidence in feature extent** (previous assessment scores) | **Rationale for confidence in feature extent** |
|---|---|---|---|---|---|
| **Mud Hole rMCZ** (ISCZ 01) | **Subtidal mud** (A5.3) | **High** (Moderate) | A full coverage habitat map from survey with 20 supporting ground–truthing sample data (from MB0120 and BGS) demonstrate the presence of Subtidal mud in the site. | **High** (Moderate) | A full coverage habitat map from survey with supporting ground–truthing sample data demonstrate the extent of Subtidal mud in the site. |
| | **Mud habitats in deep water** | **High** (Low) | A full coverage habitat map from survey with 18 supporting ground –truthing sample data (MB0120) demonstrate the presence of Mud habitats in deep water in the site. | **High** (Low) | A full coverage habitat map from survey with supporting ground –truthing sample data demonstrate the extent of Mud habitats in deep water in the site. |
| | **Sea-pen and burrowing megafauna communities** | **High** (Low) | A full coverage habitat map from survey with 24 supporting ground –truthing sample data (Marine Institute) demonstrate the presence of Sea-pen and burrowing megafauna communities in the site. | **High** (Low) | A full coverage habitat map from survey with supporting ground –truthing sample data demonstrate the extent of Sea-pen and burrowing megafauna communities in the site. |

Multiple ground-truthing sample points from the 2012 MCZ verification survey verify that the presence and extent for the recommended feature **Subtidal mud**; the classification of the recent samples also match the original UKSeaMap[43] modelled habitat distribution for the site (See Figure 21). JNCC now have **High**

confidence in the presence and extent of **Subtidal mud** across the site, elevated from our previous **Moderate** confidence scores for presence and extent our 2012 advice[24].

There are multiple sample points demonstrating the presence of the features **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities** leading to **High** confidence in the presence of the features in the site. Our current assessment represents an increase in confidence from the **Low** score reported in JNCC's 2012 advice, and reflects the greater volume of ground-truthed data now available for the site. Our confidence in the extent of the features has also increased to **High** with the ground-truthing sample points classified to **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities** spread throughout the site.

Should Mud Hole rMCZ be designated by Defra, JNCC advise that **Mud habitats in deep water** should not be a designated feature of the site if the **Subtidal mud** and **Sea-pen and burrowing megafauna communities** features are designated. Figure 22 clearly shows these three habitats share the same spatial extent. JNCC consider there is limited extra conservation value in designating **Mud habitats in deep water** where it is already afforded protection by its parent and component habitats. Please refer to Annex 6 for more information.

### 6.9.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of confidence in feature condition and General Management Approach (**GMA**) proposed are presented below in Table 48 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 48: Summary of JNCC's conservation advice for features in Mud Hole rMCZ)**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **Mud Hole rMCZ** (ISCZ 01) | **Subtidal mud** (A5.3) | **Low** (Low) | **Recover** (Recover) |
| | **Mud habitats in deep water** | **Low** (Low) | **Recover** (Recover) |
| | **Sea-pen and burrowing megafauna communities** | **Low** (Low) | **Recover** (Recover) |

The Irish Sea Conservation Zone regional MCZ project set a **Recover** GMA for the features **Subtidal mud, Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities**. JNCC concurred with these GMAs in our 2012 advice[24]. After a review of currently available data (see Table 1) our view remains unchanged in 2014 for all three features. Additionally, acoustic backscatter data from the MB0120 survey show evidence of trawl marks through the centre of the site. Therefore, we advise a GMA of

**Recover** is appropriate for all the features within this site; refer to the Vulnerability Assessments in Annex 7 Table 157 for further detail.

### 6.9.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. JNCC advices that we have **Low** confidence in feature condition for **Subtidal mud, Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities**. **Mud habitats in deep water** has been expertly judged as having **Low** confidence in feature condition due to the reasons explained in Section 5.3 on the feature condition methodology.

### 6.9.4 Feature risk

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7.

**Table 49: Mud Hole MCZ Feature Risk Assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| **Mud Hole rMCZ** (ISCZ 01) | **Subtidal mud** (A5.3) | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Mud habitats in deep water** | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Sea-pen and burrowing megafauna communities** | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |

### 6.9.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site as a whole have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence and extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill

a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 50 and Table 51 below.

### *Feature assessment*

**Table 50: Mud Hole MCZ Feature Data Sufficiency Assessment**

| Site (Code) | Feature (Code) | Q1a. Confidence score of at least moderate for feature presence? | Q1b. Is 1a based only on parent habitat being present? | Q1c. Confidence score of at least moderate for extent/ distribution? | Outcome from Question 1 assessment |
|---|---|---|---|---|---|
| **Mud Hole rMCZ** (ISCZ 01) | **Subtidal mud** (A5.3) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Mud habitats in deep water** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature, however JNCC advise that this feature is not designated within this site (see Annex 6).** |
| | **Sea-pen and burrowing megafauna communities** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |

As the data for these features meet the criteria set by Question 1 and support the case for designation of these features, there is no requirement for Question 2 of the feature assessment to be considered as set out in the paper '*MCZ Levels of Evidence – Advice on when data supports a feature/site for designation from a scientific, evidence-based perspective*'[68] - (see Section 5.5) of this advice.

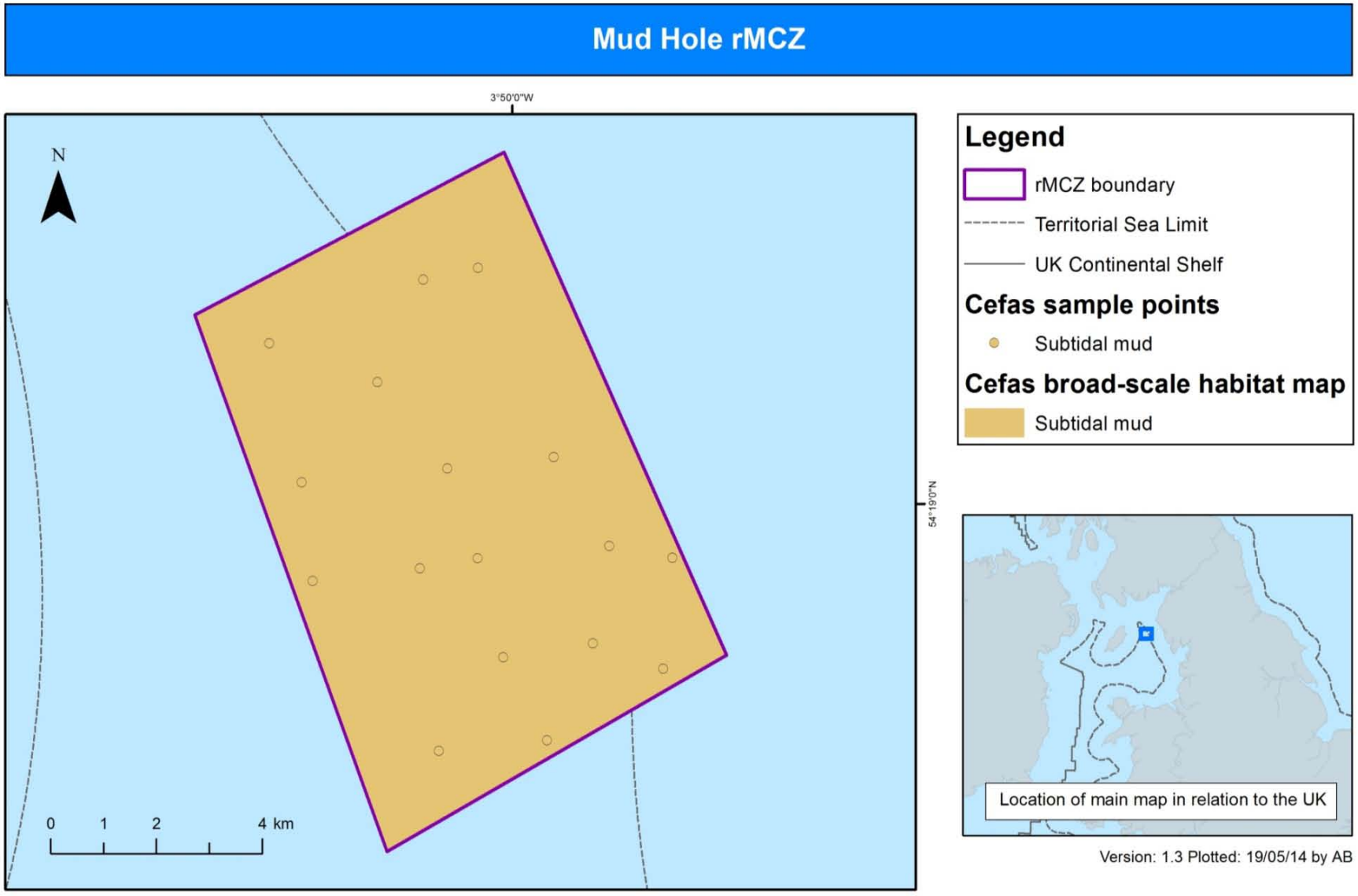
### *Site level assessment*

**Table 51: Mud Hole MCZ Site level assessment**

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **No** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Greater than 75%** |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Does this site contribute to filling a big gap in the network?**<br>**Yes**. This site is one of four options to fill a gap for **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities** which are currently not afforded protection within any sites within the region in the existing network. This site could also substantially contribute to increasing the amount of **Subtidal mud** afforded protection within the region (currently 0.8% of the known area protected in the existing network). There are several other sites that could also increase the protection of subtidal mud within the network although with currently only 0.8% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% by area.<br><br>**Representativity** (seeking two examples of each EUNIS Level 3 habitat within each energy category (low, moderate and high) and depth zone (0-10m, 10-75m, 75-200m, 200m+) and two examples of each FOCI within each CP2 region):<br>- The site is one of four options within the Tranche Two sites to fill a gap in the region for **Mud habitats in deep water**. There are no sites within the region in the existing network which afford protection to this feature. The other options would be Slieve Na Griddle rMCZ, South Rigg rMCZ and West of Walney |

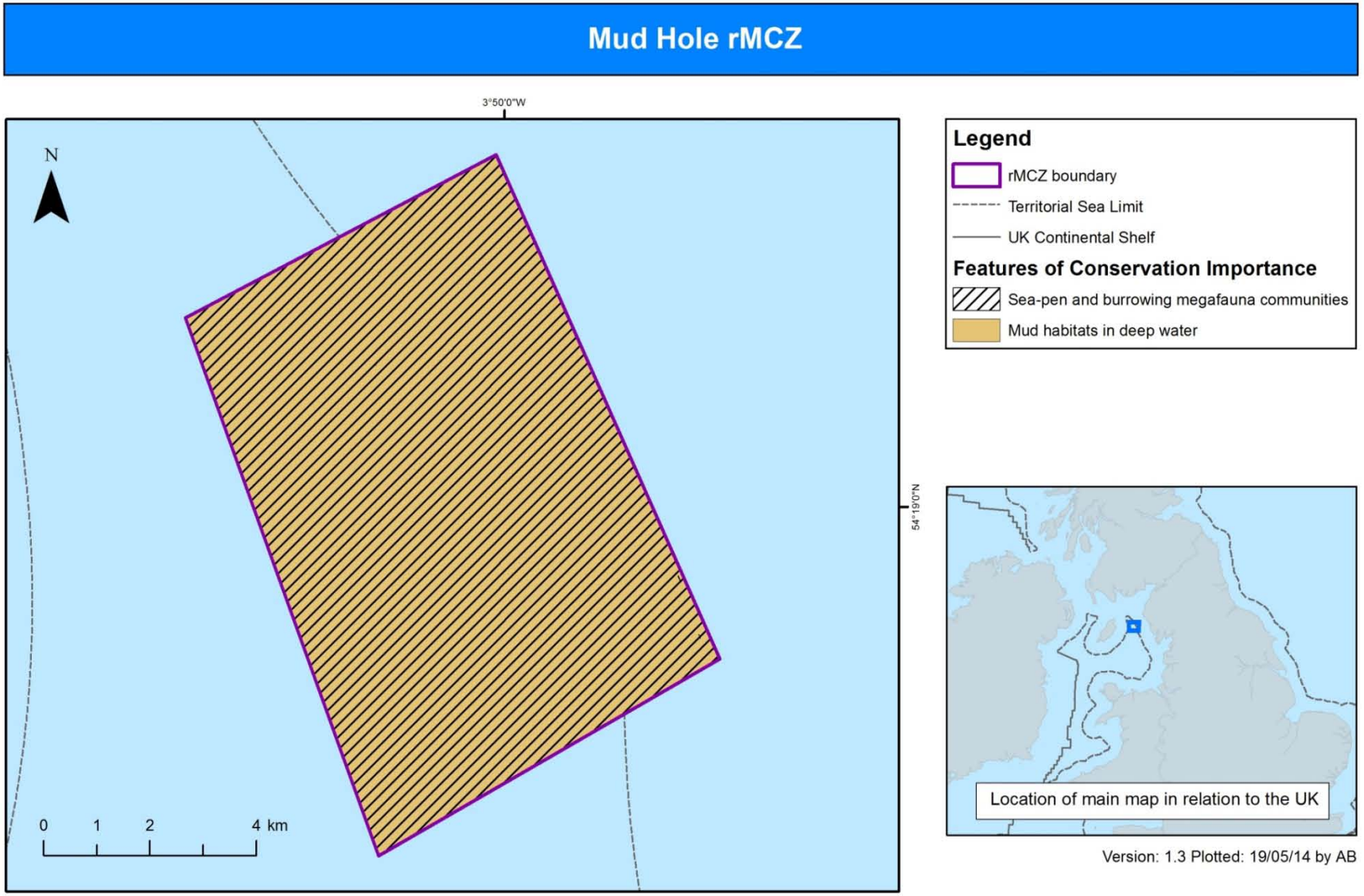
| | |
|---|---|
| | rMCZ.<br>- The site is one of four options within the Tranche Two sites to fill a gap in the region for **Sea-pen and burrowing megafauna communities**. There are no sites within the region in the existing network which afford protection to this feature. The other options would be Slieve Na Griddle rMCZ, South Rigg rMCZ and West of Walney rMCZ. Note that **Sea-pen and burrowing megafauna communities** could be afforded protection by two possible Scottish Nature Conservation MPAs (South Arran NCMPA, Upper Loch Fyne and Loch Goil NCMPA) but given that neither of these are currently designated and that they would be of a shallow depth, the communities are likely to be different to the same habitat in the offshore environment and thus JNCC considers there may still be a gap in the network for this feature.<br><br>**Adequacy** (seeking protection of at least 10% by area of each EUNIS Level 3 habitat within each CP2 region):<br>- This site could substantially contribute to increasing the amount of **Subtidal mud** afforded protection within the region (currently 0.8% of the known area protected in the existing network). There are several other sites that could also increase the protection of subtidal mud within the network although with currently only 0.8% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% by area. |

### 6.9.6 Feature maps




UK Territorial Sea Limit © Crown copyright and UKHO. All rights reserved. The exact limits of the UK Continental shelf are set out in orders made under section 1 (7) of the Continental Shelf Act 1964 (© Crown Copyright). Continental Shelf (Designation of Areas) Order 2013. Combining source layers from UKHO. © UKHO © JNCC.
Not to be used for navigation. © JNCC 05/2014

**Figure 21: Map of broad-scale habitats in Mud Hole rMCZ**




UK Territorial Sea Limit © Crown copyright and UKHO. All rights reserved. The exact limits of the UK Continental shelf are set out in orders made under section 1 (7) of the Continental Shelf Act 1964 (© Crown Copyright). Continental Shelf (Designation of Areas) Order 2013. Combining source layers from UKHO. © UKHO © JNCC.
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**Figure 22: Map of habitat Features of Conservation Importance in Mud Hole rMCZ**

## 6.10 North East of Farnes Deep MCZ

North East of Farnes Deep MCZ (originally recommended under the name Rock Unique rMCZ) was designated in November 2013 for the broad-scale habitat features **Subtidal coarse sediment** and **Subtidal sand**.

In JNCC's 2013 post-consultation advice[25] on Tranche One offshore rMCZs, we provided advice on three further features: **Subtidal mud**, **Subtidal mixed sediments** and the habitat Feature of Conservation Interest (**FOCI**) **Sea-pen and burrowing megafauna communities**. JNCC advised that these features should be considered for designation in the site. These features were not designated in Tranche One, but JNCC continue to recommend they are considered as additional features to the site as part of the Tranche Two process, subject to further advice provided below.

JNCC is providing advice in 2014 on the habitat FOCI **Mud habitats in deep water** and species FOCI **Ocean quahog *(Arctica islandica)*** that have not previously been considered for designation in the site.

JNCC note that no new data have been made available for this site since our assessments in 2013.

### 6.10.1 Assessment of feature presence and extent

JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce a new confidence assessment in feature presence and feature extent, utilising all available data for the site in 2014 (see Section 5.1). A summary of the assessments is presented below in Table 52. The data and assessments can be viewed in full in Annex 4, Table 127 and Table 128.

**Table 52: North East of Farnes Deep MCZ Evidence Assessment Summary**

| Site (Code) | Feature (Code) | Confidence in feature presence (previous assessment scores) | Rationale for confidence in feature presence | Confidence in feature extent (previous assessment scores) | Rationale for confidence in feature extent |
|---|---|---|---|---|---|
| **North East of Farnes Deep MCZ** (NG15) | **Subtidal mud** (A5.3) | **Moderate** (High) | A full coverage habitat map from survey with two ground-truthing sample data which demonstrate the presence of Subtidal mud in the site. Expert judgement applied to reduce confidence to Moderate based since both samples showed faunal communities more characteristic of sandier sediments. | **Moderate** (High) | A full coverage habitat map from survey with ground-truthing sample data demonstrate the extent of Subtidal mud in the site. Expert judgement applied to reduce confidence to Moderate due to the uncertainty in samples verifying the presence of Subtidal mud in the site. |
| | **Subtidal mixed sediments** (A5.4) | **High** (High) | A full coverage habitat map from survey with supporting ground-truthing sample data demonstrates the presence of | **High** (High) | A full coverage habitat map from survey with ground-truthing sample data demonstrates the extent of Subtidal mixed |

| **Site** (Code) | **Feature** (Code) | **Confidence in feature presence** (previous assessment scores) | **Rationale for confidence in feature presence** | **Confidence in feature extent** (previous assessment scores) | **Rationale for confidence in feature extent** |
|---|---|---|---|---|---|
| | | | Subtidal mixed sediments in the site. | | sediments in the site. |
| | **Mud habitats in deep water** | **Moderate** (*) | A full coverage habitat map from survey with supporting ground-truthing sample data and feature recorded in a low energy environment demonstrates the presence of Mud habitats in deep water. Expert judgement applied to reduce confidence to Moderate since both samples showed faunal communities more characteristic of sandier sediments. | **Moderate** (*) | A full coverage habitat map from survey with supporting ground-truthing sample data and the feature recorded in a low energy environment. Expert judgement applied to reduce confidence to Moderate based due to the uncertainty in samples verifying the presence of the habitat in the site |
| | **Sea-pen and burrowing megafauna communities** | **No Confidence** (High) | There are no data to support the presence of the Sea-pen and burrowing megafauna communities within the site. | **No Confidence** (Low) | There are no data to support the extent of the Sea-pen and burrowing megafauna communities within the site. |
| | **Ocean quahog (*Arctica islandica*)*** | **High** (*) | There are 13 samples recording the presence of Ocean quahog in the site, collected in 2012 as part of MB0120. | **High** (*) | Data records identify locations in the northern half and south west portion of the site where the dominant habitats are Subtidal sand, Subtidal mud and Subtidal mixed sediments but not in the south east portion, where the dominant habitat is Subtidal coarse sediments. |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

The site has not been surveyed since the MB0120[32] survey in 2012 and there has been no additional data collected since JNCC's assessment for the site in 2013[25]. Therefore our advice on the confidence in feature presence and feature extent for **Subtidal mixed sediments** remains unchanged.

However for **Subtidal mud**, our confidence in both feature presence and feature extent were **High** in 2013, but these have now been revised to **Moderate** in 2014. While no new survey data are available for the site, recent exploratory analysis of the fauna present in the ground-truth samples indicated that the faunal communities present are more characteristic of sandy sediments as opposed to the muddier sediments indicated by the Particle Size Analysis (**PSA**) results. Whilst the PSA data places the samples close to the **Subtidal sand**/**Subtidal mud** class boundary in terms of percentage of the sediment comprising sand particles, the JNCC MCZ Evidence QA Group concluded that that the presence of fauna more characteristic of sand reduced the likelihood the area comprised Subtidal mud. Therefore JNCC downgraded the confidence in feature presence from **High** to **Moderate**. In turn, as confidence in feature extent cannot be greater than feature presence together with the uncertainty over the faunal communities present within the site, our confidence in feature extent has also been downgraded from **High** to **Moderate**. **Mud habitats in deep water** has been assigned the same confidence scores as **Subtidal**

**Mud** – **Moderate** for feature presence and **Moderate** for feature extent – as the data supporting this feature are the same samples that support **Subtidal mud**. The likelihood of the **Mud habitats in deep water** feature being present is verified by the EUSeaMap[44] energy model layer indicating this site is located in a low-energy environment.

An extensive sampling campaign across North East of Farnes Deep MCZ in 2012 through MB0120[32], found **Ocean quahog (*Arctica islandica*)** present in 13 of the 46 grab stations, coinciding with **Subtidal sand** (seven grab samples), **Subtidal mixed sediments** (three grab samples) **Subtidal mud** (two grab samples) and **Subtidal coarse sediment** (one sample). In addition, a Cefas North Sea Benthos Survey from MB0116[31] identified a single record of the species within the site in 1986. Based on these recent ground-truthing records, we have **High** confidence the species is present within the boundary of the MCZ. We also have **High** confidence in the evidence underpinning the distribution of species, which show **Ocean quahog (*Arctica islandica)*** at the grab stations in the northern half and south western portion of the rMCZ where the dominant habitats are **Subtidal sand**, **Subtidal mixed sediments** and **Subtidal mud** but not in the south-eastern portion, where the dominant habitat is **Subtidal coarse sediment**.

Following our advice in 2013[24], JNCC have published a paper clarifying the definitions of the features **Mud Habitats in Deep Water** and **Sea-pen and burrowing megafauna communities**[49]. Consequently, Cefas reviewed their previous classifications of samples to **Sea-pen and burrowing megafauna communities**. They determined that whilst sea-pens were identified in three still images in the site, no burrows and/or mounds were present in these images and they concluded the samples should not be classified as records of the feature **Sea-pen and burrowing megafauna communities**. In support of Cefas' conclusion, JNCC's recent exploratory infaunal analysis of the fauna collected in grab samples did not record the species typically considered as burrowing megafauna for this feature.

Therefore as the habitat definition for **Sea-pen and burrowing megafauna communities** requires the presence of 'burrows and mounds'[49] there is no longer any evidence to support the presence of this feature within the site. JNCC has amended its assessments from **High** confidence to **No** confidence in presence, and from **Low** confidence to **No** confidence in extent, in accordance with Technical Protocol E[40] and accompanying guidance[41].

### 6.10.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of our confidence in feature condition and the General Management Approach (**GMA**) proposed are presented below in Table 53 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 53: Summary of JNCC's conservation advice for features in North East of Farnes Deep MCZ**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **North East of Farnes Deep MCZ** (NG15) | **Subtidal mud** (A5.3) | **Low** (Low) | **Maintain** (Maintain) |
| | **Subtidal mixed sediments** (A5.4) | **Low** (Low) | **Maintain** (Maintain) |
| | **Mud habitats in deep water** | **Low** (*) | **Maintain** (*) |
| | **Ocean quahog (*Arctica islandica*)*** | **Low** (*) | **Maintain** (*) |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

In JNCC's 2013 advice[25], we proposed **Maintain** GMAs for the features **Subtidal mud** and **Subtidal mixed sediments**. JNCC have also advised a Maintain GMA for the habitat FOCI **Mud habitats in deep water** and the species FOCI **Ocean quahog** (***Arctica islandica***), features for which we have not previously provided advise.

JNCC are not providing any advise on **Sea-pen and burrowing megafauna communities** in 2014 because there is no longer any evidence to identify its presence in the site.

### 6.10.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. Therefore JNCC continues to have **Low** confidence in the condition of the features **Subtidal mud** and **Subtidal coarse sedimen**t. JNCC did not previously provide advice on **Mud habitats is deep water** and species FOCI **Ocean quahog** (***Arctica islandica***) for this site; in this 2014 assessment our confidence in the condition of these features is **Low**.

### 6.10.4 Feature risk

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7.

**Table 54: North-East Farnes Deep MCZ Feature Risk Assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| **North East of Farnes Deep MCZ** (NG15) | **Subtidal mud** (A5.3) | **Low**<br>Feature is **not moderately or highly vulnerable** to any pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal mixed sediments** (A5.4) | **Low**<br>Feature is **not moderately or highly vulnerable** to any pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Mud habitats in deep water** | **Low**<br>Feature is **not moderately or highly vulnerable** to any pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Sea-pen and burrowing megafauna communities** | Feature not assessed | |
| | **Ocean quahog (*Arctica islandica*)*** | Low<br>Feature is **not moderately or highly vulnerable** to any pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |

*These features are recently identified and added to our advice.

### 6.10.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site as a whole have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence and extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 55 and Table 56 below.

### *Feature assessment*

### Table 55: North East of Farnes Deep MCZ Feature Data Sufficiency Assessment

| Site (Code) | Feature (Code) | Q1a. Confidence score of at least moderate for feature presence? | Q1b. Is 1a based only on parent habitat being present? | Q1c. Confidence score of at least moderate for extent/ distribution? | Outcome from Question 1 assessment |
|---|---|---|---|---|---|
| **North East of Farnes Deep MCZ** (NG15) | **Subtidal mud** (A5.3) | **Yes** (Moderate confidence) | **No** | Yes (Moderate confidence) | **Data supports designation of feature.** |
| | **Subtidal mixed sediments** (A5.4) | **Yes** (High confidence) | **No** | Yes (High confidence score) | **Data supports designation of feature.** |
| | **Mud habitats in deep water** | **Yes** (Moderate confidence) | **No** | **Yes** (Moderate confidence) | **Data supports designation of feature.** |
| | **Ocean quahog (*Arctica islandica*)** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature.** |

As the data for these features meet the criteria set by Question 1 and support the case for designation of these features, there is no requirement for Question 2 of the feature assessment to be considered as set out in the paper '*MCZ Levels of Evidence – Advice on when data supports a feature/site for designation from a scientific, evidence-based perspective*'[68] - see Section 5.5 of this advice.

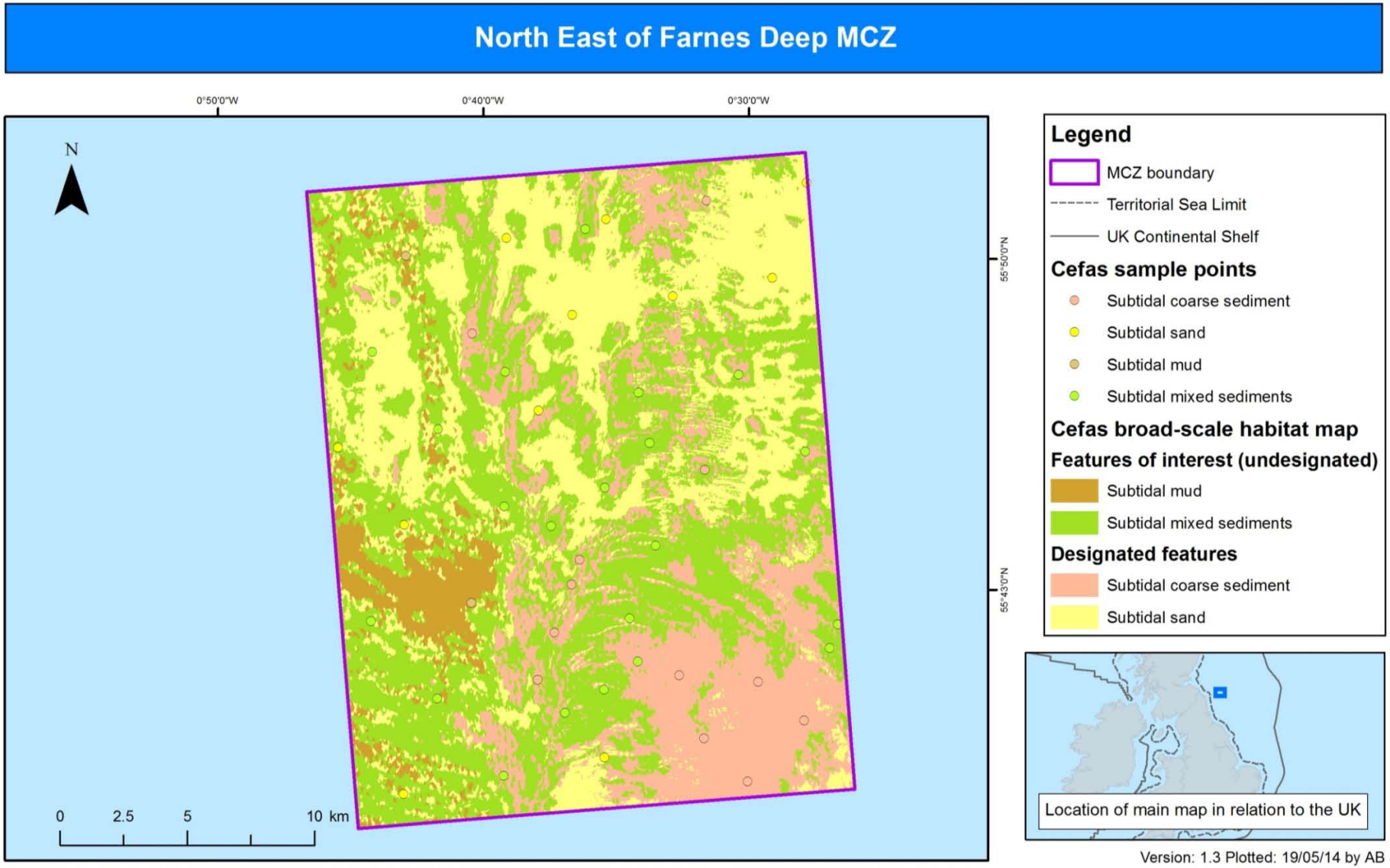
### *Site level assessment*

### Table 56: North East of Farnes Deep MCZ Site level assessment

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **No** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Greater than 75%** |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Do the additional features within the site contribute to filling a big gap in the network?**<br>**Yes**. The site is one of three options within the Tranche Two sites to fill a gap in the region for **Mud habitats in deep water**. There are currently no sites in the existing network that afford protection to this feature within the region. The site can also provide replicates **Subtidal mixed sediments in 75-200m depth** and **Subtidal mixed sediments in a low energy environment**. This site can also contribute to increasing the percentage of **Subtidal mud** afforded protection within the region. There are a number of other sites that could also increase the protection of subtidal mud within the network, although with currently only <0.1% of the known area afforded protection, several sites will be needed to afford protection to the recommended minimum of 10% by area. Due to the site having already been designated and our confidence in feature presence and extent being either high or moderate, JNCC recognise that designating Subtidal mixed sediments, Subtidal mud, and Mud habitats in deep water as features of North-East of Farnes Deep MCZ may be easier than designating entirely new sites to fill the gaps in the network.<br><br>**Representativity** (seeking two examples of each EUNIS Level 3 habitat within each energy category (low, moderate and high) and depth zone (0-10m, 10-75m, 75-200m, |

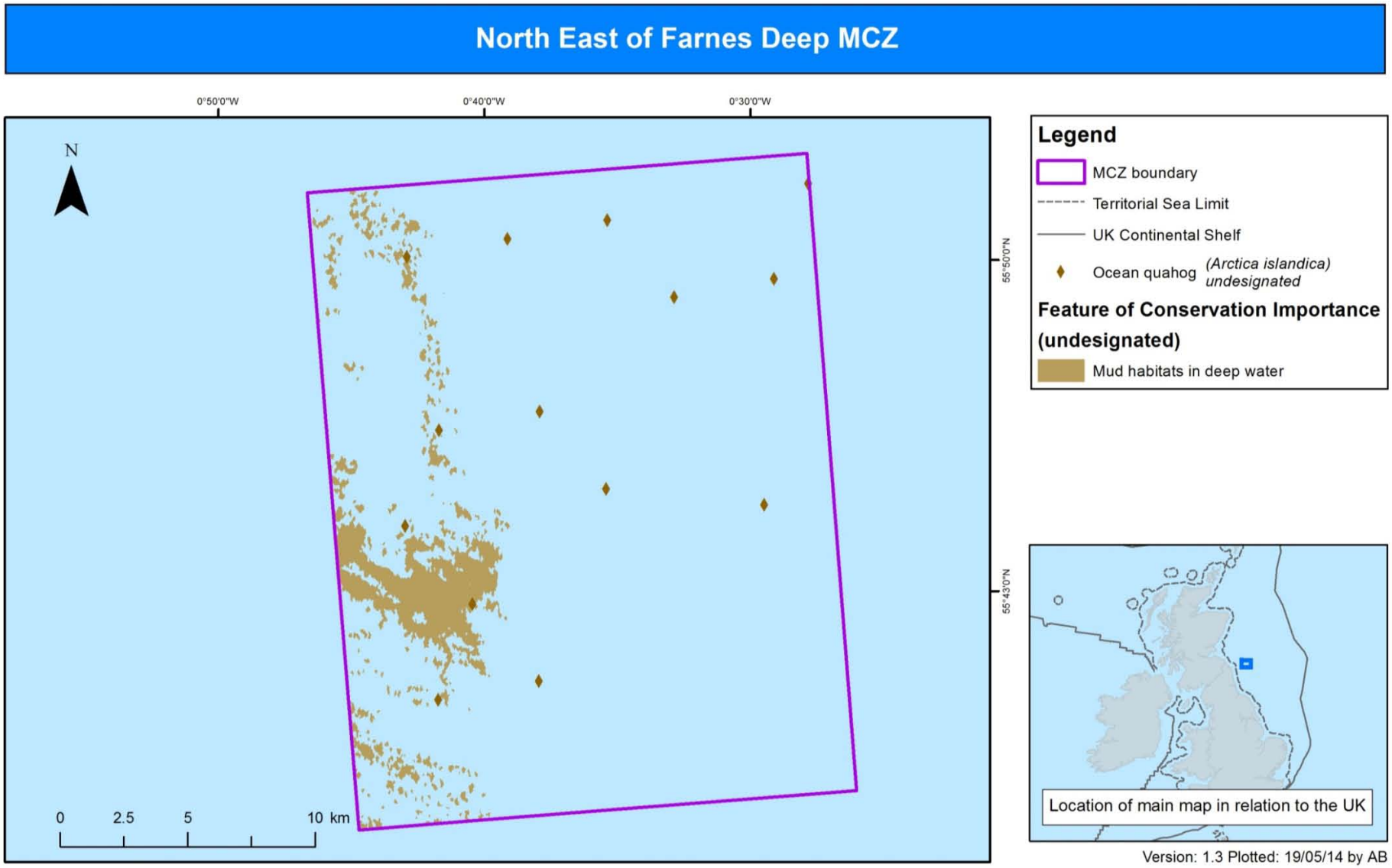
| Question | Response |
|---|---|
| | 200m+) and two examples of each FOCI within each CP2 region):<br>- The site is one of four options within the Tranche Two sites to provide a replicate in the region for **Subtidal mixed sediments in 75-200m depth**. There is currently only one site that affords protection to this feature in this depth/energy category within the region in the existing network, which is Moray Firth SAC, The other site options would be Compass Rose rMCZ, Farnes East rMCZ and Fulmar rMCZ.<br>- The site is one of three options within the Tranche Two sites to provide a replicate in the region for **Subtidal mixed sediments in a low energy environment**. There is currently only one site that affords protection to this feature in this depth/energy category within the region in the existing network, which is Moray Firth SAC, The other site options would be Farnes East rMCZ and Fulmar rMCZ.<br>- The site is one of three options within the Tranche Two sites to fill a gap in the region for **Mud habitats in deep water** in the region. There are currently no sites that afford protection to this feature within the region in the existing network. The other site options are Farnes East rMCZ and Fulmar rMCZ.<br><br>**Adequacy** (seeking protection of at least 10% by area of each EUNIS Level 3 habitat within each CP2 region):<br>- This site could contribute to increasing the amount of **Subtidal mud** afforded protection within the region (currently only 0.1% of the known area protected in the existing network). |

### 6.10.6 Feature maps




UK Territorial Sea Limit © Crown copyright and UKHO. All rights reserved. The exact limits of the UK Continental shelf are set out in orders made under section 1 (7) of the Continental Shelf Act 1964 (© Crown Copyright). Continental Shelf (Designation of Areas) Order 2013. Combining source layers from UKHO. © UKHO © JNCC.
Not to be used for navigation. © JNCC 05/2014

**Figure 23: Map of broad-scale habitats in North East of Farnes Deep MCZ**




UK Territorial Sea Limit © Crown copyright and UKHO. All rights reserved. The exact limits of the UK Continental shelf are set out in orders made under section 1 (7) of the Continental Shelf Act 1964 (© Crown Copyright). Continental Shelf (Designation of Areas) Order 2013. Combining source layers from UKHO. © UKHO © JNCC.
Not to be used for navigation. © JNCC 05/2014

**Figure 24: Map of habitat and species Features of Conservation Importance in North East of Farnes Deep MCZ**

## 6.11 North St Georges Channel rMCZ

North St Georges Channel rMCZ was recommended by the Irish Sea Conservation Zone regional MCZ project[86] for the broad-scale habitats **High energy circalittoral rock**, **Moderate energy circalittoral rock**, **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mixed sediments** and **Subtidal biogenic reefs**, together with the habitat Feature of Conservation Interest (**FOCI**) **Horse mussel beds (*Modiolus modiolus*)** and the geomorphological feature **Drumlins**. The habitat FOCI **Subtidal Sands and gravels** was identified as present within the site but not recommended by the regional MCZ project (and has not been assessed by JNCC – see Section 5.1).

JNCC is also providing advice on the recently identified feature **Subtidal mud**.

### 6.11.1 Assessment of feature presence and extent

JNCC's 2014 assessments were conducted using recent MB0120[32] survey data, EUSeaMap[44] and data from the Defra contract MB0102[74] (modelled habitat data), a number of separate surveys [Irish Sea Pilot (2003)[88], Celtic Voyager/ Rees survey (2005)[89], Cefas North West Anglesey cruise (2009)[90], and CCW Pedryn surveys (2009/2010)][91], and available point data from British Geological Survey (**BGS**), MB0102[74] and Marine Recorder.

It should be noted that the assessment was carried out on the main boundary of the site in addition to the boundary extension in the north east, which was originally proposed to capture the geomorphological feature **Drumlins**. Note that the regional MCZ project proposed the designation Drumlins with the agreement of stakeholders on the basis that the underlying broad-scale habitats and habitat FOCI in the extended area would not be proposed for designation.

JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce a revised confidence assessment in feature presence and feature extent, utilising all available data for the site in 2014 (see Section 5.1). A summary of the assessments is presented below in Table 57. The data and assessments can be viewed in full in Annex 4, Table 129 and Table 130.

[88] Irish Sea Pilot Project. Available at: http://jncc.defra.gov.uk/pdf/irishseapilot_all.pdf
[89] DTI SEA6 Sub-contract report. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/197297/SEA6_Modiolus_Rees.pdf
[90] Information on data not currently available online
[91] Data not currently available online but information on the surveys is available at: http://data.gov.uk/data/search?publisher=joint-nature-conservation-committee&unpublished=true&sort=title_string+asc&page=4

## Table 57: North St Georges Channel rMCZ Evidence Assessment Summary

| Site (Code) | Feature (Code) | Confidence in feature presence (previous assessment scores) | Rationale for confidence in feature presence | Confidence in feature extent (previous assessment scores) | Rationale for confidence in feature extent |
|---|---|---|---|---|---|
| **North St Georges Channel rMCZ** (ISCZ 03) | **High energy circalittoral rock** (A4.1) | **No Confidence** (Low) | Data are only available for the parent feature data to demonstrate the presence of High energy circalittoral rock in the site. Given the extensive sampling that has been undertaken at this site that has not identified the feature, expert judgement assigned No confidence in presence of the feature. | **No Confidence** (Low) | Only data are available for the parent feature to demonstrate the extent of High energy circalittoral rock. Given the extensive sampling that has been undertaken at this site, expert judgement assigned No confidence in feature extent. |
| | **Moderate energy circalittoral rock** (A4.2) | **High** (High) | A habitat map from survey with feature polygons containing 55 video tows and interpreted ground-truthing data (video, still image from survey) demonstrate the presence of Moderate energy circalittoral rock in the site. | **High** (Moderate) | Sample data well distributed across site and supported by a habitat map (from survey) demonstrates the extent of Moderate energy circalittoral rock in the site. |
| | **Subtidal coarse sediment** (A5.1) | **High** (High) | A habitat map from survey with feature polygons containing 49 biological validation samples (and two points in the extension area) and interpreted ground-truthing data (video, still image and grab samples from survey) demonstrates the presence of Subtidal coarse sediment in the site. Most records agree with respect to the habitat type shown on the map. | **High** (Low) | Sample data well distributed across site and supported by a habitat map (from survey) demonstrates the extent of Subtidal coarse sediment in the site. |
| | **Subtidal sand** (A5.2) | **High** (Moderate) | A habitat map from survey with feature polygons containing 38 validation samples and interpreted ground-truthing data (video, still image and grab samples from survey) demonstrate the presence of Subtidal sand in the site. | **High** (Low) | Sample data well distributed across site and supported by a habitat map (from survey) demonstrates the extent of Subtidal sand in the site. |
| | **Subtidal mud*** (A5.3) | **Moderate** (*) | A habitat map with polygons demonstrates the presence of Subtidal mud in the site, however the two ground-truthing points do not fall within the mud polygons. | **Low** (*) | As there has been extensive sampling within the site that has not identified the feature, and the data points that are present do not match the mapped extent of Subtidal mud, expert judgement assigned Low confidence to the feature extent. |
| | **Subtidal mixed sediments** (A5.4) | **High** (Low) | A habitat map from survey with polygons containing 52 ground-truth samples (and one point in extension area) and interpreted ground-truthing data (video, still image and grab samples | **High** (Low) | Sample data well distributed across site and supported by a habitat map (from survey) demonstrates the extent of Subtidal mixed sediments in the site. |

| **Site** (Code) | **Feature** (Code) | **Confidence in feature presence** (previous assessment scores) | **Rationale for confidence in feature presence** | **Confidence in feature extent** (previous assessment scores) | **Rationale for confidence in feature extent** |
|---|---|---|---|---|---|
| | | | from survey) demonstrate the presence of Subtidal mixed sediments. | | |
| | **Subtidal biogenic reefs** (A5.6) | **Low** (Low) | There are nine data points five are more than12 years old that demonstrate the presence of *Modiolus modiolus* and *Sabellaria spinulosa* in the site JNCC are uncertain whether the *Modiolus modiolus* beds and *Sabellaria* records actually constitute biogenic reefs due to sampling methods employed and limited other supporting data. Given our uncertainty in the feature classification from the underlying data, expert judgement assigned Low confidence. | **Low** (Low) | No habitat map available and, limited records to demonstrate the extent of Subtidal biogenic reefs in the site. Given the uncertainty in the feature classification from the underlying data, expert judgement assigned Low confidence. |
| | **Horse mussel (*Modiolus modiolus*) beds** | **Low** (Low) | There are nine data points, five are more than12 years old and four are less than 6 years old that demonstrate the presence of Horse mussel (*Modiolus modiolus*) beds. JNCC are uncertain whether the *Modiolus modiolus* records identified actually constitute a bed due to sampling methods used and limited other data. Expert judgement assigned Low confidence. | **Low** (Low) | No habitat map available and limited records to demonstrate the extent of Horse mussel (*Modiolus modiolus*) beds. JNCC are uncertain in the feature classification due to the underlying data, expert judgement assigned Low confidence. |
| | **Drumlins** | **High** (High) | Distinct full coverage multibeam records demonstrate the presence of the Drumlins geomorphological feature | **High** (High) | Distinct full coverage multibeam records demonstrate the extent of the Drumlins feature within the site |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

JNCC reviewed the previous 2013 assessment for the feature **High energy circalittoral rock** (where confidence in presence and extent was found to be **Low**) and took into consideration the recent available evidence. We now conclude the feature is not present within the site. While recent data verifies the presence of the *parent* circalittoral rock feature, the extensive sampling undertaken across the site found no further evidence of High energy circalittoral rock. JNCC applied expert judgement to downgrade the confidence (originally based on one historical and incorrectly referenced sample point) for both presence and extent, instead noting that only **Moderate energy circalittoral rock** is present within the site. We therefore have **No confidence** in **High energy circalittoral rock**.

JNCC have **High** confidence in presence and **High** confidence in extent of **Moderate energy circalittoral rock**. The rock feature is shown on a habitat map from the recent MB0120[32] survey with polygons

containing ground-truth samples, and presence of feature further supported by interpreted ground-truthing data that are well distributed across the mapped feature. JNCC note that following data analysis, Cefas stated "*The broad-scale habitat map was finally derived by combining the outputs of 'Random Forest classification' and 'Object Based Image Analysis'... bedrock outcrops and MDAC were both classified as BSH A4.2 Moderate Energy Rock*"[92]. The hard Methane Derived Authigenic Carbonate (**MDAC**) habitat (rather than bedrock) is already afforded protection by the cSAC/SCI 'Croker Carbonate Slabs'[93] and therefore JNCC excluded it from the 2014 assessment, leaving just an area of rock towards the east of the site to be assessed as a potential MCZ feature. Note that the 2008 05-RV Cefas Endeavour Irish Sea Solan Bank survey[90] found evidence of hard substrate outside the boundary of the current cSAC/SCI that was described as 'low relief MDAC/soft circalittoral rock & Circalittoral coarse sediment'[94], supporting the recent survey's findings. The ground-truth data and the habitat map from the recent 2012 survey indicates that rock identified towards the eastern side of the site (together with a small patch in the central southern area) by the previously used BGS hard substrate layer is actually sediment. A thin sediment veneer of subtidal sand, mud, coarse sediment and mixed sediment may however be covering an underlying sub-surface rock layer.

JNCC have **High** confidence in presence and **High** confidence in extent of **Subtidal coarse sediment**, **Subtidal sand** and **Subtidal mixed sediments** following a review of the data available in 2014. Presence of the features is shown by a habitat map from survey with polygons containing ground-truth samples. The ground-truthed sample data are well distributed across the mapped extents of the features.

For the feature **Subtidal mud**, JNCC have **Moderate** confidence in its presence and **Low** confidence in its extent. Although there is a habitat map from survey showing mud polygons, there are only two ground-truthing points classified as mud and these do not fall within the mud polygons. JNCC therefore assigned **Moderate** confidence to the feature presence. While a feature with these data may be assigned Moderate confidence in extent following the Technical Protocol E[40], in this present case there has been extensive sampling within the site recording the presence of other sediment types, and the limited number of points that are present do not match the mapped extent (and due to the apparent small patchy distribution of this habitat), JNCC applied expert judgement to assign **Low** confidence in feature extent.

The habitat FOCI **Horse mussel beds** has been assigned **Low** confidence in presence and **Low** confidence in extent. The MB0120 site report[92] states "*No evidence of horse mussel (Modiolus modiolus) beds were found in either acoustic or ground-truth data (e.g. no signature in either the Multi-Beam Echo Sounder bathymetry or backscatter data that could be isolated as* Modiolus modiolus *reef, absence of any*

[92] North St Georges Channel rMCZ Site Summary report. Available at: http://randd.defra.gov.uk/Document.aspx?Document=11022_NorthStGeorgesChannelrMCZ_SummarySiteReport_V7.pdf
[93] Designated Offshore SACs and Candidate SACs. Available at: http://jncc.defra.gov.uk/page-4534
[94] Croker Carbonate Slabs SAC Selection Assessment Document. Available at: http://jncc.defra.gov.uk/pdf/CrokerCarbonateSlabs_SACSAD_v_5_0.pdf

*evidence of* Modiolus modiolus *beds in the video and still imagery and relatively few individuals present in any given Hamon grab sample).*" Largely historical samples (ranging from 1946 – 2006) across the site record *M. modiolus* individuals in a number of locations, however due to the survey techniques used (Van Veen grab/suction dredge) and the lack of any supporting sidescan sonar images and/or still/video imagery, JNCC cannot confirm whether these samples would constitute reef/beds. In addition, the data provided by the MB0116[31] contract only occurs outside of the site. JNCC therefore conclude that while the species does occur within the site we have **Low** confidence in whether beds are present and subsequently **Low** confidence in the feature's spatial extent.

For similar reasons to those stated above, JNCC question the presence of **Subtidal biogenic reefs** within the site, and note there no spatial extent for this feature has been provided due to low evidence. Given the uncertainties in the classification of 'beds' in the underlying data, JNCC applied expert judgement to assign **Low** confidence in presence and **Low** confidence in extent for **Subtidal biogenic reefs**. Note that the regional MCZ project refers to the presence of *Sabellaria spinulosa* and identify that "*Tube dwelling ross worms* Sabellaria spinulosa *have been recorded in two surveyed areas, over horse mussel shells and over the Croker Carbonate Slabs. However, it has been confirmed by JNCC that there is insufficient evidence to confirm whether these localised occurrences of* Sabellaria spinulosa *are in dense enough aggregations to constitute a biogenic reef*."[86]

While the species FOCI **Ocean quahog (*Arctica islandica*)** has been recorded at two locations in the south of the site from Cefas samples (1998, 4m beam trawl survey), no other records have been found to further indicate the presence of the species in the site. Due to low stakeholder confidence in the quality of these two available data points, the species FOCI was not recommended for the site by the regional MCZ project. The 2012 Cefas dedicated survey did not record any individual *Arctica islandica* and JNCC therefore does not recommend this species FOCI as a feature of the rMCZ.

The Geomorphological features **Drumlins** found in the north of the site were allocated **High** confidence in presence and **High** confidence in extent. High detail full coverage multibeam records[89] show these distinct features formed within the substrate over a defined area. JNCC note that the more recent (coarser scale) bathymetry covering the whole site from MB0120[32] indicates the Drumlins may extend slightly further into the site boundary area than the extent of those indicated from the original multibeam. The primary area of presence appears to be well mapped however, with all further features likely lying within the site boundary.

### 6.11.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of our confidence in feature condition and the General Management Approach (**GMA**) proposed are presented below in Table 58 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 58: Summary of JNCC's conservation advice for Features in the North St Georges Channel rMCZ**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **North St Georges Channel rMCZ** (ISCZ 03) | **High energy circalittoral rock** (A4.1) | **Not Assessed** (Low) | **Not Assessed** (Maintain) |
| | **Moderate energy circalittoral rock** (A4.2) | **Low** (Low) | **Maintain** (Maintain) |
| | **Subtidal coarse sediment** (A5.1) | **Low** (Low) | **Recover** (Maintain) |
| | **Subtidal sand** (A5.2) | **Low** (Low) | **Maintain** (Recover) |
| | **Subtidal mud*** (A5.3) | **Low** (*) | **Maintain** (*) |
| | **Subtidal mixed sediments** (A5.4) | **Low** (Low) | **Recover** (Maintain) |
| | **Subtidal biogenic reefs** (A5.6) | **Not Assessed** (Low) | **Not Assessed** (Recover) |
| | **Horse mussel beds (*Modiolus modiolus*)** | **Not Assessed** (Low) | **Not Assessed** (Recover) |
| | **Drumlins** | **High** (Low) | **Maintain** (Maintain) |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

During our 2013 assessment of the recommendations from the Irish Sea Conservation Zone regional MCZ project, JNCC proposed **Recover** GMAs for **Subtidal sand, Subtidal biogenic reefs** and the habitat FOCI **Horse mussel beds (*Modiolus modiolus*)**. **Maintain** objectives were advised for **High energy circalittoral rock**, **Moderate energy circalittoral rock**, **Subtidal coarse sediment**, **Subtidal mixed sediment** and the geomorphological feature **Drumlins** within North St Georges Channel rMCZ.

After reviewing all currently available data, our advice in 2014 remains unchanged for **Moderate energy circalittoral rock**, **Drumlins** and **Subtidal sand**. We advise a **Maintain** GMA for the recently added feature **Subtidal mud** because it also not considered moderately or highly vulnerable to any current pressures within the site.

JNCC advises Recover GMAs for **Subtidal coarse sediment** and **Subtidal mixed sediments**. These features are considered to be moderately or highly vulnerable to pressures associated with fishing activities, which evidence indicates are occurring within the site over their mapped extent; see site's feature Vulnerability Assessments in Annex 7 Table 158 for more detail.

JNCC is not providing any assessment for the **Subtidal biogenic reefs** and **Horse mussel beds (*Modiolus modiolus*)** because there is no evidence available to support the presence of a reef feature in the site.

### 6.11.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. Consequently, JNCC has **Low** confidence in the condition of the broad-scale habitats **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mud** and **Subtidal mixed sediments**. We have **High** confidence in the condition of the geomorphological feature **Drumlins** due to their clearly known extent and their low vulnerability to current pressures, which would be highly unlikely to affect the integrity of the feature.

### 6.11.4 Feature risk

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7.

**Table 59: North St Georges Channel MCZ Feature Risk Assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| North St Georges Channel rMCZ (ISCZ 03) | **High energy circalittoral rock** (A4.1) | Feature not assessed | |
| | **Moderate energy circalittoral rock** (A4.2) | **Low**<br>Feature is **not moderately or highly vulnerable** to any pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Subtidal coarse sediment** (A5.1) | **Moderate**<br>Feature is **moderately vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal sand** (A5.2) | **Low**<br>Feature is **not moderately or highly vulnerable** to any pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Subtidal mud** (A5.3) | **Low**<br>Feature is **not moderately or highly vulnerable** to any pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal mixed sediments** (A5.4) | **Moderate**<br>Feature is **moderately vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| | **Subtidal biogenic reefs** (A5.6) | Feature not assessed | |
| | **Horse mussel beds (*Modiolus modiolus*)** | Feature not assessed | |
| | **Drumlins** | Feature not assessed because it is a geomorphological feature | |

### 6.11.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site as a whole have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence and extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 60, Table 61 and Table 62 below.

***Feature assessment***

**Table 60: North St Georges Channel MCZ feature data sufficiency assessment**

| Site (Code) | Feature (Code) | Q1a. Confidence score of at least moderate for feature presence? | Q1b. Is 1a based only on parent habitat being present? | Q1c. Confidence score of at least moderate for extent/ distribution? | Outcome from Question 1 assessment |
|---|---|---|---|---|---|
| **North St Georges Channel rMCZ** (ISCZ 03) | **Moderate energy circalittoral rock** (A4.2) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal coarse sediment** (A5.1) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal sand** (A5.2) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal mud** (A5.3) | **Yes** (Moderate confidence) | **No** | **No** (Low confidence) | Move to Question 2 of the feature assessment (see Table 61). |
| | **Subtidal mixed sediments** (A5.4) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Drumlins** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |

## Table 61: North St Georges Channel MCZ assessment of additional conservation/ecological considerations

| Site (Code) | Feature (Code) | Q2a: Does the feature fill a 'big gap' in the network AND have confidence score of at least moderate for feature presence? | Q2b: Is the feature at high risk of damage? | Outcome from Question 2 assessment |
|---|---|---|---|---|
| **North St Georges Channel rMCZ** (ISCZ 03) | **Subtidal mud** (A5.3) | **Maybe** – This site could help to increase the amount of Subtidal mud afforded protection within the region, however it is a very small patch and there are better options for increasing the amount of this feature afforded protection within other sites in the region. Although with currently only 0.8% of known area afforded protection several sites will be needed to afford protection to a recommended minimum of 10% of known area. | **No** - This feature is currently at Low risk of damage and there is Moderate risk of damage in the future | **Feature should be further considered** by Defra because it could possibly help fill a big gap in the network. However JNCC note that the feature is not at high risk of damage and there is only a small patch with some conflicting data points supporting the feature and so there may be better options for representing this feature within the region. |

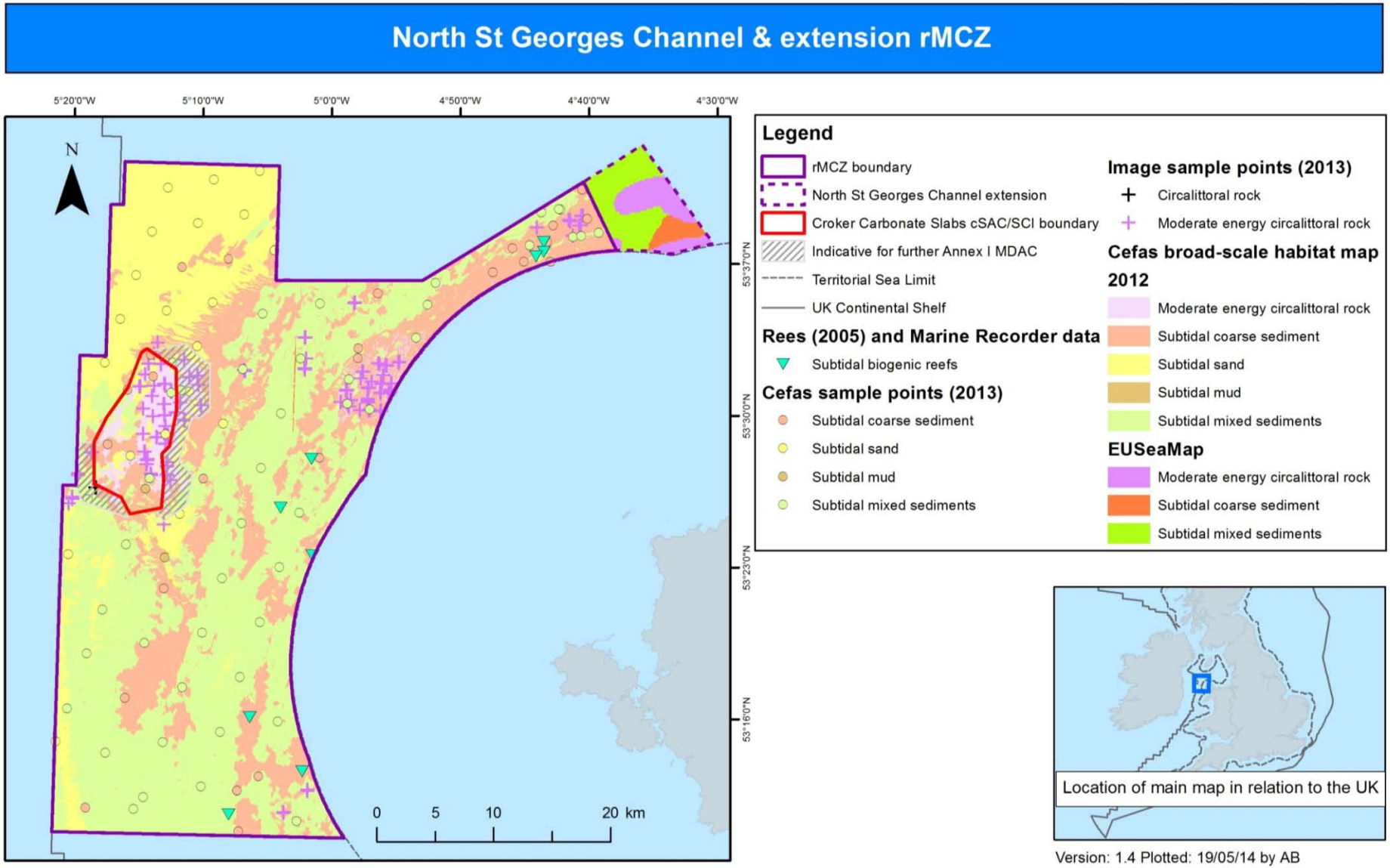
### *Site level assessment*

## Table 62: North St Georges Channel MCZ site level assessment

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **No** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Greater than 75%** |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Does this site contribute to filling a big gap in the network?**<br>**Yes**. This site would fill a spatial gap for Circalittoral rock within the region. This site is also one of two options to provide a replicate in the region for **Subtidal mixed sediments in 75-200m water depth**. This site is also one of three options to provide a replicate in the region for **Subtidal sand in 75-200m depth**. There is already one replicate afforded protection for each of these three features within the existing network from information made available to the 'Big Gaps' assessment. These replicates are within potential Scottish Nature Conservation MPAs which for the purpose of the 'Big Gaps' assessment were considered to be 'designated sites'. See Section 5.5 for more detail. If any of these sites, or specific features within those sites, are not designated by Scottish Government, then there may be additional gaps that arise within the wider network in the Irish Sea. The site also provides one of three options to provide a replicate in the region for **Moderate energy circalittoral rock in 75-200m depth**. The site can also contribute to increasing the percentage of **Moderate energy circalittoral rock**, **Subtidal coarse sediment** and **Subtidal mud** afforded protection within the region, however it is a very small patch of subtidal mud and there are better options for increasing the amount of this feature afforded protection within other sites in the region. Although with currently only 0.8% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% of known area.<br><br>**Representativity** (seeking two examples of each EUNIS Level 3 habitat within each energy category (low, moderate and high) and depth zone (0-10m, 10-75m, 75-200m, 200m+) and two examples of each FOCI within each CP2 region):<br>- This site is one of three options within the Tranche Two sites to provide a |

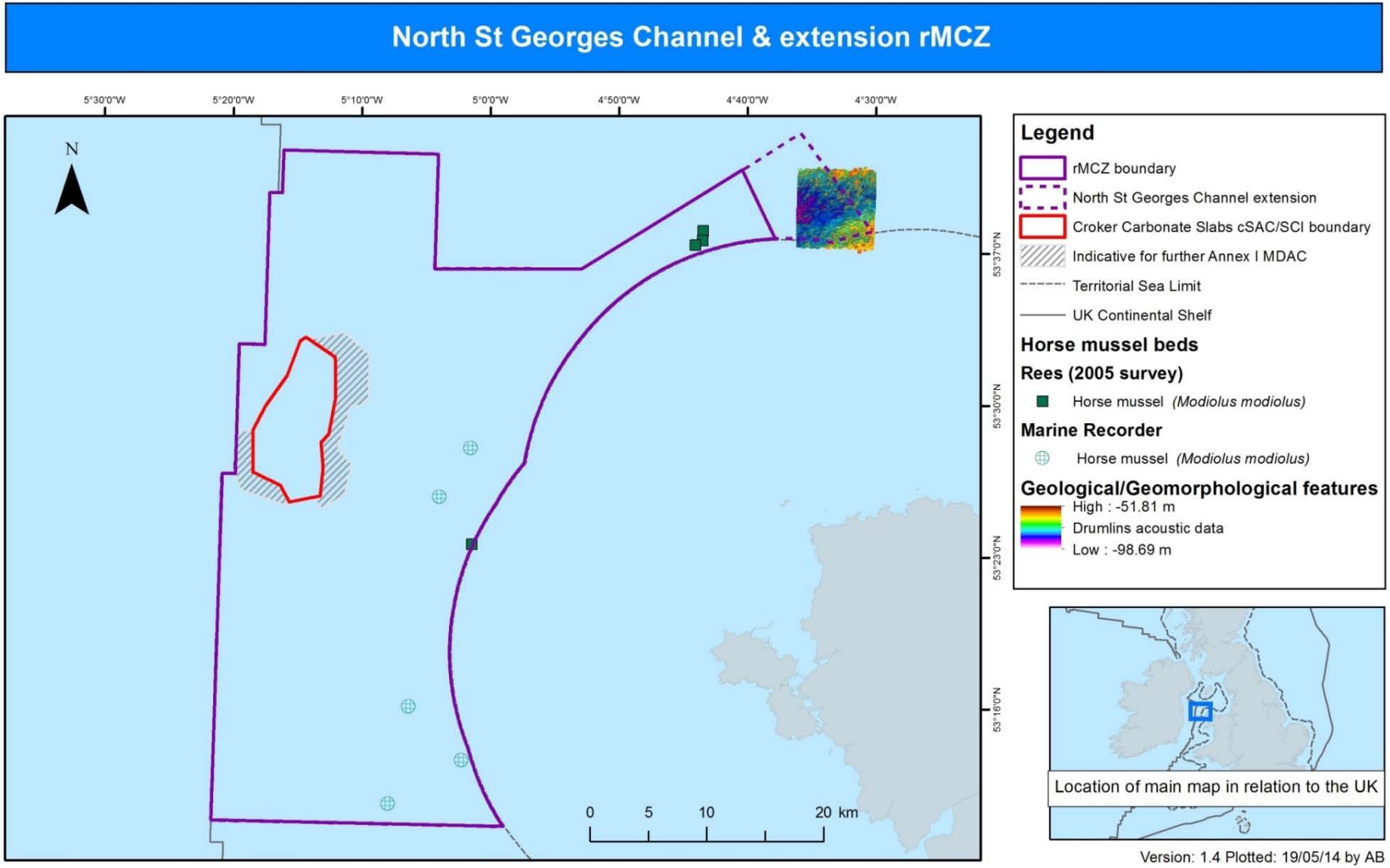
| | |
|---|---|
| | replicate in the region for **Moderate energy circalittoral rock in 75-200m depth**. There is currently one site that affords protection to this feature in this depth/energy category within the region in the existing network which is The Maidens SAC. The other option would be Mid St Georges Channel rMCZ and South Rigg rMCZ.<br>- The site is one of three options within the Tranche Two sites to provide a replicate in the region for **Subtidal sand in 75-200m depth**. There is currently one site that affords protection to this feature in this depth/energy category within the region in the existing network which is Clyde Sea Sill potential Nature Conservation MPA (for the purpose of the 'Big Gaps' assessment pNCMPAs were considered to be 'designated sites'. See Section 5.5 for more detail)[87]. The other option would be Mid St Georges Channel rMCZ and South Rigg rMCZ.<br>- The site is one of three options within the Tranche Two sites to provide a replicate in the region for **Subtidal mixed sediments in 75-200m water depth**. There is currently one site that affords protection to this feature in this depth/energy category within the region in the existing network which is Upper Loch Fyne and Loch Goil potential Nature Conservation MPA (for the purpose of the 'Big Gaps' assessment pNCMPAs were considered to be 'designated sites'. See Section 5.5 for more detail). The other options would be Mid St Georges Channel rMCZ and South Rigg rMCZ.<br><br>**Adequacy** (seeking protection of at least 10% of known area of each EUNIS Level 3 habitat within each CP2 region):<br>- This site will help to increase the amount of **Moderate energy circalittoral rock** afforded protection within the region (currently 5.2% of the known area protected in the existing network).<br>- This site will help to increase the amount of **Subtidal coarse sediment** afforded protection within the region (currently 9.1% of the known area protected in the existing network).<br>- This site will help to increase the amount of **Subtidal mud** afforded protection within the region (currently 0.8% of the known area protected in the existing network), however it is a very small patch and there may be better options for increasing the amount of this feature afforded protection within other sites in the region.. Although with currently only 0.8% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% of known area.<br><br>**Connectivity** (ensuring that sites affording protection to the same habitat at EUNIS Level 2 are not further than 80km apart):<br>- This site could contribute to filling a spatial gap for **Circalittoral rock** in the region. |

### 6.11.6 Feature maps




UK Territorial Sea Limit © Crown copyright and UKHO. All rights reserved. The exact limits of the UK Continental shelf are set out in orders made under section 1 (7) of the Continental Shelf Act 1964 (© Crown Copyright). Continental Shelf (Designation of Areas) Order 2013. Combining source layers from UKHO. © UKHO © JNCC.
Not to be used for navigation. © JNCC 05/2014

**Figure 25: Map of broad-scale habitats in North St Georges Channel rMCZ**




UK Territorial Sea Limit © Crown copyright and UKHO. All rights reserved. The exact limits of the UK Continental shelf are set out in orders made under section 1 (7) of the Continental Shelf Act 1964 (© Crown Copyright). Continental Shelf (Designation of Areas) Order 2013. Combining source layers from UKHO. © UKHO © JNCC.
Rees 2005 data. Marine Recorder data. Not to be used for navigation. © JNCC 05/2014

**Figure 26: Map of species Features of Conservation Interest and geological features in North St Georges Channel rMCZ**

## 6.12 North-West of Jones Bank rMCZ

North West of Jones Bank rMCZ was recommended by the Finding Sanctuary regional MCZ project[72] for the broad-scale habitats **Subtidal coarse sediment**, **Subtidal sand** and **Subtidal mud**. Recent data have confirmed the presence of the features **Subtidal mixed sediments**, and the habitat Features of Conservation Importance (**FOCI**) **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities** within the site.

### 6.12.1 Assessment of feature presence and extent

The 2014 assessment was conducted using a habitat map based on acoustic data from Gardline and multiple ground-truthing data from an MB0120[32] survey that covered only 77% of the site, although still provides the best available evidence for the feature presence and feature extent. JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce a new confidence assessment in feature presence and feature extent, utilising all available data for the site (see Section 5.1). A summary of the assessments is presented below in Table 63. The data and full assessments can be viewed in full in Annex 4, Table 131 and Table 132.

**Table 63: North West of Jones Bank rMCZ Evidence Assessment Summary**

| Site (Code) | Feature (Code) | Confidence in feature presence (previous assessment scores) | Rationale for confidence in feature presence | Confidence in feature extent (previous assessment scores) | Rationale for confidence in feature extent |
|---|---|---|---|---|---|
| **North-West of Jones Bank rMCZ** (FS04) | **Subtidal coarse sediment** (A5.1) | **High** (Low) | A habitat map from survey with three supporting ground-truthing samples demonstrate the presence of Subtidal coarse sediment in the site. | **High** (Low) | A habitat map from survey with ground-truthing sample data demonstrate the extent of Subtidal coarse sediment in the site. |
| | **Subtidal sand** (A5.2) | **High** (Low) | A habitat map from survey with five ground-truthing samples demonstrate the presence of Subtidal sand in the site. | **High** (Low) | A habitat map from survey with ground-truth sample data demonstrate the extent of Subtidal sand in the site. |
| | **Subtidal mud** (A5.3) | **High** (Moderate) | A habitat map from survey with 49 ground samples demonstrate the presence of Subtidal mud in the site. | **High** (Low) | A habitat map from survey with ground-truthing sample data demonstrate the extent of Subtidal mud in the site. |
| | **Subtidal mixed sediments*** (A5.4) | **High** (*) | A habitat map from survey with three supporting ground-truthing samples demonstrate the presence of Mud habitats in deep water in the site. | **High** (*) | A habitat map from survey with ground-truthing sample data demonstrate the extent of Mud habitats in deep water in the site. |
| | **Mud habitats in deep water*** | **High** (*) | There are 112 ground-truthing samples which intersect with the extent of Subtidal mud and demonstrate the presence of Mud habitats in deep water. | **High** (*) | A large number of sample stations which identify Sea-pen and burrowing megafauna communities, the high confidence in the presence and extent of Subtidal mud and there being a low energy environments, are all |

| **Site** (Code) | **Feature** (Code) | **Confidence in feature presence** (previous assessment scores) | **Rationale for confidence in feature presence** | **Confidence in feature extent** (previous assessment scores) | **Rationale for confidence in feature extent** |
|---|---|---|---|---|---|
| | | | | | indicators for this habitat and demonstrate the extent of this feature in the site. |
| | **Sea-pen and burrowing megafauna communities*** | **High** (*) | There are112 ground-truthing samples which intersect with the extent of Subtidal mud extent and demonstrate the presence of Sea-pen and burrowing megafauna communities. | **High** (*) | A large number of sample stations which identify Sea-pen and burrowing megafauna communities, the high confidence in presence and extent of. Subtidal mud are indicators for the habitat and demonstrate the extent of this feature in the site. |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

A survey conducted by Gardline in 2012 collected acoustic multibeam and backscatter data for 77% of the site. This survey along with an MB0120[32] survey, also in 2012, collected ground-truthing data in the form of grab samples, video and still images. These data were used to derive a broad-scale habitat map only for the 77% of site acoustically surveyed. A habitat map based on manual interpolation of point sample data using expert judgement was produced for the remaining 23% area where acoustic data were absent.

**Subtidal coarse sediment**, **Subtidal sand** and **Subtidal mud** have sample points verifying their presence and extent of the feature, with the sample classifications broadly matching the UKSeaMap[43] modelled distribution of these habitats within the site. **Subtidal mixed sediments** is also now found to be present with sample points verifying its presence and extent in the site. JNCC now have **High** confidence in feature presence and **High** confidence in feature extent for all broad-scale habitat features, in accordance with Technical Protocol E[40].

Following analysis of the data, two habitat FOCI have also been identified: **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities**. JNCC has **High** confidence in their presence and extent using the evidence provided through the biological data from all the video tow sites, being observed in 112 of the 164 still images collected within the site. **Mud habitats in deep water** has similarly been assigned **High** confidence for presence and extent using the same data, which illustrated the presence of fauna such as *Nephrops norvegicus* and sea-pens, which are indicative of a low-energy mud habitat. Both habitat FOCI cover the same extent as **Subtidal mud**.

Should North-West Jones Bank rMCZ be designated by Defra, JNCC advise that **Mud habitats in deep water** should not be designated feature of a site if **Subtidal mud** and **Sea-pen and burrowing megafauna communities** features are designated. Figure 27 clearly shows these three habitats share the same spatial extent. JNCC consider there is limited extra conservation value in designating **Mud habitats in deep water** where it is afforded protection by its parent and component habitats. Please refer to Annex 6 for more information.

### 6.12.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of our confidence in feature condition and the General Management Approach (**GMA**) proposed are presented below in Table 64 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 64: Summary of JNCC's conservation advice for features in North-West of Jones Bank rMCZ**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **North-West of Jones Bank rMCZ** (FS04) | **Subtidal coarse sediment** (A5.1) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal sand** (A5.2) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal mud** (A5.3) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal mixed sediments*** (A5.4) | **Low** (*) | **Recover** (*) |
| | **Mud habitats in deep water*** | **Low** (*) | **Recover** (*) |
| | **Sea-pen and burrowing megafauna communities*** | **Low** (*) | **Recover** (*) |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

JNCC proposed Recover GMAs in for **Subtidal coarse sediment, Subtidal sand Subtidal mud** our 2012 advice[24]**.** Following a review of currently available evidence, our advice remains unchanged in 2014 due to the Moderate to High vulnerabilities of these features to the pressures associated with fishing activities that occur across this site.

JNCC have assessed the vulnerability of the three recently identified features within the site **Subtidal mixed sediments**, **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities**. We propose a **Recover** GMA for each of these additional features. These features are considered moderately or highly vulnerable to the pressures associates with benthic trawling; see the site's feature Vulnerability Assessments in Annex 7 Table 159 for more detail.

### 6.12.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. Consequently, JNCC has **Low** confidence in the condition of the six features, including two of those recently identified, within the site. **Mud habitats in deep water** has been expertly judged as having **Low** confidence in feature condition due to the reasons explained in Section 5.3 on the feature condition methodology.

### 6.12.4 Feature risk

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7.

**Table 65: North-West of Jones Bank rMCZ feature risk assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| North-West of Jones Bank rMCZ (FS04) | **Subtidal coarse sediment** (A5.1) | **High** Feature is **highly vulnerable** to one/more pressures. | **Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal sand** (A5.2) | **High** Feature is **highly vulnerable** to one/more pressures. | **High** Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Subtidal mud** (A5.3) | **High** Feature is **highly vulnerable** to one/more pressures. | **Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal mixed sediments** (A5.4) | **High** Feature is **highly vulnerable** to one/more pressures. | **Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Mud habitats in deep water** | **High** Feature is **highly vulnerable** to one/more pressures. | **Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Sea-pen and burrowing megafauna communities** | **High** Feature is **highly vulnerable** to one/more pressures. | **High** Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |

### 6.12.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site as whole have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence and extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 66 and Table 67 below.

### *Feature assessment*

**Table 66: North-West of Jones Bank rMCZ feature data sufficiency assessment**

| Site (Code) | Feature (Code) | Q1a. Confidence score of at least moderate for feature presence? | Q1b. Is 1a based only on parent habitat being present? | Q1c. Confidence score of at least moderate for extent/ distribution? | Outcome from Question 1 assessment |
|---|---|---|---|---|---|
| North-West of Jones Bank rMCZ (FS04) | **Subtidal coarse sediment** (A5.1) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal sand** (A5.2) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal mud** (A5.3) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal mixed sediments** (A5.4) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Mud habitats in deep water** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature, however JNCC advise that this feature is not designated within this site (see Annex 6).** |
| | **Sea-pen and burrowing megafauna communities** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |

As the data for these features meet the criteria set by Question 1 and support the case for designation of these features, there is no requirement for Question 2 of the feature assessment to be considered as set out in the paper '*MCZ Levels of Evidence – Advice on when data supports a feature/site for designation from a scientific, evidence-based perspective*'[68] - see Section 5.5 of this advice.

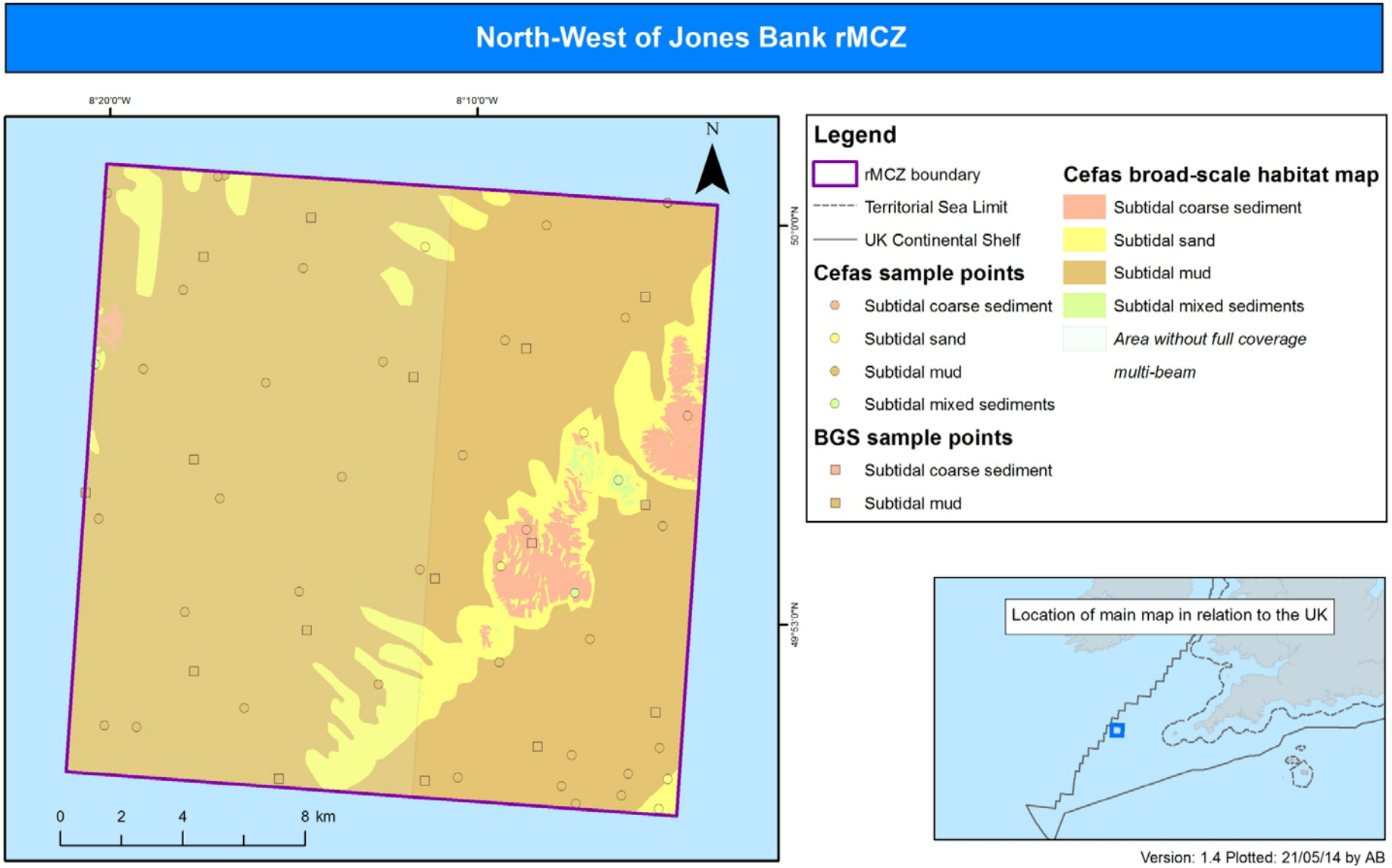
### *Site level assessment*

**Table 67: North-West of Jones Bank rMCZ Site level assessment**

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **No** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Greater than 75%** |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Does this site contribute to filling a big gap in the network?**<br>**Yes**. The site is one of six options within the Tranche Two sites to fill a gap in the region for **Mud habitats in deep water** which is currently not afforded protection within the region in the existing network. This site is also one of two options to be a replicate for **Sea-pen and burrowing megafauna communities** and one of seven options to provide a replicate for **Subtidal mud in a low energy environment**. The site could contribute to significantly increasing the percentage of **Subtidal mud** afforded protection within the region (currently only 2.2% of area) as well as increasing the percentage of **Subtidal coarse sediment** and **Subtidal sand** afforded protection within the region. There are several other |

| | |
|---|---|
| | sites that could also increase the protection of subtidal mud within the network although with currently only 2.2% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% of the known area.<br><br>**Representativity** (seeking two examples of each EUNIS Level 3 habitat within each energy category (low, moderate and high) and depth zone (0-10m, 10-75m, 75-200m, 200m+) and two examples of each FOCI within each CP2 region):<br>- This site is one of seven options within the Tranche Two sites to provide a replicate in the region for **Subtidal mud in a low energy environment**. There is currently one site that affords protection to this feature in this depth/energy category within the region in the existing network which is the Fal and Helford SAC. The other options would be Celtic Deep rMCZ, East of Celtic Deep rMCZ, East of Haig Fras MCZ, Greater Haig Fras rMCZ, South of Celtic Deep rMCZ and South-West Deeps (West) MCZ (although for South of Celtic Deep rMCZ we have recommended that the data does not justify designation).<br>- The site is one of six options within the Tranche Two sites to fill a gap in the region for **Mud habitats in deep water**. There are currently no sites that afford protection to this feature within the region in the existing network. The other options for this feature include Celtic Deep rMCZ, East of Celtic Deep rMCZ, East of Haig Fras MCZ, Greater Haig Fras rMCZ, South of Celtic Deep rMCZ.<br>- This site is one of two options within the Tranche Two sites to provide a replicate in the region for **Sea-pen and burrowing megafauna communities**. There is currently one site that affords protection to this feature within the region in the existing network which is Plymouth Sound and Estuaries SAC. The other site option would be Celtic Deep rMCZ.<br><br>**Adequacy** (seeking protection of at least 10% of known area of each EUNIS Level 3 habitat within each CP2 region):<br>- This site will help to increase the amount of **Subtidal coarse sediment** afforded protection within the region (currently 3.2% of the known area protected in the existing network).<br>- This site will help to increase the amount of **Subtidal sand** afforded protection within the region (currently 7.3% of the known area protected in the existing network).<br>- This site will significantly help to increase the amount of **Subtidal mud** afforded protection within the region (currently 2.2% of the known area protected in the existing network). There are several other sites that could also increase the protection of subtidal mud within the network, although with currently only 2.2% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% by area. |

### 6.12.6 Feature maps




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BGS sample points: Licence JNCC IPR/139-2DY, British Geological Survey ©NERC. Not to be used for navigation. © JNCC 05/2014

**Figure 27: Map of broad-scale habitats in North-West of Jones Bank rMCZ**

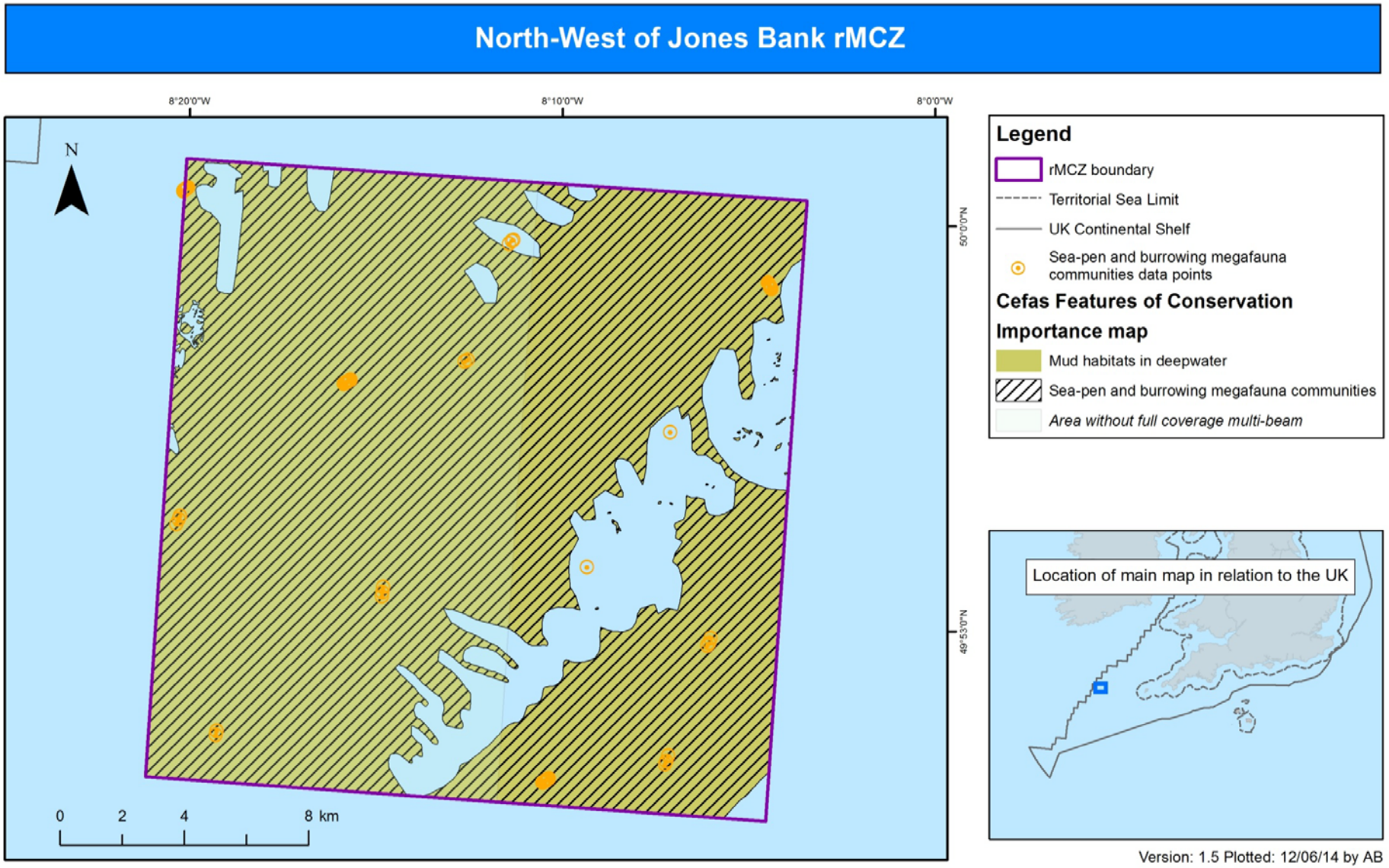



**Figure 28: Map of habitat Features of Conservation Importance in North-West of Jones Bank rMCZ**

## 6.13 Offshore Brighton rMCZ

Offshore Brighton was recommended by the Balanced Seas regional MCZ project[95] for the broad-scale habitats **High energy circalittoral rock**, **Moderate energy circalittoral rock**, and **Subtidal mixed sediments**, the habitat Feature of Conservation Interest (**FOCI**) **Ross Worm (*Sabellaria spinulosa*) reefs** and the FOCI **Subtidal sands and gravels**.

The site was surveyed as part of the MB0120[32] work in 2012. The survey collected grabs, video tow and camera still data, and opportunistic acoustic data within the site. An additional feature was identified within the site by the survey: the broad-scale habitat **Subtidal coarse sediment**. Data collated under the MB0116[31] project suggested the high-mobility species FOCI **Undulate Ray (*Raja undulata*)** was present within the site.

### 6.13.1 Assessment of feature presence and extent

JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce a new confidence assessment in feature presence and feature extent, utilising all available data for the site (see Section 5.1). A summary of the assessments is presented below in Table 68. The data and assessments can be viewed in full in Annex 4, Table 133 and Table 134.

**Table 68: Offshore Brighton rMCZ evidence assessment summary**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature presence** (previous assessment scores) | **Rationale for confidence in feature presence** | **Confidence in feature extent** (previous assessment scores) | **Rationale for confidence in feature extent** |
|---|---|---|---|---|---|
| **Offshore Brighton rMCZ** (BS 14) | **High energy circalittoral rock** (A4.1) | **Moderate** (Low) | There are three ground-truthing points and six records for the parent feature Circalittoral rock that potentially demonstrate the presence of High energy circalittoral rock in the site. | **Low** (Low) | Ground-truthing points are clustered in the north west of the site. None of these points coincides with the predicted extent of the feature in the modelled map. As these data are yet to go through a formal QA process, expert judgement has been applied to assign Low confidence in feature extent. |
| | **Moderate energy circalittoral rock** (A4.2) | **Moderate** (Low) | There are six records of the parent feature Circalittoral rock potentially demonstrating the presence of Moderate energy circalittoral rock in the site. | **Low** (Low) | Expert judgement has been applied to assign Low confidence, due to very limited number of video tows identifying the presence of the feature compared to the size of the site. There is also no confirmed presence of the within the predicted map extent of the feature. |

[95] Balanced Seas regional MCZ project website. Available at: http://webarchive.nationalarchives.gov.uk/20120502155448/http://www.balancedseas.org/

| Site (Code) | Feature (Code) | Confidence in feature presence (previous assessment scores) | Rationale for confidence in feature presence | Confidence in feature extent (previous assessment scores) | Rationale for confidence in feature extent |
|---|---|---|---|---|---|
| | **Subtidal coarse sediment*** (A5.1) | **High** (*) | There are 35 interpreted ground-truthing points demonstrating the presence of Subtidal coarse sediment in the site. | **Moderate** (*) | The distribution of point data demonstrates the extent of Subtidal coarse sediment in the site. |
| | **Subtidal mixed sediments** (A5.4) | **High** (Moderate) | There are 34 interpreted ground-truthing data demonstrating the presence of Subtidal mixed sediments in the site. | **Moderate** (Moderate) | The distribution of point data demonstrates the extent of Subtidal mixed sediments in the site. |
| | **Ross worm (*Sabellaria* spinulosa) reefs** | **Low** (Low) | Recent survey identified populations of the species *Sabellaria spinulosa* within the site, but there is insufficient evidence to confirm the presence of a reef. Given the uncertainties in the feature classification in the underlying data, expert judgement has been applied to assign Low confidence to the presence of reef. | **Low** (Not Assessed) | There is a lack of information confirming the presence of any reef feature within the site, Low confidence is assigned for Feature extent. |
| | **Undulate ray (*Raja undulata*)** | **Moderate** (*) | There are 20 samples identified over a 30 year period, with three samples within the past six years demonstrating presence of Undulate ray in the site. | **Moderate** (*) | There are 20 samples identified over a 30 year period, with three samples within the past six years which demonstrate the distribution of Undulate ray in the site. |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

**High energy circalittoral rock** was originally recommended as a feature of the site by the regional MCZ project based on the modelled habitat map from 2011[96] from the Marine Aggregate Levy Sustainability Fund (**MALSF**) synthesis study in the central and eastern English Channel. This habitat map had been created through the analysis of previous surveys including the Eastern English Channel Regional Environmental Characterisation (**REC**) in 2006[97] and the South Coast REC in 2007[96].

During the MB0120[32] survey in 2012, a video transect identified the presence of high energy circalittoral rock feature in the north-west of the site. This location does not coincide with the modelled extent of the feature by the REC study. Within the MB0120 data, there are 15 still images and two sections of video identifying the rock feature; however, Section 5.1 explains why this image data are only considered to be two occurrences of the feature. These data points were recorded in the north west and the feature was not identified at any other location within the site. There is an additional record of this rock feature identified

[96] The MALSF synthesis study in the central and eastern English Channel. Available from: http://www.cefas.defra.gov.uk/media/462598/malsf_synthesis_report_160311_hi_res.pdf

[97] Sea bed morphology modelling for habitat mapping in Eastern English Channel and Marine ALSF Regional Environment Characterisation (REC) studies. Available from: http://www.cefas.defra.gov.uk/media/461068/mepf%2004-01%20bgs%20xyz%20%20final%20report.pdf

during a video tow undertaken during a 2006 Cefas survey of the central English Channel. This earlier record was located to the south of the modelled extent of the feature, towards the west of the site. There are also six records of the parent feature **Circalittoral rock** from video tows collected opportunistically as part of MB0120[32]. To date (May 2014) these records are yet be formally processed and the results Quality Assured, however in the interim, JNCC viewed the video to establish the validity of these six records at a parent feature level. Based on the three occurrences of the feature's presence, together with the records of the parent feature, JNCC have a **Moderate** confidence in the feature's presence within the site. JNCC noted that the samples collected opportunistically coincide with the modelled extent of the feature in the north west of the site.

The habitat map from the MALSF study identifies rock that is covered by a thin veneer of sediment in some areas of the modelled extent of the rock feature. JNCC has only limited multibeam acoustic data for this region from opportunistic transit tows[96], and cannot therefore reliably indicate the presence of any hard substrata. Consequently, JNCC used expert judgement to assign **Low** confidence extent of the feature based on the limited spatial extent of the ground-truthing information.

**Moderate energy circalittoral rock** was also identified as being present based on the modelled habitat map from the MALSF study. However, the recent MB0120[32] survey did not identify this feature as present within the sample data collected but did identify the presence of six occurrences of the parent feature **Circalittoral rock**, as discussed above. These records of the parent feature being present, provide sufficient information for JNCC to have **Moderate** confidence in feature presence within the site. While the Technical Protocol E[40] allows parent feature records to be used to assess the extent of the feature, in this case JNCC applied expert judgement to assign **Low** confidence in extent due to the very low number of sample points and the overall large size of the site.

This central area of the English Channel has proved a difficult area to map the seabed due to the difficulty in assigning representative broad-scale habitats at EUNIS level 3. When looking at the products from the MALSF South Coast Synthesis study displayed at EUNIS level 4, the areas where **High** and **Moderate energy circalittoral rock** have been recommended by the regional project are classified as being largely covered with a thin veneer of sediment, which is liable to shift in strong currents. BGS identify the vast majority of the site within the rock and hard substrate layer that they produced as part of the MB0103[83] work. There are BGS core samples in the north and north-west of the site that identify subsurface chalk covered by a veneer of sediment. However, the recent MB0120[32] survey of the site did not record the presence of **Circalittoral rock** within the mapped extent of either area where the EUNIS level 4 habitat map identifies exposed rock or areas covered by thin veneer had been mapped. The MB0120[32] survey experienced weather downtime during the ground-truthing phase of the survey, which has left the mapped extent of **Moderate energy circalittoral rock** with fewer samples than other regions of the site. While the ground-truthing techniques used during this survey would establish areas where any rock was outcropping,

it would require further extensive surveying to establish the biological nature of the habitat at the surface within this area

JNCC had assigned a Moderate confidence in presence and extent of **Subtidal mixed sediments** in the previous assessment for our 2012 advice. The feature is present in the Eastern English Channel REC[97] data. The MB0120 survey identified the feature in 17 grab samples, which gives JNCC **High** confidence in its presence within the site. The spatial distribution of the sample data suggests the feature is distributed across the site with the greatest concentration of sample points being found in the east. Using the distribution of the sample data - noting some point records are interspersed with records or other features and the data are clustered in some areas, JNCC has **Moderate** confidence in our understanding of the extent of this feature throughout the whole site.

**Subtidal coarse sediment** was identified in the site during the MB0120[32] survey in 2012 and JNCC have not previously provided any advice on this feature this site. Grab samples identify the feature at 19 locations within the site, with still images for camera and video tracks providing further information to indicate the presence of the feature. These ground-truthing data available give JNCC to **High** confidence the feature is present in the site. The samples are distributed across the site, with some neighbouring samples in the north and centre of the site sharing the same feature classification. The distribution and spread of the data points give JNCC to **Moderate** confidence in our understanding of the feature's extent throughout the whole site.

**Ross worm (*Sabellaria spinulosa*) reefs** was recommended as a feature of the site by the Balanced Seas regional MCZ project. JNCC are unable to confirm whether these samples would meet the criteria to constitute a reef. The recent 2012 survey of the site identified populations of *Sabellaria spinulosa* in three video tows and 15 grabs samples, although there is no visual evidence of any reef occurring within these [video] samples. Given the uncertainties in the feature's identification in the underlying data, JNCC used expert judgement to assign **Low** confidence for presence and **Low** confidence for extent.

The high-mobility species FOCI **Undulate ray (*Raja undulata*)** has been recorded on 20 occasions in Ifremer surveys between 1988 and 2008 (data received through MB0116[31]). The three most recent samples were collected in 2008, although in light of the number of samples (fewer than five less that 6 years old) JNCC only have **Moderate** confidence for feature presence and distribution.

### 6.13.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of our confidence in feature condition and the General Management Approach (**GMA**) proposed are presented below in Table 69 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 69: Summary of JNCC's conservation advice for features in Offshore Brighton rMCZ**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **Offshore Brighton rMCZ** (BS 14) | **High energy circalittoral rock** (A4.1) | **Low** (Low) | **Recover** (Recover) |
| | **Moderate energy circalittoral rock** (A4.2) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal coarse sediment*** (A5.1) | **Low** (*) | **Recover** (*) |
| | **Subtidal mixed sediments** (A5.4) | **Low** (Low) | **Recover** (Recover) |
| | **Ross worm (*Sabellaria spinulosa*) reefs** | **Not Assessed** (Low) | **Not Assessed** (Recover) |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

The regional MCZ project originally recommended a **Recover** GMA for the three broad-scale habitat features **High** and **Moderate energy circalittoral rock** and **Subtidal mixed sediments** and for the habitat FOCI **Ross Worm (*Sabellaria spinulosa*) reefs**. In our 2012 advice[24], JNCC concurred with those proposed GMAs. Following further assessment on all proposed features, JNCC proposes that **Recover** remains appropriate for all features (except **Ross worm (*Sabellaria spinulosa*) reefs**) in 2014, including the recently identified feature **Subtidal coarse sediment.** JNCC is not providing any assessment for the **Ross worm (*Saberllaria spinulosa*) reefs** because there is no evidence available to support the presence of a reef feature in the site. All other features are considered moderately or highly vulnerable to one or more pressures associated with fishing activities, for which recent evidence indicates is occurring over the features known extent in the site; see Table 160 in Annex 7 for further detail on the Vulnerability Assessments.

### 6.13.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. Consequently, JNCC has **Low** confidence in the condition of all the features as there is no direct evidence to demonstrate condition with any higher confidence; all assessments were carried out using a vulnerability assessment, and all features have moderate or lower confidence in extent which further affects our confidence in feature condition.

### 6.13.4 Feature risk

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7.

**Table 70: Offshore Brighton rMCZ Feature Risk Assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| **Offshore Brighton rMCZ** (BS 14) | **High energy circalittoral rock** (A4.1) | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Moderate energy circalittoral rock** (A4.2) | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Subtidal coarse sediment** (A5.1) | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal mixed sediments** (A5.4) | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Ross worm (*Sabellaria spinulosa)* reefs** | Feature not assessed<br>. | |
| | **Undulate ray (*Raja undulata*)** | Feature not assessed | |

### 6.13.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site as a whole have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence and extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 71, Table 72 and Table 73 below.

### *Feature assessment*

## Table 71: Offshore Brighton rMCZ feature data sufficiency assessment

| Site (Code) | Feature (Code) | Q1a. Confidence score of at least moderate for feature presence? | Q1b. Is 1a based only on parent habitat being present? | Q1c. Confidence score of at least moderate for extent/ distribution? | Outcome from question 1 assessment |
|---|---|---|---|---|---|
| **Offshore Brighton rMCZ** (BS 14) | **High energy circalittoral rock** (A4.1) | **Yes** (Moderate confidence) | **No** | **No** (Low confidence) | Move to Question 2 of the feature assessment (see Table 72). |
| | **Moderate energy circalittoral rock** (A4.2) | **Yes** (Moderate confidence) | **Yes** | **N/A** | Move to Question 2 of the feature assessment (see Table 72). |
| | **Subtidal coarse sediment** (A5.1) | **Yes** (High confidence) | **No** | **Yes** (Moderate confidence) | **Data supports designation of feature** |
| | **Subtidal mixed sediments** (A5.4) | **Yes** (High confidence) | **No** | **Yes** (Moderate confidence) | **Data supports designation of feature** |

## Table 72: Offshore Brighton rMCZ assessment of additional conservation/ecological considerations

| Site (Code) | Feature (Code) | Q2a: Does the feature fill a 'big gap' in the network AND have confidence score of at least moderate for feature presence? | Q2b: Is the feature at high risk of damage? | Outcome from Question 2 assessment |
|---|---|---|---|---|
| **Offshore Brighton rMCZ** (BS 14) | **High energy circalittoral rock** (A4.1) | **Yes** - The site is the only option to fill a gap in the region for High energy circalittoral rock in 75-200m water depth. There are no sites within the region in the existing network that afford protection to this feature, and would also help to fill a spatial gap in the region for Circalittoral rock. Confidence in feature presence is Moderate. | **N/A** | **Conservation benefits support priority feature designation**** |

| | | | | |
|---|---|---|---|---|
| | **Moderate energy circalittoral rock** (A4.2) | No – This site is the only option which could provide a replicate in the region for Moderate energy circalittoral rock in 75-200m water depth; provides an option to help to increase the amount of the feature afforded protection within the region; and could help fill a spatial gap in Circalittoral rock in the region. However the moderate confidence score assigned to the presence of this feature is based on parent feature data only. | Yes - This feature is currently at High risk of damage from benthic trawling and is also at High risk of damage in the future. | **Feature should be further considered** by Defra so that the designation decision is based on consideration of specific circumstances such as conservation benefits and where the precautionary principle is applied because we have Moderate confidence in feature presence (based on parent feature data), this site is the only option to fill a big gap in the network for this feature and the feature is at high risk of damage. |

****** Subject to considerations listed in the method in Section 5.5

### *Site level assessment*

### Table 73: Offshore Brighton rMCZ site level assessment

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **Not applicable** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Greater than 50%** |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Does this site contribute to filling a big gap in the network?**<br>**Yes**. The site is the only option within the Tranche Two sites to fill a gap in the region for **High energy circalittoral rock in 75-200m water depth**. There are no sites within the region in the existing network that afford protection to this feature. It is also the only option to fill a spatial gap in the region for **Circalittoral** rock. In addition it is the only site option to provide a replicate for **Moderate energy circalittoral rock in 75-200m water depth.** It also provides one of two options to provide a replicate in the region for **Subtidal coarse sediment in 75-200m water depth.** There are no sites within the region in the existing network that afford protection to this feature and is therefore needed to meet the minimum two replicates within the region. This site is also one of two options to provide a replicate for **Subtidal mixed sediments in 75-200m water depth.** It is the only site that could contribute to the percentage of **Moderate energy circalittoral rock** afforded protection in the region and is the only option to contribute to the percentage of **High energy circalittoral rock.** This site could also significantly help increase the amount of **Subtidal coarse sediment** and **Subtidal mixed sediments** afforded protection within the region (currently only 0.9% of the known area of known area protected). Although there are other sites that could also increase the protection of Subtidal mixed sediments within the region, with currently only <0.9% of the known area afforded protection, several sites may be needed to afford protection to the recommended minimum of 10% of known area. There are no other options to fill the representativity gaps in the region for **High energy circalittoral rock in 75-200m** and **Moderate energy circalittoral rock in 75-200m water depth** and to contribute to the proportion of Moderate energy circalittoral rock afforded protection.<br><br>**Representativity** (seeking two examples of each EUNIS Level 3 habitat within each energy category (low, moderate and high) and depth zone (0-10m, 10-75m, 75-200m, 200m+) and two examples of each FOCI within each CP2 region):<br>- The site is the only option within the Tranche Two sites to fill a gap in the region for **High energy circalittoral rock in 75-200m water depth**. There are no sites within the region in the existing network that afford protection to this feature.<br>- The site is the only option within the Tranche Two sites to provide a replicate |

| | |
|---|---|
| | in the region for **Moderate energy circalittoral rock in 75-200m water depth**. There is currently one site that affords protection to this feature in this depth/energy category within the region in the existing network which is the Wight-Barfleur Reef SAC.<br>- The site is one of two options within the Tranche Two sites to provide a replicate in the region for **Subtidal coarse sediment in 75-200m water depth**. There are no sites within the region in the existing network that afford protection to this feature and is therefore needed to meet the minimum two replicates within the region.<br>- The site is one of two options within the Tranche Two sites to provide a replicate in the region for **Subtidal mixed sediments in 75-200m water depth**. There is currently one site that affords protection to this feature in this depth/energy category within the region in the existing network which is the Wight-Barfleur Reef SAC. The other option would be Offshore Overfalls rMCZ.<br><br>**Adequacy** (seeking protection of at least 10% of known area of each EUNIS Level 3 habitat within each CP2 region):<br>- This site would contribute to increasing the amount of **High energy circalittoral rock** afforded protection within the region (currently 6.7% of the known area protected in the existing network). This is the only option within the region to contribute to the proportion of this feature afforded protection.<br>- This site would contribute to increasing the amount of **Moderate energy circalittoral rock** afforded protection within the region (currently 0.9% of the known area protected in the existing network). This is the only option within the region to contribute to the proportion of this feature afforded protection.<br>- This site could contribute to increasing the amount of **Subtidal coarse sediment** afforded protection within the region (currently 5.7% of the known area protected in the existing network).<br>- This site could contribute to increasing the amount of **Subtidal mixed sediments** afforded protection within the region (currently 0.9% of the known area protected in the existing network).<br><br>**Connectivity** (ensuring that sites affording protection to the same habitat at EUNIS Level 2 are not further than 80km apart):<br>- This site would fill a spatial gap in the region for Circalittoral rock. |

### 6.13.6 Feature maps

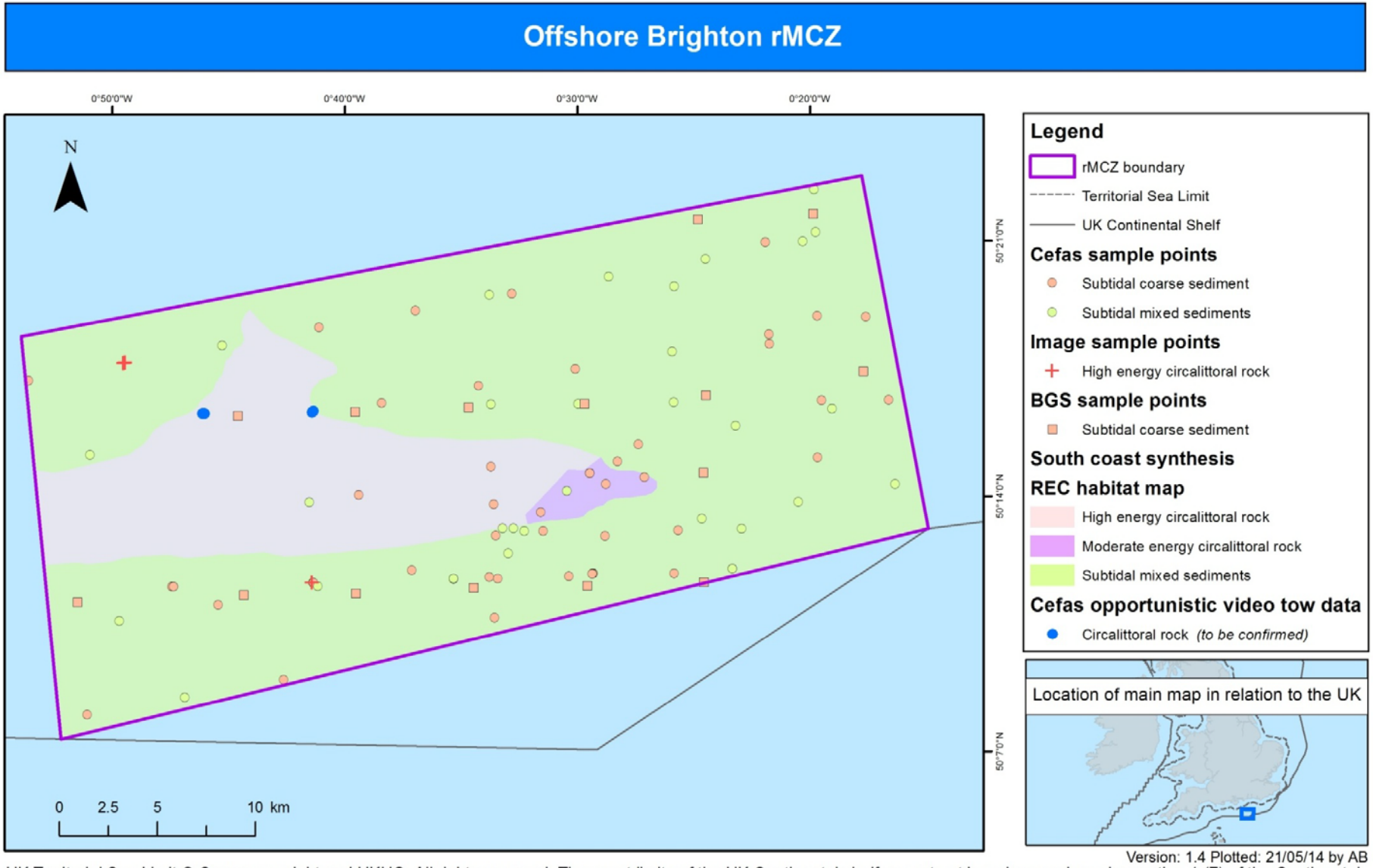
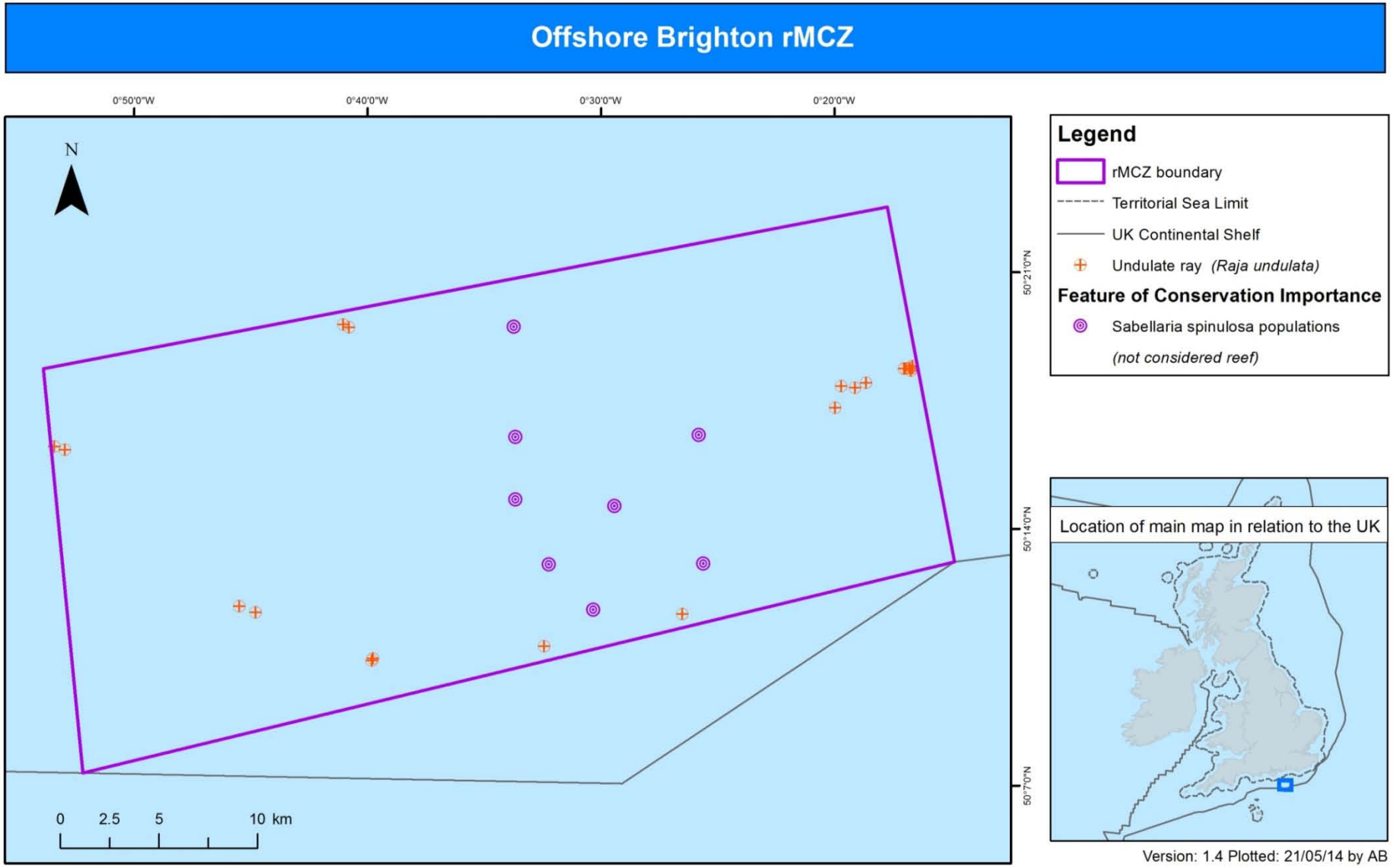



**Figure 29: Map of broad-scale habitats in Offshore Brighton rMCZ**




UK Territorial Sea Limit © Crown copyright and UKHO. All rights reserved. The exact limits of the UK Continental shelf are set out in orders made under section 1 (7) of the Continental Shelf Act 1964 (© Crown Copyright). Continental Shelf (Designation of Areas) Order 2013. Combining source layers from UKHO. © UKHO © JNCC.
Not to be used for navigation. © JNCC 05/2014

**Figure 30: Map of Features of Conservation Importance in Offshore Brighton rMCZ**

## 6.14 Offshore Overfalls rMCZ

Offshore Overfalls rMCZ was recommended by the Balanced Seas regional MCZ project[95] for the broad-scale habitats **Subtidal coarse sediment**, **Subtidal sand** and **Subtidal mixed sediments**. The site was also recommended for the habitat Feature of Conservation Interest (**FOCI**) **Ross Worm (*Sabellaria spinulosa*) reefs**, the high-mobility species FOCI **Undulate ray (*Raja undulata*)** and the Geomorphological feature **English Channel outburst flood features**.

The regional MCZ project identified the presence of the habitat FOCI **Native oyster beds** and **Sheltered muddy gravels** and low mobility species FOCI **Native Oyster (*Ostrea edulis*)**, but these were not put forward for designation due to uncertainties in the quality of the data identifying the presence of these features. Only those non-recommended features where JNCC now has new data have been assessed in the 2014 advice. New data have also identified a record of **European eel (*Anguilla anguilla*)** within the site.

Further data were collected during an MB0120[32] survey and some data identified by the MB0116[31] work since the regional MCZ project's recommendations. Acoustic information was collected as part of the survey of the site, however, it does not cover the entirety of the site and so a new habitat map is not available. JNCC have assessed all features in 2014 where data have been identified within the site.

### 6.14.1 Assessment of feature presence and extent

JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce a new confidence assessment in feature presence and feature extent, utilising all available data for the site in 2014 (see Section 5.1). A summary of the assessments is presented below in Table 74. The data and assessments can be viewed in full in Annex 4, Table 135 and Table 136.

**Table 74: Offshore Overfalls rMCZ evidence assessment summary**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature presence** (previous assessment scores) | **Rationale for confidence in feature presence** | **Confidence in feature extent** (previous assessment scores) | **Rationale for confidence in feature extent** |
|---|---|---|---|---|---|
| | **Subtidal coarse sediment** (A5.1) | **High** (High) | There are 61 ground-truthing points which demonstrate the presence of Subtidal coarse sediment in the site. | **High** (Low) | The extensive spatial spread of sampling throughout the site demonstrates the extent of Subtidal coarse sediment in the site. |
| | **Subtidal sand** (A5.2) | **Moderate** (Moderate) | Three ground-truthing points demonstrate the presence of Subtidal sand in the site. | **Low** (Low) | Low confidence in the extent of this feature has been assigned due to sample locations being intermingled with other habitat types in close proximity. |

| Site (Code) | Feature (Code) | Confidence in feature presence (previous assessment scores) | Rationale for confidence in feature presence | Confidence in feature extent (previous assessment scores) | Rationale for confidence in feature extent |
|---|---|---|---|---|---|
| **Offshore Overfalls rMCZ** (BS 17) | **Subtidal mixed sediments** (A5.4) | **High** (High) | There are 20 ground-truthing points that demonstrate the presence of Subtidal mixed sediments in the site. | **Moderate** (Moderate) | Multiple samples demonstrate the extent of the Subtidal mixed sediments but the density of sampling is insufficient for high confidence to be assigned. |
| | **Ross worm (*Sabellaria spinulosa*) reefs** | **Low** (Low) | Whilst there are ground-truthing samples showing sparse populations of *Sabellaria spinulosa* being present in the site, there is currently no evidence to support the presence of a reef. | **Low** (Not Assessed) | There is currently no evidence to support the presence of reefs occurring within the site. |
| | **Native oyster (*Ostrea edulis*)*** | **Low** (*) | There are five records in excess of 12 years old which demonstrate the presence of Native oyster in the site. | **Low** (*) | There are five records in excess of 12 years old which demonstrates the distribution of Native oyster in the site. |
| | **European eel (*Anguilla anguilla*)*** | **Low** (*) | Only one point record which is in excess of 12 years old demonstrates the presence of European eel in the site. | **Low** (*) | Only one point record which is in excess of 12 years old demonstrates the distribution of European ell in the site. |
| | **Undulate ray (*Raja undulata*)** | **Moderate** (Low) | There are data from four surveys that have recorded the presence of Undulate ray in this site. However only four data points have been collected within the past six years | **Moderate** (Low) | There are data from four surveys that record the presence of Undulate ray in the site, but as only four points were collected within the past six years. We are unable to have any greater high confidence in distribution. |
| | **English channel outburst flood features** | **High** (High) | Confidence in feature presence is a direct parallel to confidence in the morphology of the geo-feature. Confidence in the maps of the English Channel Outburst feature in the site is high | **High** (High) | Confidence in feature extent is a direct parallel to confidence in the morphology of the geo-feature. Confidence in the maps of the English Channel Outburst feature in the site is high |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

In 2012 JNCC assessed the features that had been recommended for this site by the Balanced Seas regional MCZ project. The features assessed were **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mixed sediments**, **Ross Worm (*Sabellaria spinulosa*) reefs**, **Subtidal sands and gravels**, **Undulate ray** and **English channel outburst flood features**. Our confidence scores for presence and extent/distribution in this 2012 advice are outlined in Table 74 above. JNCC has not included an assessment of the habitat FOCI **Subtidal sands and gravels**, as explained in Section 5.1 of our advice.

**Subtidal coarse sediment** was identified on 61 occasions across the site by the MB0120[32] survey in 2012. Therefore JNCC have a **High** confidence in the presence of feature within the site. Whilst there has been no new habitat map produced following recent surveys, the sample points are well distributed across the site (see Figure 31) and so JNCC have a **High** confidence in the feature's extent.

**Subtidal sand** was originally identified as being present within the site from two sample points collected as part of the South Coast REC survey[96]. These points were assigned to the broad-scale habitat **Subtidal**

**sand** based on the biotopes present within the sample. The more recent MB0120[32] survey identified a single record of the feature within the site. Considering the few number of records available, it has been assigned a **Moderate** confidence in feature presence. While two of the three sample points intersect the mapped extent of the feature in the REC habitat map derived from a model, other ground-truthing records collected close to those points indicate a different habitat and therefore the distribution of the Subtidal sand is not as expansive as the REC habitat map originally indicated. Consequently, JNCC have **Low** confidence in the feature's extent throughout the whole site.

**Subtidal mixed sediments** had previously been recorded in six samples from a combination of a Cefas data mining study and the South Coast REC ground-truthing data. The feature has subsequently been identified in 14 samples from the MB0120[32] survey in 2012. JNCC have a **High** confidence in the feature's presence within the site. The ground-truth data available suggests the spatial extent of this feature is significantly smaller than the extent indicated by the South Coast REC habitat map[96]. The combination of the spatial spread of the sediment samples and the difficulty in clearly outlining the extent of the feature given there are samples showing other features present, only give JNCC a **Moderate** confidence in our understanding of the feature's extent within the site. JNCC note that the separation between sampling stations was significantly reduced in the north-east of the site to attempt to proportionately sample the modelled extent of **Subtidal sand**, which has resulted in a greater definition of the extent of **Subtidal mixed sediments** within this area.

The FOCI **Ross worm (*Sabellaria spinulosa*) reefs** was recommended by the Balanced Seas regional MCZ project and considered within JNCC's 2012 advice. However during the 2012 MB0120[32] survey, no evidence of reefs was found within the site although the individuals of the species were found within 21 grabs samples; only three samples recorded greater than 10 individuals. JNCC reviewed the available data where the species had been recorded and concluded that there is a lack of any evidence supporting the presence of reef formation. The low numbers of individual *Sabellaria spinulosa* are potentially forming small ephemeral patches on the seabed. Based on this information, JNCC has **Low** confidence in the presence and extent for this **Ross worm (*Sabellaria spinulosa*) reefs** feature.

The high-mobility species FOCI **Undulate ray (*Raja undulata*)** was recommended by the Balanced Seas MCZ regional project on the basis of anecdotal evidence provided by local stakeholders. Data provided as part of the MB0116[31] contract identified 54 occurrences of this species within the site. Four of these samples were collected within the past six years, and thus JNCC has **Moderate** confidence in the presence and distribution of **Undulate ray (*Raja undulata*)** within the site. However, JNCC note there is no evidence indicating site fidelity for this species in this Offshore Overfalls rMCZ (see Section 5.3).

**English Channel outburst flood features** were recommended in the 2012 advice[24] with JNCC having **High** confidence in feature presence and extent. There have been no new data identified for this feature since 2012 and therefore our confidence in presence and extent remains **High** in 2014.

The species FOCI **Native oyster (*Ostrea edulis*)** was identified as being present in the site through the MB0116[31] contract. Five samples were identified between 1998 and 2000. Following Technical Protocol E[40] and supplementary guidance[41], JNCC have **Low** confidence in feature presence, and subsequently feature distribution, due to the data being in excess of 12 years old.

The high-mobility species FOCI **European eel (*Anguilla Anguilla*)** has been identified as being present within under the MB0116[31] contract. A single occurrence was recorded within the site from a dataset in excess of 12 years old. Following Technical Protocol E[40] and supplementary guidance[41], JNCC have **Low** confidence in feature presence, and subsequently feature distribution due to the age of the record.

### 6.14.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of our confidence in feature condition and the General Management Approach (**GMA**) proposed are presented below in Table 75 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 75: Summary of JNCC's conservation advice for features in Offshore Overfalls rMCZ**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **Offshore Overfalls rMCZ** (BS 17) | **Subtidal coarse sediment** (A5.1) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal sand** (A5.2) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal mixed sediments** (A5.4) | **Low** (Low) | **Recover** (Recover) |
| | **Ross Worm (*Sabellaria spinulosa*) reefs** | **Not Assessed** (Low) | **Not Assessed** (Recover) |
| | **English channel outburst flood features** | **High** (High) | **Maintain** (Maintain) |

In July 2012[24], JNCC proposed that the features **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mixed sediments** and **Ross worm (*Sabellaria spinulosa*) reefs** recommended by the Balanced Seas MCZ regional MCZ project[95], should be have a **Recover** GMA. In 2014, JNCC is not providing any assessment for the **Ross worm (*Sabellaria spinulosa*) reefs** because there is no evidence available to support the presence of a reef feature in the site. For all other features, our advice remains unchanged in 2014 because the evidence available indicates they continue to be moderately or highly vulnerable to pressures associated with fishing activity; see Table 161 in Annex 7 for more detail on the Vulnerability Assessment.

A vulnerability assessment has not been undertaken for the species FOCI **Undulate ray (*Raja undulata*)** or **European Eel (*Anguilla Anguilla*)** as JNCC do not have any current evidence to suggest spatial protections measures are appropriate for their conservation in offshore waters (See Section 5.3). JNCC has not assessed the species FOCI **Native Oyster (*Ostrea edulis)*** because of the lack of recent data verifying its presence within the site, noting the extensive sampling since the last recorded observation in 2000. Our assessment for the Geomorphological feature the **English channel outburst flood features** has not changed since our previous advice; we propose that a **Maintain** GMA remains appropriate in 2014.

### 6.14.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. Consequently, JNCC have **Low** confidence in the condition of the features **Subtidal coarse sediment**, **Subtidal sand** and **Subtidal mixed sediments**. JNCC is not providing any assessment for the **Ross worm (*Sabellaria spinulosa*) reefs** because there is no evidence available to support the presence of a reef feature in the site. We have **High** confidence in feature condition of the Geomorphological feature **English channel outburst flood feature**, as a result of the feature clearly being identified in Gutpa *et al*., 2007[98] from high resolution sonar data of the area. Our advice has remained unchanged in 2014 concerning confidence in feature condition for this site.

### 6.14.4 Feature risk

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7.

**Table 76: Offshore Overfalls rMCZ feature risk assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| **Offshore Overfalls rMCZ** (BS 17) | **Subtidal coarse sediment** (A5.1) | **High**<br>Feature is highly vulnerable to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal sand** (A5.2) | **Moderate**<br>Feature is **moderately vulnerable** to one/more pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |

[98] GUPTA, S., COLLIER, J. S. PALMER-FELGATE, A. & POTTER, G. (2007), Catastrophic Flooding Origin of Shelf Valley Systems in the English Channel. *Nature* **448:** 342-345.

| | | | |
|---|---|---|---|
| | **Subtidal mixed sediments** (A5.4) | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Ross worm (*Sabellaria spinulosa*) reefs** | Feature not assessed | |
| | **Native oyster (*Ostrea edulis*)** | Feature not assessed | |
| | **Undulate ray (*Raja undulata*)** | Feature not assessed | |
| | **European eel (*Anguilla anguilla*)** | Feature not assessed | |
| | **English channel outburst flood features** | Feature not assessed because it is a geomorphological feature. | |

### 6.14.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site as a whole have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence and extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 77, Table 78 and Table 79 below.

***Feature assessment***

**Table 77: Offshore Overfalls rMCZ feature data sufficiency assessment**

| Site (Code) | Feature (Code) | Q1a. Confidence score of at least moderate for feature presence? | Q1b. Is 1a based only on parent habitat being present? | Q1c. Confidence score of at least moderate for extent/ distribution? | Outcome from Question 1 assessment |
|---|---|---|---|---|---|
| **Offshore Overfalls rMCZ (BS 17)** | **Subtidal coarse sediment** (A5.1) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal sand** (A5.2) | **Yes** (Moderate confidence) | **No** | **No** (Low confidence) | Move to Question 2 of the feature assessment (see Table 78) |
| | **Subtidal mixed sediments** (A5.4) | **Yes** (High confidence) | **No** | **Yes** (Moderate confidence) | **Data supports designation of feature** |
| | **English channel outburst flood features** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |

### Table 78: Offshore Overfalls rMCZ assessment of additional conservation/ecological considerations

| **Site** (Code) | **Feature** (Code) | **Q2a: Does the feature fill a 'big gap' in the network AND have confidence score of at least moderate for feature presence?** | **Q2b: Is the feature at high risk of damage?** | **Outcome from Question 2 assessment** |
|---|---|---|---|---|
| **Offshore Overfalls rMCZ** (BS17) | **Subtidal sand** (A5.2) | **Yes** - The site is the only option to fill a gap in the region for Subtidal sand in 75-200m water depth and therefore the only option to contribute to increasing the amount of Subtidal sand afforded protection in the region (currently 2.7% of known distribution protected in the existing network). The confidence in feature presence is also high within the site. | **N/A** | **Conservation benefits support priority feature designation*** |

****** Subject to considerations listed in the method in Section 5.5

### *Site level assessment*

### Table 79: Offshore Overfalls rMCZ site level assessment

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **Not applicable** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Greater than 75%** |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Does this site contribute to filling a big gap in the network?**<br>**Yes**.<br>The site is the only option to fill a gap in the region for **Subtidal sand in 75-200m water depth** and therefore the only option to contribute to increasing the amount of **Subtidal sand** afforded protection in the region (currently 2.7% of known area protected in the existing network). This site is one of two options to provide a replicate in the region for **Subtidal coarse sediment in 75-200m water depth.** There are no sites within the region in the existing network that afford protection to this feature and is therefore needed to meet the minimum two replicates within the region. This site is also one of two options to provide a replicate in the region for **Subtidal mixed sediments in 75-200m water depth**. This site would also contribute to increasing the percentage of **Subtidal coarse sediment** and significantly contribute to increasing the percentage of **Subtidal mixed sediments** afforded protection within the region. Although there are other sites that could also increase the protection of Subtidal mixed sediments within the region, with currently only <0.9% of the known area afforded protection, several sites may be needed to afford protection to the recommended minimum of 10% of known area.<br><br>**Representativity** (seeking two examples of each EUNIS Level 3 habitat within each energy category (low, moderate and high) and depth zone (0-10m, 10-75m, 75-200m, 200m+) and two examples of each FOCI within each CP2 region):<br>- The site is one of two options within the Tranche Two sites to provide a replicate in the region for **Subtidal coarse sediment in 75-200m water depth**. There are no sites within the region in the existing network that afford protection to this feature and is therefore needed to meet the minimum two replicates within the region.<br>- The site is the only option within the Tranche Two sites to fill a gap in the region for **Subtidal sand in 75-200m water depth**. There are no sites within the region in the existing network that afford protection to this feature.<br>- The site is one of two options within the Tranche Two sites to provide a |

| | |
|---|---|
| | replicate in the region for **Subtidal mixed sediments in 75-200m water depth**. There is currently one site that affords protection to this feature in this depth/energy category within the region in the existing network which is the Wight-Barfleur Reef SAC. The other option would be Offshore Brighton rMCZ.<br><br>**Adequacy** (seeking protection of at least 10% of the known area of each EUNIS Level 3 habitat within each CP2 region):<br>- This site will help to increase the amount of **Subtidal coarse sediment** afforded protection within the region (currently 5.7% of the known area protected in the existing network).<br>- This site will help to increase the amount of **Subtidal sand** afforded protection within the region (currently 2.7% of the known area protected in the existing network) and is the only option within the Tranche Two sites to help fill this gap.<br>- This site will help to increase the amount of **Subtidal mixed sediments** afforded protection within the region (currently 0.9% of the known area protected in the existing network). Although there are other sites that could also increase the protection of Subtidal mixed sediments within the region, with currently only <0.9% afforded protection, several sites may be needed to afford protection to the recommended minimum of 10% of known area. |

### 6.14.6 Feature maps

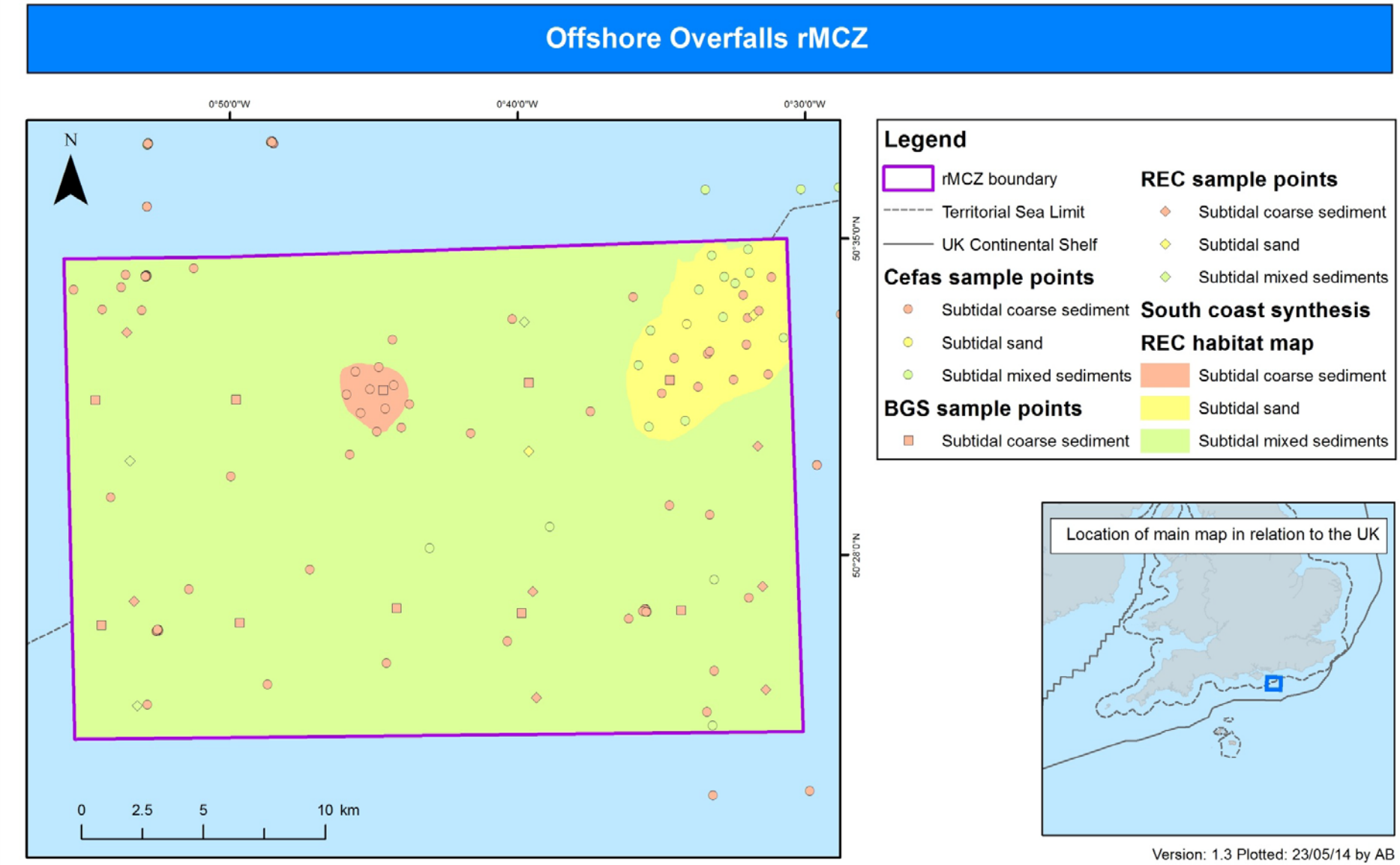
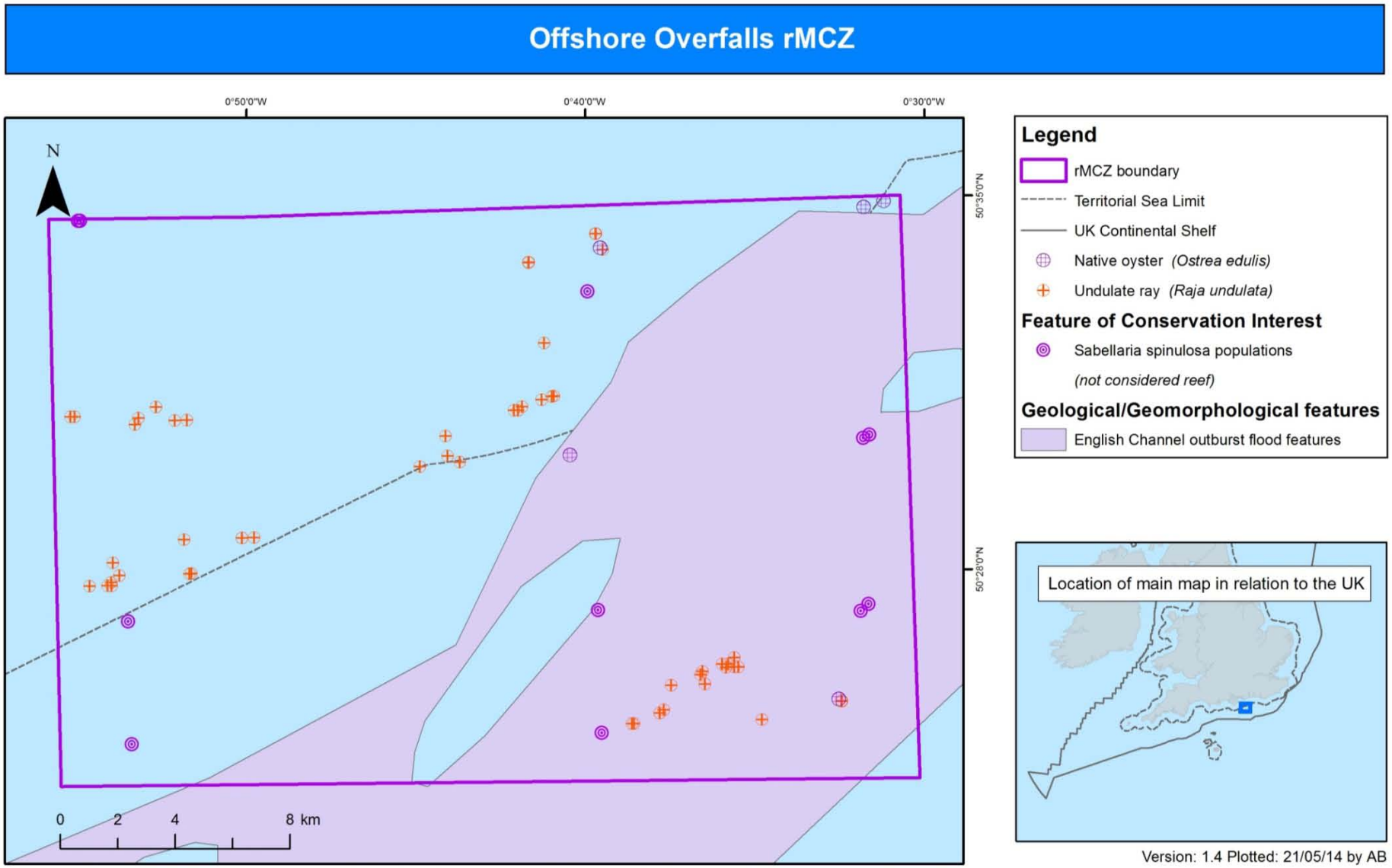



**Figure 31: Map of broad-scale habitats in Offshore Overfalls rMCZ**




UK Territorial Sea Limit © Crown copyright and UKHO. All rights reserved. The exact limits of the UK Continental shelf are set out in orders made under section 1 (7) of the Continental Shelf Act 1964 (© Crown Copyright). Continental Shelf (Designation of Areas) Order 2013. Combining source layers from UKHO. © UKHO © JNCC.
Not to be used for navigation. © JNCC 05/2014

**Figure 32: Map of habitat and species Features of Conservation Importance and geological features in Offshore Overfalls rMCZ**

## 6.15 Slieve Na Griddle rMCZ

Slieve Na Griddle rMCZ was recommended by the Irish Sea Conservation Zone regional MCZ project[86] for the broad-scale habitat features **Low energy circalittoral rock** and **Subtidal mud** and the habitat Feature of Conservation Interest (**FOCI**) **Mud habitats in deep water.**

Since the original recommendations, further data sourced through the Defra MB0120[32] contract have been used in this 2014 advice. JNCC is also providing advice on an additional feature not originally recommended, the habitat FOCI **Sea-pen and burrowing megafauna communities**.

### 6.15.1 Assessment of feature presence and extent

JNCC's 2014 assessments used the map derived from the EUSeaMap[44] habitat model combined with the Pisces Reef Complex cSAC/SCI habitat map[99] created from survey data, plus data from the British Geological Survey (**BGS**), Marine Recorder, the Defra MB0102[74] contract, the Strategic Environmental Assessment (**SEA**) 6 survey conducted by the Department of Trade and Industry[100], and Marine Institute annual *Nephrops* under water TV and Particle Size Analysis (**PSA**) survey data points.

JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce a new confidence assessment in feature presence and feature extent, utilising all available data for the site in 2014 (see Section 5.1). A summary of the assessments is presented below in Table 80. The data and assessments can be viewed in full in Annex 4, Table 137 and Table 138.

**Table 80: Slieve Na Griddle rMCZ evidence assessment summary**

| **Site** (Code) | **Feature** (Code) | **Confidence in presence** (previous assessment scores) | **Rationale for confidence in Feature presence** | **Confidence in extent** (previous assessment scores) | **Rationale for confidence in Feature extent** |
|---|---|---|---|---|---|
| **Slieve Na Griddle rMCZ** (ISCZ07) | **Low energy circalittoral rock** (A4.3) | **Not Assessed** (High) | Not assessed as this feature is protected through the Pisces Reef Complex cSAC/SCI and as a result, should not be a feature within the MCZ. | **Not Assessed** (High) | No assessment required out for this feature as it is protected through the Pisces Reef Complex cSAC/SCI and as a result, it should not be a feature within the MCZ. |
| | **Subtidal mud** (A5.3) | **High** (High) | A habitat map from survey covering a portion of the site with 49 ground-truthing points demonstrate the presence of Subtidal mud in the site. In addition, 13 data | **High** (Moderate) | A habitat map from survey with 49 ground-truthing data points demonstrate the extent of Subtidal mud in the site, in combination with the widespread distribution of point data in the areas beyond |

[99] Pisces Reef Complex SAC Selection Assessment Document. Available at: http://jncc.defra.gov.uk/pdf/PiscesReef_SAC_SelectionAssessment_V5_0.pdf
[100] Strategic Environmental Assessment 6: Environmental Report. Available at: https://www.gov.uk/government/publications/strategic-environmental-assessment-6-environmental-report

| **Site** (Code) | **Feature** (Code) | **Confidence in presence** (previous assessment scores) | **Rationale for confidence in Feature presence** | **Confidence in extent** (previous assessment scores) | **Rationale for confidence in Feature extent** |
|---|---|---|---|---|---|
| | | | points confirm the presence of the feature in the areas beyond those covered by the habitat map from survey. | | those covered by the habitat map from survey. |
| | **Mud habitats in deep water** | **High** (High) | A habitat map from survey covering a portion of the site with 49 ground-truthing data points demonstrate the presence of Mud habitats in deep water in the site. In addition, 13 data points confirm the presence of the feature in the areas beyond those covered by the habitat map from survey. | **High** (Moderate) | A habitat map from survey with 49 ground-truthing data points demonstrate the extent of the Mud habitats in deep water) in combination with the widespread distribution of point data in the areas beyond those covered by the habitat map from survey. |
| | **Sea-pen and burrowing megafauna communities*** | **High** (*) | There are11 data points that demonstrate the presence of burrows and mounds associated with *Nephrops*, confirming the presence of the feature in the site. | **High** (*) | The widespread distribution of point data showing the presence of burrows and mounds associated with *Nephrops* in site demonstrates the extent of Sea-pen and burrowing megafauna communities in the site. |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

Following a review of all available data in 2014, JNCC found no evidence of **Low energy circalittoral rock** beyond the mapped extent of the Pisces Reef Complex cSAC/SCI[99] (see Figure 33). As noted in previous advice, JNCC not recommend this feature is put forward for designation within Slieve Na Griddle rMCZ as it should be afforded sufficient protection through the management of the Natura 2000 site; it does not require further protection through any MCZ management measures.

Since JNCC's 2012 assessment, a higher resolution habitat map from survey has been produced for the Pisces Reef Complex cSAC/SCI within the rMCZ boundary, providing additional information on the spatial extent of the rock and mud features. Ground-truth data (video tows and still images) from the SEA 6 survey[100] confirm a mixture of rock and mud features across the extent of the south western portion of the cSAC/SCI boundary within Slieve Na Griddle rMCZ (See Figure 33).

The broad-scale habitat feature **Subtidal mud** is verified within the Pisces Reef Complex cSAC/SCI survey areas and through the SEA6 survey[100], and the Agri-Food and Biosciences Institute of Northern Ireland (**AFBI**) survey completed in 2007/2008, both of which comprised of a combination of ground-truthing and acoustic data to map the extent of the SAC reef feature. There are also further grab samples collected by the BGS and Marine Institute confirming the mud feature outside of these two survey areas. Additionally, the annual *Nephrops* stock survey undertaken by the Marine Institute (Republic of Ireland) has recorded *Nephrops* burrows at 11 locations across the full extent of the site, indicating the habitat present is **Subtidal mud**. JNCC continues to have **High** confidence in the presence of the feature, and our confidence in its

extent has increased from **Moderate** to **High** confidence from our 2012 assessment due to the combination of the volume of supporting data and recent higher resolution habitat map.

JNCC's confidence in the presence and extent of the habitat FOCI **Mud habitats in deep water** and the recently identified habitat FOCI **Sea-pen and burrowing megafauna communities** is supported through the data available for **Subtidal mud**, as described above. These data indicate a low energy mud habitat which concurs with the energy layer in EUSeaMap[44], and also through the annual *Nephrops* data from the Marine Institute giving burrow density above 0.2/m$^2$ for *Nephrops* and also incidental data of other burrowing megafauna associated with the habitat FOCI features. Therefore, JNCC have the same **High** confidence in presence and extent of both features, as that assigned to **Subtidal mud**. See Section 5.1 for more information on JNCC's use of burrow density data.

Should Slieve Na Griddle rMCZ be designated by Defra, JNCC advise that **Mud habitats in deep water** should not be a designated feature of the site if the **Subtidal mud** and **Sea-pen and burrowing megafauna communities** features are designated. Figure 34 clearly shows these three habitats share the same spatial extent. JNCC consider there is limited extra conservation value in designating **Mud habitats in deep water** where it is afforded protection by its parent and component habitats. Please refer to Annex 6 for more information.

### 6.15.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of our confidence in feature condition and the General Management Approach (**GMA**) proposed are presented below in Table 53 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 81: Summary of JNCC's conservation advice for features in Slieve Na Griddle rMCZ**

| **Site** (Code) | **Feature** (Code) | **Confidence in Feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **Slieve Na Griddle rMCZ** (ISCZ07) | **Low energy circalittoral rock** (A4.3) | **Not Assessed** (Low) | **Not Assessed** (Recover) |
| | **Subtidal mud** (A5.3) | **Low** (Low) | **Recover** (Recover) |
| | **Mud habitats in deep water** | **Low** (Moderate) | **Recover** (Recover) |
| | **Sea-pen and burrowing megafauna communities *** | **Low** (*) | **Recover** (*) |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

The regional MCZ project proposed **Recover** GMAs for the three features originally recommended in 2011. In JNCC's 2012 advice[24], we concurred these GMAs were appropriate because the features were considered moderately to highly vulnerable to the pressures associated with bottom trawling targeting *Nephrops*, which at the time, the evidence indicated was occurring over the features. After reviewing the

updated activities data in 2014, JNCC propose the features continue to be moderately to highly vulnerable to the same pressures and **Recover** GMAs remain appropriate; see Table 162 in Annex 7 for more details on the vulnerability assessments.

JNCC propose a **Recover** GMA for the recently added habitat FOCI **Sea-pen and burrowing megafauna communities**, since the same pressures apply across its extent in the site.

### 6.15.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. In our 2012 advice, JNCC had **Low** confidence in the condition of **Subtidal mud**; with no additional evidence on the condition of the feature, our previous advice still stands in 2014. JNCC also has low confidence in the condition of the habitat FOCI **Sea-pen and burrowing megafauna communities**. Our confidence in the condition of **Mud habitats in deep water** has been reduced from Moderate (in 2012) to **Low** in 2014, following the reassessment of the feature's sensitivity in areas <200m as set out in Section 5.3.

### 6.15.4 Feature Risk

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7.

**Table 82: Slieve Na Griddle rMCZ feature risk assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| **Slieve Na Griddle rMCZ** (ISCZ07) | **Low energy circalittoral rock** (A4.3) | Feature not assessed | |
| | **Subtidal mud** (A5.3) | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Mud habitats in deep water** | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Sea-pen and burrowing megafauna communities** | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |

### 6.15.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site as a whole have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence and extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 83 and Table 84 below.

***Feature assessment***

**Table 83: Slieve Na Griddle rMCZ feature data sufficiency assessment**

| Site (Code) | Feature (Code) | Q1a. Confidence score of at least moderate for feature presence? | Q1b. Is 1a based only on parent habitat being present? | Q1c. Confidence score of at least moderate for extent/ distribution? | Outcome from Question 1 assessment |
|---|---|---|---|---|---|
| **Slieve Na Griddle rMCZ** (ISCZ07) | **Subtidal mud** (A5.3) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Mud habitats in deep water** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature, however JNCC advise that this feature is not designated within this site (see Annex 6).** |
| | **Sea-pen and burrowing megafauna communities** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |

As the data for these features meet the criteria set by Question 1 and support the case for designation of these features, there is no requirement for Question 2 of the feature assessment to be considered as set out in the paper '*MCZ Levels of Evidence – Advice on when data supports a feature/site for designation from a scientific, evidence-based perspective*'[68] - see Section 5.5 of this advice.

***Site level assessment***

**Table 84: Slieve Na Griddle rMCZ site level assessment**

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **Not applicable** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Greater than 75%** |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Does this site contribute to filling a big gap in the network?**<br>**Yes**.<br>This site is one of four options to fill a gap for **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities** which are currently not afforded protection within any sites within the region in the existing network. This site could also contribute to increasing the amount of **Subtidal mud** afforded protection within the region (currently 0.8% of known area protected in the existing network). There are several other |

| | |
|---|---|
| | sites that could also increase the protection of Subtidal mud within the network although with currently only 0.8% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% of known area.<br><br>**Representativity** (seeking two examples of each EUNIS Level 3 habitat within each energy category (low, moderate and high) and depth zone (0-10m, 10-75m, 75-200m, 200m+) and two examples of each FOCI within each CP2 region):<br>- The site is one of four options within the Tranche Two sites to fill a gap in the region for **Mud habitats in deep water.** There are no other sites within the region in the existing network which afford protection to this feature. The other options would be Mud Hole rMCZ, South Rigg rMCZ and West of Walney rMCZ.<br>- The site is one of four options within the Tranche Two sites to fill a gap in the region for **Sea-pen and burrowing megafauna communities**. There are no other sites within the region in the existing network which afford protection to this feature. The other options would be Mud Hole rMCZ, South Rigg rMCZ and West of Walney rMCZ. Note that **Sea-pen and burrowing megafauna communities** could be afforded protection by two possible Scottish Nature Conservation MPAs (South Arran NCMPA, Upper Loch Fyne and Loch Goil NCMPA) but given that neither of these are currently designated and that they would be of a shallow depth, the communities are likely to be different to the same habitat in the offshore environment and thus JNCC considers there may still be a gap in the network for this feature.<br><br>**Adequacy** (seeking protection of at least 10% of the known area of each EUNIS Level 3 habitat within each CP2 region):<br>- This site could contribute to increasing the amount of **Subtidal mud** afforded protection within the region (currently 0.8% of known area protected in the existing network). There are several other sites that could also increase the protection of subtidal mud within the network although with currently only 0.8% of the known area afforded protection several sites will be needed to afford protection to a minimum of 10%. |

### 6.15.6 Feature maps

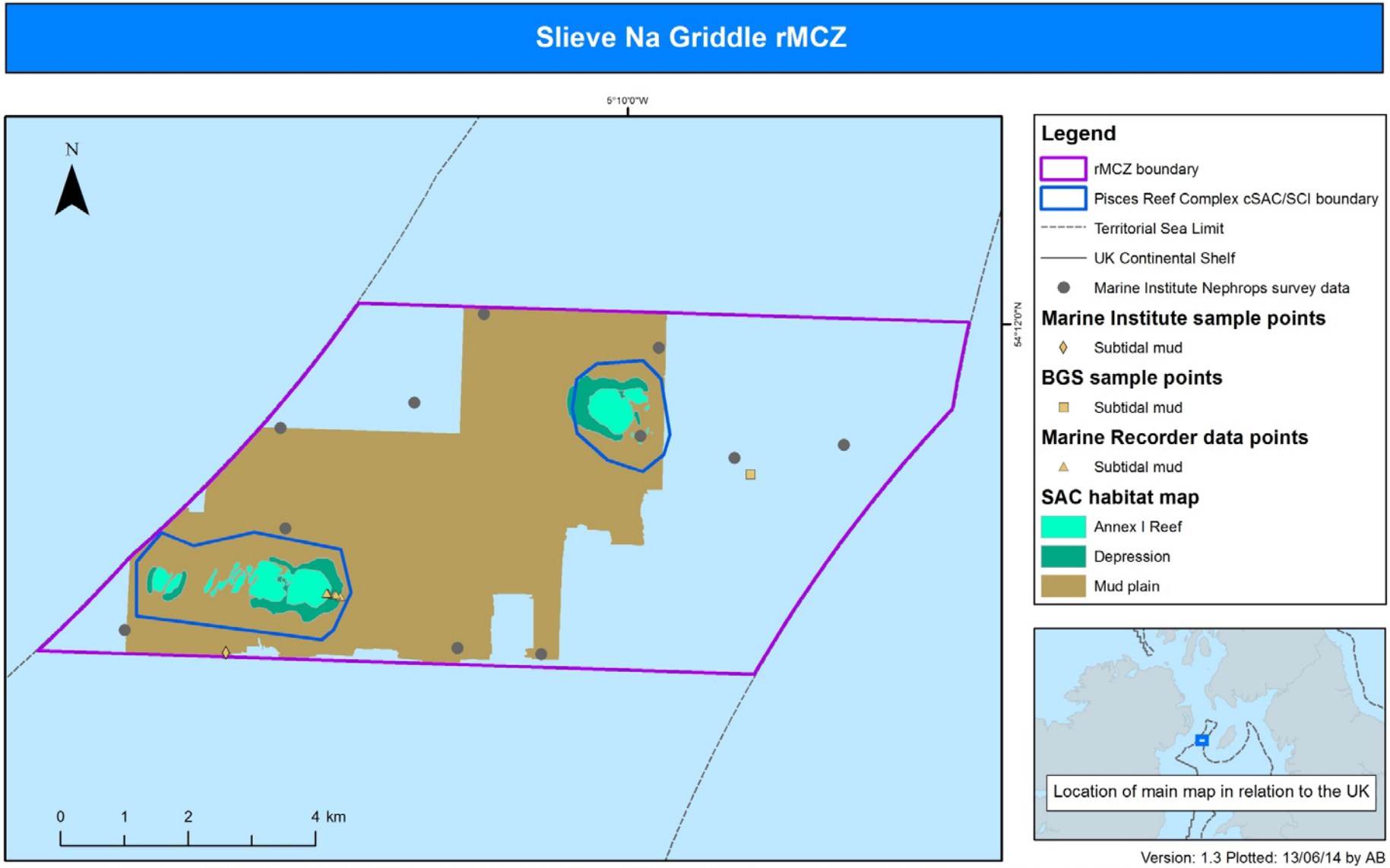



**Figure 33: Map of broad-scale habitats in Slieve Na Griddle rMCZ**

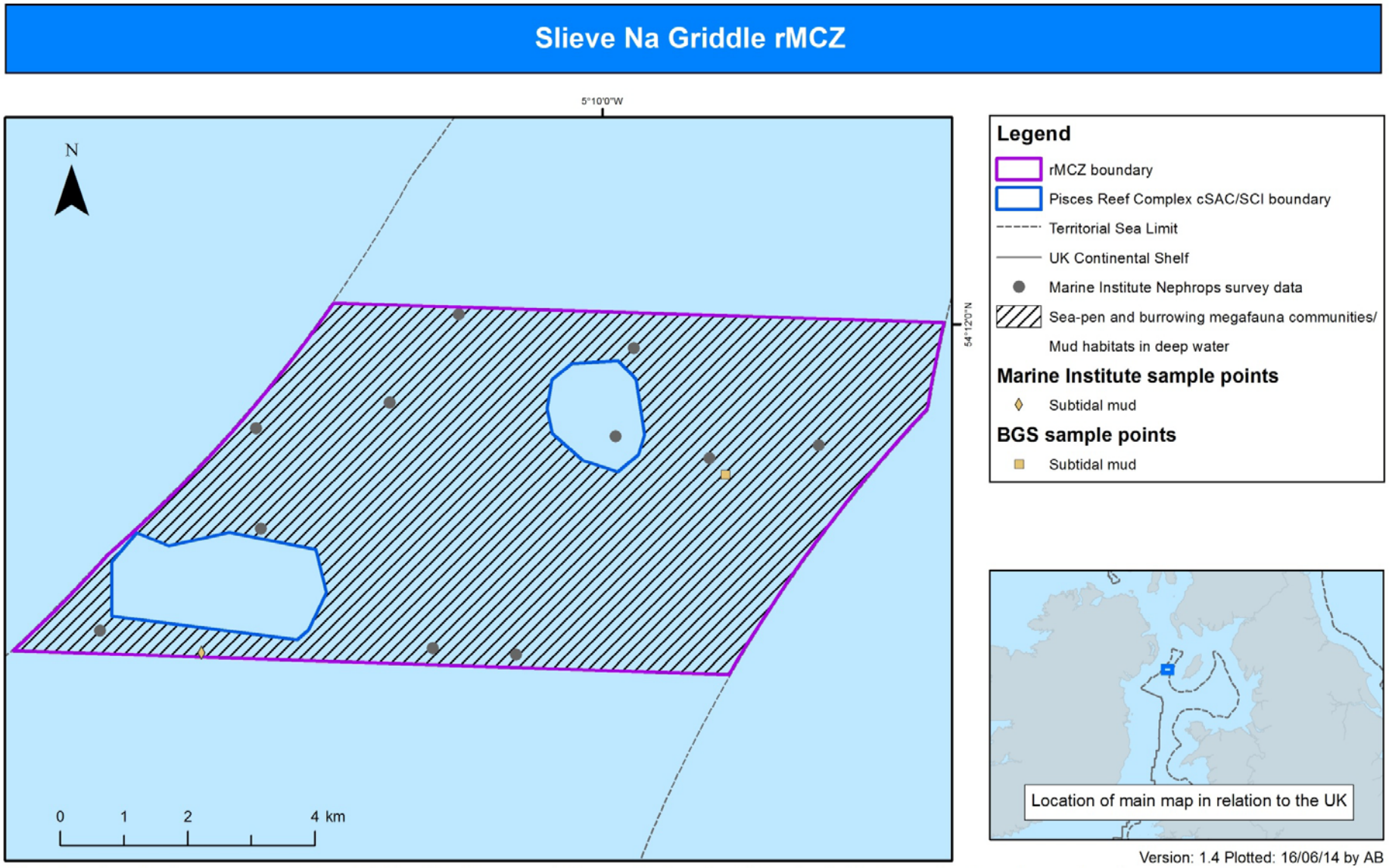



**Figure 34: Map of habitat Features of Conservation Importance and SAC habitat map for Slieve Na Griddle rMCZ**

## 6.16 South of Celtic Deep rMCZ

South of Celtic Deep rMCZ was recommended by the Finding Sanctuary regional MCZ project[72] for the broad-scale habitats **Subtidal coarse sediment, Subtidal sand** and **Subtidal mixed sediments**. The broad-scale habitat **Subtidal mud** and the habitat Feature of Conservation Interest (**FOCI**) **Subtidal sands and Gravels** were noted as present within the site but not recommended by the regional MCZ project; no further advice is provided on **Subtidal sands and Gravels** (see Section 5.1)

An MB0120[32] survey in 2012 identified **Moderate energy circalittoral rock** within in the site and JNCC have assessed this feature for designation in the South of Celtic Deep rMCZ in this 2014 advice.

### 6.16.1 Assessment of feature presence and extent

JNCC's 2014 assessment used the habitat map derived from the EUSeaMap[44] habitat model, together with available point data from the British Geological Survey (**BGS**), Marine Recorder, and the MB0120[32] survey, that collectively form the best available evidence on feature presence and extent. JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce a new confidence assessment in feature presence and feature extent, utilising all available data for the site in 2014 (see Section 5.1). A summary of the assessments is presented below in Table 85. The data and assessments can be viewed in full in Annex 4, Table 139 and Table 140.

**Table 85: South of Celtic Deep rMCZ Evidence Assessment Summary**

| **Site** (Code) | **Feature** (Code) | **Confidence in presence** (previous assessment scores) | **Rationale for confidence in Feature presence** | **Confidence in extent** (previous assessment scores) | **Rationale for confidence in Feature extent** |
|---|---|---|---|---|---|
| **South of Celtic Deep rMCZ** (FS 09) | **Moderate energy circalittoral rock*** (A4.2) | **High** (*) | Ground-truthing sample data from six sample stations demonstrates the presence of Moderate energy circalittoral rock in the site. | **Low** (*) | Ground-truthing sample data from six sample stations in the southern portion of the site indicates the feature's extent in that area. Expert judgement was applied to assign Low confidence because of the patchy distribution of the data, noting that opportunistic backscatter suggests a possibly greater extent of the feature within the site. |
| | **Subtidal coarse sediment** (A5.1) | **High** (Moderate) | Ground-truthing sample data from 27 sample stations demonstrates the presence of Subtidal coarse sediment in the site. | **Moderate** (Low) | Ground-truthing sample data from 27 sample stations distributed throughout the site and opportunistic acoustic data suggesting a heterogeneous seabed demonstrate the extent of the Subtidal coarse sediment. |
| | **Subtidal sand** (A5.2) | **High** (Moderate) | Ground-truthing sample data from 35 sample stations demonstrates the presence of Subtidal sand in the site. | **Moderate** (Low) | Ground-truthing sample data from 35 sample stations distributed throughout the site demonstrates the extent of Subtidal sand in the site. |

| **Site** (Code) | **Feature** (Code) | **Confidence in presence** (previous assessment scores) | **Rationale for confidence in Feature presence** | **Confidence in extent** (previous assessment scores) | **Rationale for confidence in Feature extent** |
|---|---|---|---|---|---|
| | **Subtidal mud** (A5. 3) | **Moderate** (Low) | There are two ground-truth data within the site that indicate the presence of Subtidal mud. | **Low** (Low) | JNCC have low confidence in our knowledge of the extent of Subtidal mud due to the small number of isolated ground-truthing sample data throughout the site, considering the level of survey effort. Expert judgement has been applied when assessing this feature. |
| | **Subtidal mixed sediments** (A5. 4) | **High** (Moderate) | Ground-truth sample data from 20 sample stations demonstrates the presence of Subtidal mixed sediments in the site. | **Moderate** (Low) | Ground-truthing sample data from 20 sample stations distributed throughout the site demonstrates the extent of Subtidal mixed sediments. |
| | **Ocean quahog *(Arctica islandica)**** | **Low** (*) | There is only one sample station recording the presence of Ocean quahog in the site. | **Low** (*) | There is only one record of the Ocean quahog in the site. |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

South Celtic Deep rMCZ was surveyed through the MB0120[32] project in 2012 to collect additional ground-truthing information on the site. Acoustic data were collected opportunistically as a narrow strip between the sampling stations during the survey, but there were insufficient data to generate a full coverage habitat map for the site.

**Moderate energy circalittoral rock** was recently identified as a possible feature for this site. JNCC have **High** confidence in its presence, supported by data from six ground-truth sample stations. JNCC assessed the data using expert judgement to conclude the feature was sufficiently represented in the video tows to constitute the necessary evidence it was clearly present. However, JNCC used expert judgement was to conclude **Low** rather than the Moderate confidence in the extent of this feature suggested by Technical Protocol E[40]. Opportunistic backscatter data from the MB0120[32] survey in 2012 suggest a heterogeneous seabed over much of the site and that this rock feature may be more extensive. Noting the extent of the circalittoral rock may therefore be greater than the current data suggest, JNCC have a **Low** confidence score in our current understanding of the extent of **Moderate energy circalittoral rock** in the site.

JNCC have **High** confidence in the presence and **Moderate** confidence in the extent of the features **Subtidal coarse sediment, Subtidal sand** and **Subtidal mixed sediments.** Our **High** confidence in the presence for each feature is supported by at least 20 ground-truthing sediment sample points from MB0120[32] and many BGS sample points within the site. Whilst a 'new' habitat map is not available for this site, the level of survey effort and the distribution of sampling stations within the MB0120[32] survey are sufficient to provide **Moderate** confidence in the extent of **Subtidal coarse sediment, Subtidal sand** and **Subtidal mixed sediments.**

JNCC have **Moderate** confidence in the presence and **Low** confidence in the extent of the feature **Subtidal mud**. Our **Moderate** confidence is based on the ground-truth data points within the site (two sediment samples with particle size analysis (PSA) information). However, these data are isolated in distribution and do not match the mapped extent of the feature shown in the map from the EUSeaMap[44] habitat model. Consequently, JNCC used expert judgement to conclude **Low** confidence in feature extent. Note that JNCC advised previously in 2012 that the feature **Subtidal mud** should not be considered as a feature for designation in this site due to the area of the feature (4km$^2$), noting it was unlikely a GMA could be achieved to ensure the feature attained favourable condition. While the two isolated samples confirm the presence of **Subtidal mud** in the site, JNCC note that the PSA results for these two stations show the percentage of mud particles within the samples is close to the Folk category threshold[60] (20% mud), with the remaining component of the samples being sand (over 70% of the composition for both samples). Whilst the strict classification of these samples into a habitat type using the PSA results suggests they are both **Subtidal Mud**, they are clearly more similar to the coarser-grained habitats present in the rest of the site. Exploratory analysis of the infaunal data for these two stations suggest that the biota present within the samples are not typical of those associated with Subtidal mud communities. Therefore we believe that the **Subtidal mud** in this site is a poor example of the feature and it would not be appropriate for designation.

JNCC have **Low** confidence in the presence and distribution of the species FOCI **Ocean quahog (*Arctica islandica*)** that has only been recorded at one sample station within the site, from the 2012 MB0120[32] survey. There are no previous records of this species within the site. Therefore, **Low** confidence in the presence and distribution of the feature has been assigned due to the single record available.

### 6.16.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of our confidence in feature condition and the General Management Approach (**GMA**) proposed are presented below in Table 86 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 86 Summary of JNCC's conservation advice for features in South of Celtic Deep rMCZ**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **South of Celtic Deep rMCZ** (FS 09) | **Moderate energy circalittoral rock*** (A4.2) | **Low** (*) | **Maintain** (*) |
| | **Subtidal coarse sediment** (A5.1) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal sand** (A5.2) | Low (Low) | **Recover** (Recover) |
| | **Subtidal mud** (A5. 3) | **Low** (Low) | **Maintain** (Recover) |

| | | | |
|---|---|---|---|
| | **Subtidal mixed sediments** (A5. 4) | **Low** (Low) | **Recover** (Recover) |
| | **Ocean quahog *(Arctica islandica)**** | **Low** (*) | **Recover** (*) |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

In 2012[24], JNCC proposed that the features **Subtidal coarse sediment**, **Subtidal sand** and **Subtidal mixed sediments**, recommended by the regional MCZ project, should have a **Recover** GMA. Our advice remains unchanged in 2014 for these features. In addition we propose a **Maintain** GMA for the additional features **Moderate energy circalittoral rock** and **Subtidal mud** and a **Recover** GMA for the FOCI **Ocean quahog (*Arctica islandica*)**; refer to the Vulnerability Assessments in Annex 7 Table 163 for further detail.

### 6.16.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. Consequently, JNCC has **Low** confidence in the condition of the broad-scale habitats **Moderate energy circalittoral rock, Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mud,** and **Subtidal mixed sediments**. We also have **Low** confidence in the condition of the species FOCI **Ocean quahog (*Arctica islandica*).**

### 6.16.4 Feature Risk

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7.

**Table 87: South of Celtic Deep rMCZ feature risk assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| **South of Celtic Deep rMCZ** (FS 09) | **Moderate energy circalittoral rock** (A4.2) | **Low**<br>Feature is **not moderately or highly vulnerable** to any pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Subtidal coarse sediment** (A5.1) | **Moderate**<br>Feature is **moderately vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal sand** (A5.2) | **Moderate**<br>Feature is **moderately vulnerable** to one/more pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |

| | | | |
|---|---|---|---|
| | **Subtidal mud** (A5. 3) | **Low**<br>Feature is **not moderately or highly vulnerable** to any pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal mixed sediments** (A5. 4) | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Ocean quahog *(Arctica islandica)*** | **Moderate**<br>Feature is **moderately vulnerable** to one/more pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |

### 6.16.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site as a whole have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence and extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 88, Table 89 and Table 90 below.

***Feature assessment***

**Table 88: South of Celtic Deep rMCZ feature data sufficiency assessment**

| **Site** (Code) | **Feature** (Code) | **Q1a. Confidence score of at least moderate for feature presence?** | **Q1b. Is 1a based only on parent habitat being present?** | **Q1c. Confidence score of at least moderate for extent/ distribution?** | **Outcome from Question 1 assessment** |
|---|---|---|---|---|---|
| **South of Celtic Deep rMCZ** (FS 09) | **Moderate energy circalittoral rock** (A4.2) | **Yes** (High confidence) | **No** | **No** (Low confidence) | Move to Question 2 of the feature assessment (see Table 89) |
| | **Subtidal coarse sediment** (A5.1) | **Yes** (High confidence) | **No** | **Yes** (Moderate confidence) | **Data supports designation of feature** |
| | **Subtidal sand** (A5.2) | **Yes** (High confidence) | **No** | **Yes** (Moderate confidence) | **Data supports designation of feature** |
| | **Subtidal mud** (A5. 3) | **Yes** (Moderate confidence) | **No** | **No** (Low confidence) | Move to Question 2 of the feature assessment (see Table 89) |
| | **Subtidal mixed sediments** (A5. 4) | **Yes** (High confidence) | **No** | **Yes** (Moderate confidence) | **Data supports designation of feature** |
| | **Ocean quahog *(Arctica islandica)*** | **No** (Low confidence) | **N/A** | **N/A** | Move to Question 2 of the feature assessment (see Table 89) |

## Table 89: South of Celtic Deep rMCZ assessment of additional conservation/ecological considerations

| Site (Code) | Feature (Code) | Q2a: Does the feature fill a 'big gap' in the network AND have confidence score of at least moderate for feature presence? | Q2b: Is the feature at high risk of damage? | Outcome from Question 2 assessment |
|---|---|---|---|---|
| **South of Celtic Deep rMCZ** (FS 09) | **Moderate energy circalittoral rock** (A4.2) | **Maybe** – This site could help to increase the amount of Moderate energy circalittoral rock afforded protection within the region (currently 8.3% of the known area protected in the existing network). Confidence in feature presence is high. | **Yes** - This feature is currently at Low risk of damage but is at High risk of damage in the future from the following activities: Fishing -set netting, – potting/creeling, hydraulic dredging, benthic trawling; and Bioprospecting. | **Feature should be further considered** by Defra so that the designation decision is based on consideration of specific circumstances such as conservation benefits and where the precautionary principle is applied. JNCC note that this is also the best option for increasing the amount of Moderate energy circalittoral rock within the region because there is low confidence in the presence and extent of the feature in the alternative site option Western Channel rMCZ. It is also at high risk of damage in the future. |
| | **Subtidal mud** (A5. 3) | **No** – This site is one of seven options to provide a replicate in the region for Subtidal mud in a low energy environment, however as confidence in the feature presence is moderate and feature extent is low, and there are better options in the region. | **No** - This feature is currently at Low risk of damage and there is Moderate risk of damage in the future | **Scientific evidence does not justify designation as this stage.** |
| | **Ocean quahog *(Arctica islandica)*** | **No** – There are no big gaps within the region for this feature and confidence in feature presence is low. | **Yes** - This feature is currently at Moderate risk of damage but there is High risk of damage in the future from the following activities: Bioprospecting; Energy production - at sea (tidal turbines), at sea (wave turbines), at sea (wind turbines); Extraction – sand & gravel, quarrying; Fishing - benthic trawling, hydraulic dredging; Infrastructure - cables & pipelines (Installation), cables & pipelines (Operation), offshore (oil & gas platforms), offshore (wind & wave turbines); and Shipping. | **Feature should be further considered** by Defra so that the designation decision is based on consideration of specific circumstances such as where the precautionary principle is applied. However JNCC note that this feature is based solely on a single record and therefore do not recommend this feature go forward for designation. |

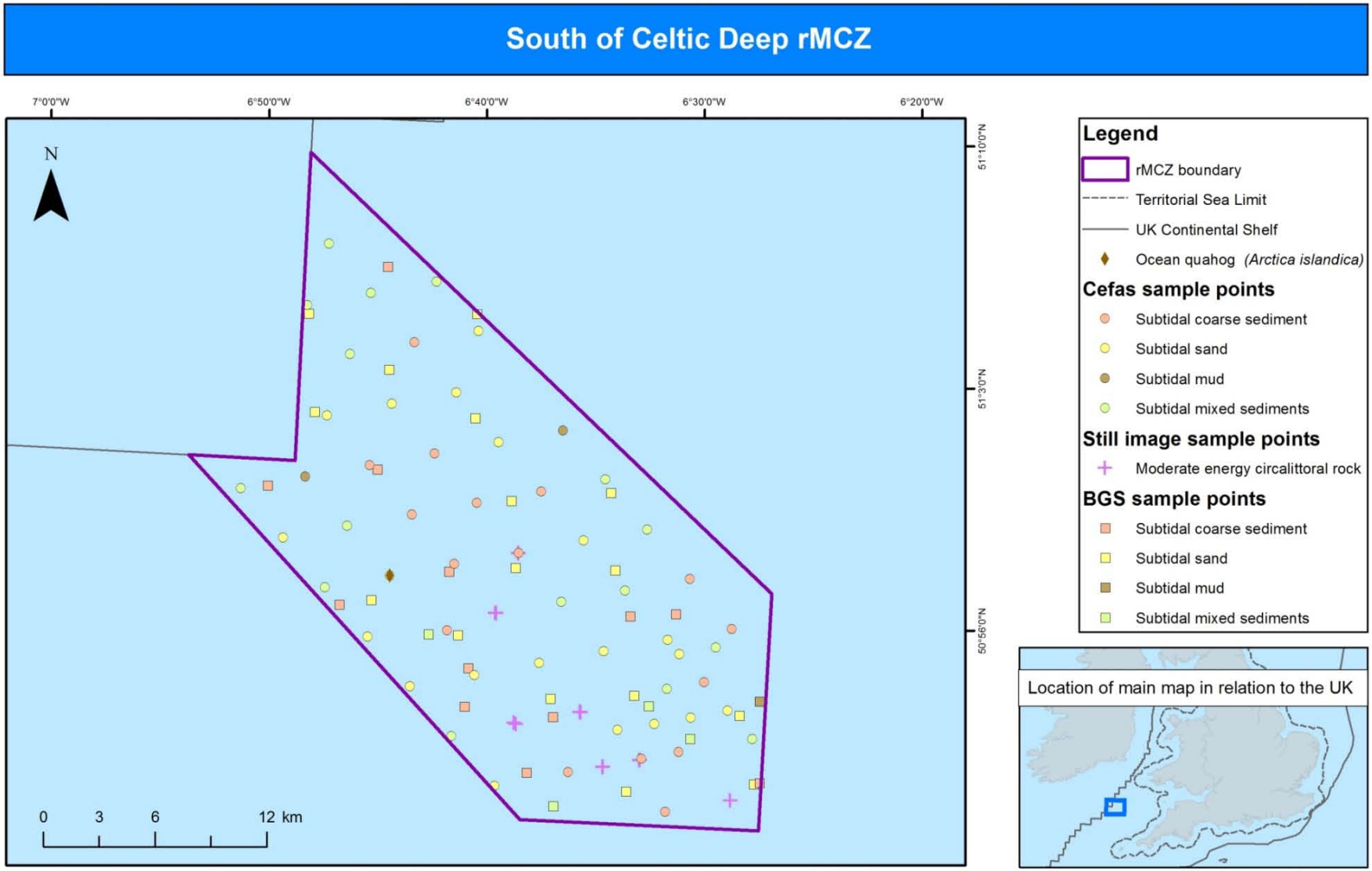
### *Site level assessment*

## Table 90: South of Celtic Deep rMCZ site level assessment

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **Not applicable** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Greater than 75%** |

| | |
|---|---|
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Does this site contribute to filling a big gap in the network? Maybe.**<br>This site could contribute to increasing the percentage of three habitats afforded protection within the region, **Moderate energy circalittoral rock**, **Subtidal coarse sediment** and **Subtidal sand**.<br><br>**Adequacy** (seeking protection of at least 10% of each EUNIS Level 3 habitat within each CP2 region):<br>- This site could help to increase the amount of **Moderate energy circalittoral rock** afforded protection within the region (currently 8.3% of the known area protected in the existing network).<br>- This site could help to increase the amount of **Subtidal coarse sediment** afforded protection within the region (currently 3.2% of the known area protected in the existing network).<br>- This site could help to increase the amount of **Subtidal sand** afforded protection within the region (currently 7.3% of the known area protected in the existing network). |

### 6.16.6 Feature maps




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BGS sample points: Licence JNCC IPR/139-2DY, British Geological Survey ©NERC. Not to be used for navigation. © JNCC 05/2014

**Figure 35: Map of broad-scale habitats and habitat Features of Conservation Importance in South of Celtic Deep rMCZ**

## 6.17 South Rigg rMCZ

South Rigg rMCZ was recommended by the Irish Sea Conservation Zone regional MCZ project[86] for the broad-scale habitat features **Low energy circalittoral rock, Subtidal sand** and **Subtidal mud,** the habitat Features of Conservation Interest (**FOCI**) **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities,** and the species FOCI **Ocean quahog (*Arctica islandica)***.

JNCC is also providing advice on two broad-scale habitats **Subtidal mixed sediments** and **Moderate energy circalittoral rock** recently identified in a habitat map from the JNCC and Cefas North West Irish Sea Mounds (**NWISM**) survey[101] from 2008 and an MB0120[32] survey undertaken in 2012.

### 6.17.1 Assessment of feature presence and extent

Data used in the 2012 assessments[24] have been considered alongside recent acoustic and ground-truthing information from the MB0120[32] survey of the north east of the site, and data provided through Marine Institute stock assessments for *Nephrops*. The EUSeaMap[44] habitat model produced a broad-scale habitat map in areas where a habitat map from survey is not available.

JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce a new confidence assessment in feature presence and feature extent, utilising all available data for the site in 2014 (see Section 5.1). A summary of the assessments is presented below in Table 91. The data and assessments can be viewed in full in Annex 4, Table 141 and Table 142.

**Table 91: South Rigg rMCZ evidence assessment summary**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature presence** (previous assessment scores) | **Rationale for confidence in feature presence** | **Confidence in feature extent** (previous assessment scores) | **Rationale for confidence in feature extent** |
|---|---|---|---|---|---|
| **South Rigg rMCZ** (ISCZ 06) | **Moderate energy circalittoral rock*** (A4.2) | **High** (*) | A habitat map from survey with 26 ground-truthing validation points demonstrate the presence of Moderate energy circalittoral rock in the site. | **High** (*) | The 100% coverage of the feature on a habitat map of the north-west section from survey, with 26 ground-truthing points demonstrates the extent of Moderate energy circalittoral rock in the site. |
| | **Low energy circalittoral rock** (A4.3) | **No Confidence** (Low) | There is no confidence in this feature as there is direct evidence to suggest the rock present is in a moderate energy environment rather | **No Confidence** (Low) | There is no confidence in this feature as there is direct evidence to suggest the rock present is in a moderate energy environment rather than a low energy |

[101] Further information on the JNCC and Cefas North West Irish Sea Mounds survey is available here: http://jncc.defra.gov.uk/page-4736

| Site (Code) | Feature (Code) | Confidence in feature presence (previous assessment scores) | Rationale for confidence in feature presence | Confidence in feature extent (previous assessment scores) | Rationale for confidence in feature extent |
|---|---|---|---|---|---|
| | | | than a low energy environment as suggested by EUSeaMap. | | environment as suggested by EUSeaMap. |
| | **Subtidal sand** (A5.2) | **High** (Low) | There are 20 data points demonstrating the presence of Subtidal sand in the site. | **High** (Low) | The distribution of multiple ground-truthing data demonstrates the extent of Subtidal sand. |
| | **Subtidal mud** (A5.3) | **High** (High) | There are 22 ground-truthing data points (*Nephrops* survey data from the Marine Institute) demonstrate the presence of Subtidal mud in the site. | **High** (Moderate) | Well-distributed ground-truth data (*Nephrops* survey data from the Marine Institute) points demonstrate the extent of Subtidal mud across the central and southern portion of the site. |
| | **Subtidal mixed sediments*** (A5.4) | **High** (*) | A habitat map from survey with 11 ground-truthing validation points and a further three ground-truthing points demonstrate the presence of Subtidal mixed sediments in the site. | **Moderate** (*) | Expert judgement applied due to older classification systems used for some of the data and therefore disparities in how the features were assigned, resulted in the confidence score for Subtidal mixed sediments being amended from high to moderate. |
| | **Mud habitats in deep water** | **High** (High) | There are 22 well-distributed ground-truthing data (*Nephrops* survey data points from the Marine Institute) and EUSeaMap data indicating low energy across the site demonstrate the presence of Mud habitats in deep water | **High** (Moderate) | There are 21 well-distributed ground-truthing data (*Nephrops* survey data points from the Marine Institute), predominantly across the southern portion of the site demonstrate the extent of Mud habitats in deep water in the site. |
| | **Sea-pen and burrowing megafauna communities** | **High** (High) | There are 19 well-distributed ground-truth data (*Nephrops* survey burrow data points from the Marine Institute) demonstrate the presence of Sea-pen and burrowing megafauna communities in the site. | **High** (Moderate) | There are 19 well-distributed ground-truth data (*Nephrops* survey burrow data points from the Marine Institute) that demonstrate the extent of Sea-pen and burrowing megafauna communities in the site. |
| | **Ocean quahog (*Arctica islandica*)** | **Low** (Moderate) | There are only two records between 6-12 years old showing the presence of live Ocean quahog in the site. | **Low** (Low) | There are only two records to demonstrate the distribution of Ocean quahog in the site and no indication of a wider spatial extent or a particular area in the site. |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

The broad-scale habitat feature **Moderate energy circalittoral rock** was identified within the site as an output of the NWISM 2008 survey[101]. The acoustic and ground-truthing data from the survey was used to produce a habitat map of the north-west corner of South Rigg rMCZ (See Figure 36), and combined with other evidence available showing bedrock and the fauna characteristic of moderate energy habitats *(Johnston* et al. 2002*).* Consequently, JNCC have **High** confidence in the presence and extent of the **Moderate energy circalittoral rock** feature within the site.

**Low energy circalittoral rock** was recommended by the regional MCZ project based on the modelled habitat and energy layers from the UKSeaMap[43] project. The wider area is characterised as a low energy environment within the modelled layers from the UKSeaMap[43] and EUSeaMap[44] projects, therefore the

modelled rock habitat was also assumed to be the **Low energy circalittoral rock** feature. However, JNCC note the energy layers are based on models with a coarse spatial resolution with each predicted value covering a wide area of seabed; with the likelihood that the model will not capture smaller areas of higher energy created by local topographic variations in the seabed. The 2008 NWISM survey[101] did not document any evidence of communities characteristic of a low energy environment within the rock feature surveyed, which overlaps the habitat predicted as low energy by the models. Therefore we have evidence from survey that suggests the area surrounding the predicted area of **Low energy circalittoral rock** is representative of a moderate energy environment. Consequently, JNCC have **No confidence** in the presence of **Low energy circalittoral rock** within the site.

Whilst JNCC are not advising on **Low** or **High energy circalittoral rock** within the site, we note the likelihood of small areas of both habitat types being present due to the effect on local water movement of the large topographic changes from the rock peaks to soft sediment channels amongst the rock. Such changes will create the conditions for fine-scale variations in community structure over the whole rocky outcrop. There are some older data suggesting **High energy circalittoral rock** from the 2003 North Channel Peaks survey which was incorporated into the 2008 NWISM report[101]. However, the data were presented using older biotope classification systems that have subsequently been redefined, making it more likely that the energy level is moderate given the communities identified during more recent surveys.

**Subtidal sand** was assigned a **Low** confidence in presence and extent in 2012[24], as the only data available for the feature were derived from the UKSeaMap[43] models; there were no further ground-truth evidence to support the feature within their modelled extent in the site. The 2012 survey by the MB0120[32] project provided 12 ground-truth points located within the EUSeaMap[44] modelled extent of **Subtidal sand**, that confirm the presence of the feature in the north-east corner of the rMCZ (see Figure 36). Furthermore, a single PSA point from the Marine Institute (Republic of Ireland) confirms the presence of **Subtidal sand** within the modelled extent. Consequently, JNCC have **High** confidence in both presence and extent of the feature in 2014.

**Subtidal mud** was originally assigned **High** confidence in feature presence and **Moderate** confidence in feature extent in 2012. JNCC continue to have **High** confidence in its presence in 2014, on the basis that the Marine Institute (Republic of Ireland) have undertaken annual *Nephrops* underwater TV surveys between 2003 and 2011 that show the presence of *Nephrops* burrows across the southern portion of the site; a *Nephrops* community is indicative of mud habitats. Some video stations from the Marine Institute surveys are located close to or within the modelled extent of **Subtidal sand** and show a far lower *Nephrops* burrow density (sometimes with zero burrows) than those stations further south within the extent of **Subtidal mud**, as predicted by the EUSeaMap[44] habitat model. These data support the predicted change in sediment type across the site and the points have not been included as evidence of **Subtidal mud** (see Section 5.1 for more information). The BGS sample point classed as mud, used previously in the 2012 assessment, falls within the silt polygon of the habitat map from the NWISM survey[101] in the north-west

corner of the site, further confirming the presence of the feature in that location. The MB0120[32] survey in 2012 collected eight sediment samples within the mapped extent of **Subtidal mud** between the rock and sand polygons. The NWISM survey report[101] provides a clarification of the presence of sediments in and around the bedrock outcrops in the north-west of the site. There are also a further five PSA data points collected by the Marine Institute between 2003 and 2007 confirming the presence of **Subtidal mud** outside of the habitat map produced from the NWISM survey[101]. All these sources of information now available in 2014 support JNCC increasing our in confidence in feature extent from **Moderate** to **High.**

The habitat map from the NWISM survey[101] shows the extent of **Subtidal mixed sediments** with both underpinning video tow data and grab samples. There are a further three data points collected during the MB0120[32] survey, which identify the feature in the north-east portion of the site, beyond the boundary of the NWISM survey map[101]. JNCC has **High** confidence in presence of the feature based on these data. Whilst the three MB0120[32] sample points do not match the underlying polygon feature from the EUSeaMap[44] model, we have higher confidence in the classification of the recent ground-truth data. The video data from the NWISM survey[101] confirm various levels of sediment veneer on and amongst the rocky outcrops although there are some disparities between older data using different classification systems and the recently recorded data using the current EUNIS classification. Consequently, JNCC used expert judgement to review all the data and concluded we have in **Moderate** confidence in extent due to some uncertainties in the available data.

JNCC gave advice on the two habitat FOCI **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities** in 2012. Both FOCI were assigned **High** confidence in presence and **Moderate** confidence in extent. Both habitat FOCI can be components of the feature **Subtidal mud**[49]. Taking into consideration the distribution of the qualifying *Nephrops* burrow data across the southern and central portions of the site (see Section 5.1), we have **High** confidence that the extent of **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities** is the same as that of **Subtidal mud**.

Should South Rigg rMCZ be designated by Defra, JNCC advise that **Mud habitats in deep water** should not be a designated feature of the site if the **Subtidal mud** and **Sea-pen and burrowing megafauna communities** features are designated. Figure 37 clearly shows these three habitats share the same spatial extent. JNCC consider there is limited extra conservation value in designating **Mud habitats in deep water** where it is afforded protection by its parent and component habitats. Please refer to Annex 6 for more information.

The species FOCI **Ocean quahog *(Arctica islandica)*** was judged to have **Moderate** confidence in presence and **Low** confidence in distribution in 2012. There are no new data for this feature, so our assessment in 2014 used the two original records identifying live Ocean quahog in one location. Owing to additional guidance[41] provided to support Technical Protocol E[40], we now have **Low** confidence in presence and distribution of the species due to the increased age of data since 2012 and the low number of supporting records from a single location, with no evidence of the feature in any other part of the site.

Additionally it should be noted that **Ocean quahog *(Arctica islandica)*** was not identified in the recent MB0120[32] survey in 2012, further supporting the **Low** confidence scores.

### 6.17.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of our confidence in feature condition and the General Management Approach (**GMA**) proposed are presented below in Table 92 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 92: Summary of JNCC's conservation advice for features in South Rigg rMCZ**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **South Rigg rMCZ** (ISCZ06) | **Moderate energy circalittoral rock*** (A4.2) | **Low** (*) | **Maintain** (*) |
| | **Low energy circalittoral rock** (A4.3) | **Not Assessed** (Low) | **Not Assessed** (Recover) |
| | **Subtidal sand** (A5.2) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal mud** (A5.3) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal mixed sediments*** (A5.4) | **Low** (*) | **Maintain** (*) |
| | **Mud habitats in deep water** | **Low** (Low) | **Recover** (Recover) |
| | **Sea-pen and burrowing megafauna communities** | **Low** (Low) | **Recover** (Recover) |
| | **Ocean quahog** (*Arctica islandica*) | **Low** (Low) | **Recover** (Recover) |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

The regional MCZ project proposed a **Recover** GMA for the six features originally recommended in 2011. In 2012[24], JNCC's concurred these GMAs were appropriate due to the moderate to high vulnerability of the features to the pressures associated with fishing activities, for which the evidence indicated were occurring over the features. In 2014, JNCC proposes a **Recover** GMA for the recently identified feature **Sea-pen and burrowing megafauna communities** due to its moderate or high vulnerability to the same pressures from benthic trawling occurring across its extent in the site. JNCC propose a **Maintain** GMA for **Subtidal mixed sediments** and **Moderate energy circalittoral rock;** we do not offer any GMA for **Low energy circalittoral rock** due to the lack of evidence confirming its presence in the site.

In 2014, JNCC continue to propose a **Recover** GMA for the features exposed and vulnerable to fishing pressures which the Vessel Monitoring System (**VMS**) data confirmed to occur across the known extent of **Subtidal sand**, **Subtidal mud**, **Mud habitats in deep water**, **Sea-pen and burrowing megafauna communities** and **Ocean quahog** (***Arctica islandica***). For further information, see the vulnerability assessment in Annex 7 Table 164.

### 6.17.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. With no further evidence to confirm the condition, and low sensitivity to the associated pressures, confidence in feature condition of all the Broad-scale habitat features in the site is **Low**.

The same judgement applies to the habitat FOCI **Sea-pens and burrowing megafauna communities** where, although we now have high confidence in extent of the feature, there is no further evidence to strengthen confidence in feature condition and therefore JNCC have **Low** confidence in feature condition. Note that **Mud habitats in deep water** has been expertly judged as having **Low** confidence in feature condition due to the reasons explained in Section 5.3 on the feature condition methodology.

JNCC have low confidence in both presence and extent of the species FOCI **Ocean quahog (*Arctica islandica*)**, therefore our confidence in feature condition is also **Low** since none of the further criteria are applicable to the feature.

### 6.17.4 Feature Risk

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 75.

**Table 93: South Rigg rMCZ feature risk assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| **South Rigg rMCZ** (ISCZ 06) | **Moderate energy circalittoral rock** (A4.2) | **Low** Feature is **not moderately or highly vulnerable** to any pressures. | **High** Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Low energy circalittoral rock** (A4.3) | Feature not assessed | |
| | **Subtidal sand** (A5.2) | **High** Feature is **highly vulnerable** to one/more pressures. | **High** Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Subtidal** | **High** | **Moderate** |

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| | **mud** (A5.3) | Feature is **highly vulnerable** to one/more pressures. | Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal mixed sediments** (A5.4) | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Mud habitats in deep water** | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **Moderate**<br>Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or<br>Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Sea-pen and burrowing megafauna communities** | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Ocean quahog (*Arctica islandica*)** | **High**<br>Feature is **highly vulnerable** to one/more pressures. | **High**<br>Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |

### 6.17.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site as a whole have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence and extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 94, Table 95 and Table 96 below.

***Feature assessment***

**Table 94: South Rigg rMCZ feature data sufficiency assessment**

| Site (Code) | Feature (Code) | Q1a. Confidence score of at least moderate for feature presence? | Q1b. Is 1a based only on parent habitat being present? | Q1c. Confidence score of at least moderate for extent/ distribution? | Outcome from Question 1 assessment |
|---|---|---|---|---|---|
| **South Rigg rMCZ** (ISCZ 06) | **Moderate energy circalittoral rock** (A4.2) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal sand** (A5.2) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal mud** (A5.3) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal mixed sediment** (A5.4) | **Yes** (High confidence) | **No** | **Yes** (Moderate confidence) | **Data supports designation of feature** |

| | | | | | |
|---|---|---|---|---|---|
| | **Mud habitats in deep water** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature, however JNCC advise that this feature is not designated within this site (see Annex 6).** |
| | **Sea-pen and burrowing megafauna communities** | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Ocean quahog (*Arctica islandica*)** | **No** (Low confidence) | **N/A** | **N/A** | Move to Question 2 of the feature assessment (see Table 95) |

## Table 95: South Rigg rMCZ assessment of additional conservation/ecological considerations

| **Site** (Code) | **Feature** (Code) | **Q2a: Does the feature fill a 'big gap' in the network AND have confidence score of at least moderate for feature presence?** | **Q2b: Is the feature at high risk of damage?** | **Outcome from Question 2 assessment** |
|---|---|---|---|---|
| | **Ocean quahog (*Arctica islandica*)** | **No** – There are no 'big gaps' in the region for this feature and confidence in feature presence is low. | **Yes** - This feature is currently at High risk of damage from benthic trawling and there is also a High risk of damage in the future. | **Feature should be further considered** – designation decision to be based on consideration of specific circumstances, for example whether the precautionary principle is applied. However JNCC note that there is low confidence in the presence of this feature and there is no recent evidence to support this feature. The feature also may not meet the viability guidelines outlined in the ENG[26] and therefore JNCC advise that it is not designated as a feature of this site. |

### *Site level assessment*

## Table 96: South Rigg rMCZ site level assessment

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **Not applicable** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Greater than 75%** |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Does this site contribute to filling a big gap in the network? Yes**.<br>This site is one of four options to fill a gap for **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities** which are currently not afforded protection within any sites within the region in the existing network. This site is also one of three options to provide a replicate in the region for **Subtidal sand in 75-200m depth** and **Subtidal mixed sediments in 75-200m water depth**. There are already one replicate for each of these three features considered as afforded protection within the existing network through the 'Big Gaps' assessment. These replicates are within potential Scottish Nature Conservation MPAs which for the purpose of the 'Big Gaps' assessment were considered to be 'designated sites'. See Section 5.5 for more detail. If any of these sites, or specific features within those sites, are not designated by |

| Question | Response |
|---|---|
| | Scottish Government, then there may be additional gaps that arise within the network in the Irish Sea. The site also provides one of three options to provide a replicate in the region for **Moderate energy circalittoral rock in 75-200m depth** and will help increase the amount of this feature afforded protection in the region. This site will also help to increase the amount of **Subtidal mud** afforded protection within the region (currently only 0.8% of known area protected in the existing network). There are several other sites that could also increase the protection of subtidal mud within the network although with currently only 0.8% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% of known area.<br><br>**Representativity** (seeking two examples of each EUNIS Level 3 habitat within each energy category (low, moderate and high) and depth zone (0-10m, 10-75m, 75-200m, 200m+) and two examples of each FOCI within each CP2 region):<br>- This site is one of three options within the Tranche Two sites to provide a replicate in the region for **Moderate energy circalittoral rock in 75-200m depth**. There is currently one site that affords protection to this feature in this depth/energy category within the region in the existing network which is The Maidens SAC. The other option would be Mid St Georges Channel rMCZ and North St Georges Channel rMCZ.<br>- The site is one of three options within the Tranche Two sites to provide a replicate in the region for **Subtidal sand in 75-200m depth**. There is currently one site that affords protection to this feature in this depth/energy category within the region in the existing network which is Clyde Sea Sill potential Nature Conservation MPA (for the purpose of the 'Big Gaps' assessment pNCMPAs were considered to be 'designated sites'. See Section 5.5 for more detail)[87]. The other option would be Mid St Georges Channel rMCZ and North St Georges Channel rMCZ.<br>- The site is one of three options within the Tranche Two sites to provide a replicate in the region for **Subtidal mixed sediments in 75-200m water depth**. There is currently one site that affords protection to this feature in this depth/energy category within the region in the existing network which is Upper Loch Fyne and Loch Goil potential Nature Conservation MPA (for the purpose of the 'Big Gaps' assessment pNCMPAs were considered to be 'designated sites'. See Section 5.5 for more detail)[87]. The other options would be Mid St Georges Channel rMCZ and North St Georges Channel rMCZ.<br>- The site is one of four options within the Tranche Two sites to fill a gap in the region for **Mud habitats in deep water**. There are no sites within the region in the existing network which afford protection to this feature. The other options would be Mud Hole rMCZ, Slieve Na Griddle rMCZ and West of Walney rMCZ.<br>- The site is one of four options within the Tranche Two sites to fill a gap in the region for **Sea-pen and burrowing megafauna communities**. There are no sites within the region in the existing network which afford protection to this feature. The other options would be Mud Hole rMCZ, Slieve Na Griddle and West of Walney rMCZ. Note that **Sea-pen and burrowing megafauna communities** could be afforded protection by two possible Scottish Nature Conservation MPAs (South Arran NCMPA, Upper Loch Fyne and Loch Goil NCMPA) but given that neither of these are currently designated and that they would be of a shallow depth, the communities are likely to be different to the same habitat in the offshore environment and thus JNCC considers there may still be a gap in the network for this feature.<br><br>**Adequacy** (seeking protection of at least 10% of known area of each EUNIS Level 3 habitat within each CP2 region):<br>- This site will help to increase the amount of **Moderate energy circalittoral rock** afforded protection within the region (currently 5.2% of the known area protected in the existing network). |

| Question | Response |
|---|---|
| | - This site will help to increase the amount of **Subtidal mud** afforded protection within the region (currently 0.8% of the known area protected in the existing network). There are several other sites that could also increase the protection of subtidal mud within the network although with currently only 0.8% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% of known area. |

### 6.17.6 Feature maps

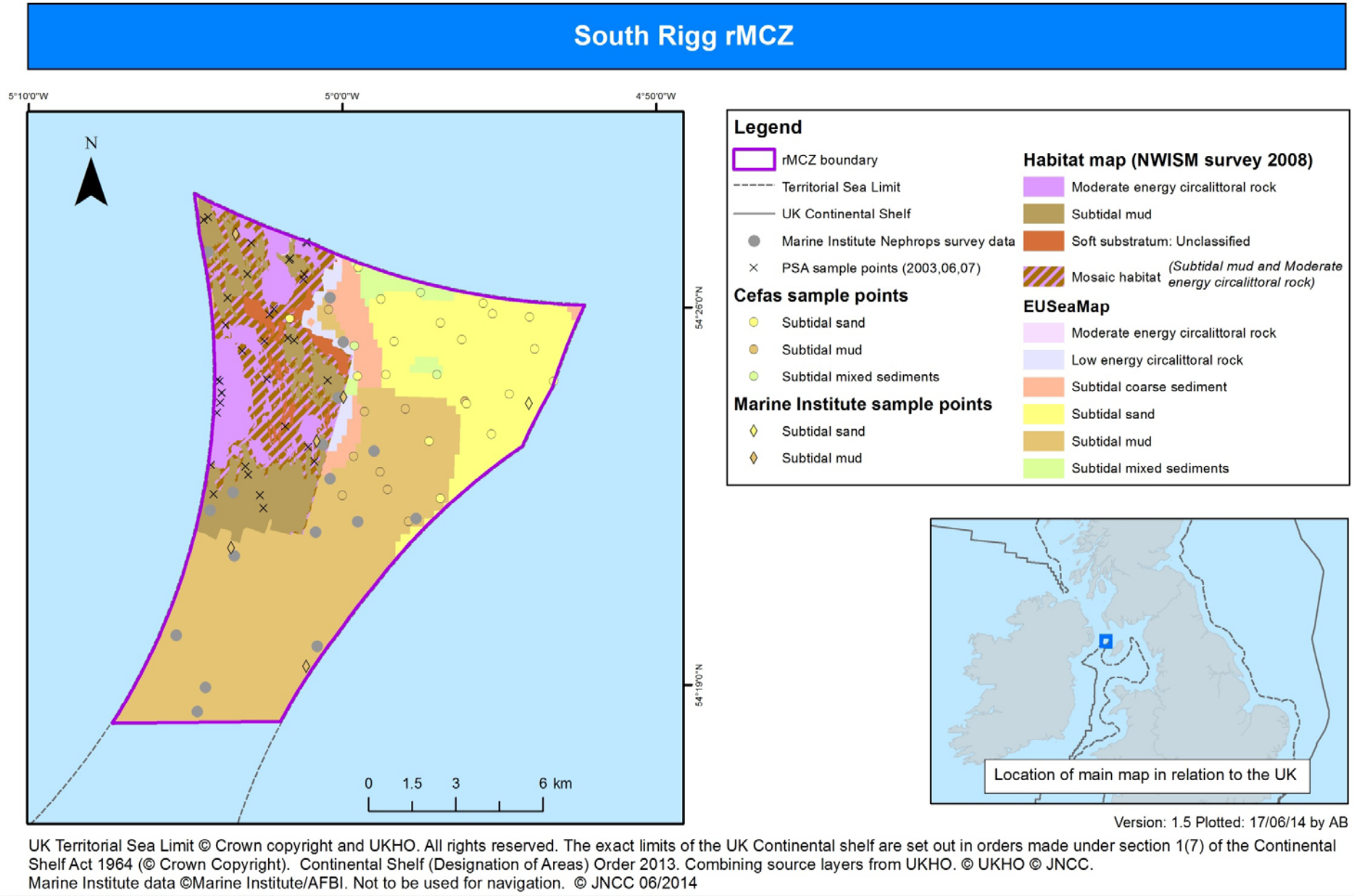
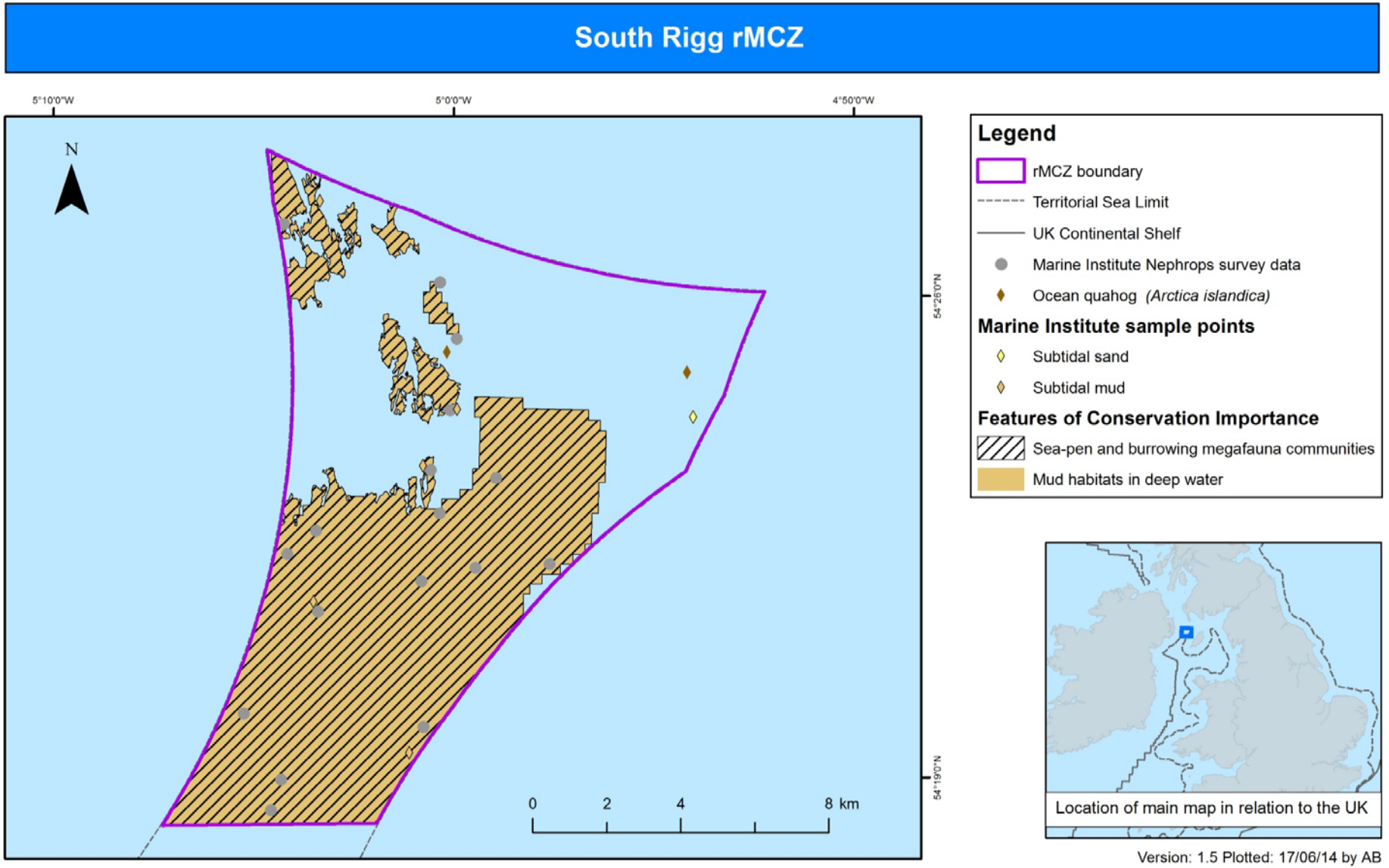



**Figure 36: Map of broad-scale habitats in South Rigg rMCZ**




UK Territorial Sea Limit © Crown copyright and UKHO. All rights reserved. The exact limits of the UK Continental shelf are set out in orders made under section 1(7) of the Continental Shelf Act 1964 (© Crown Copyright). Continental Shelf (Designation of Areas) Order 2013. Combining source layers from UKHO. © UKHO © JNCC.
Marine Institute data ©Marine Institute/AFBI. Not to be used for navigation. © JNCC 06/2014

**Figure 37: Map of habitat and species Features of Conservation Importance in South Rigg rMCZ**

## 6.18 South-West Deeps (West) MCZ

South-West Deeps (West) MCZ was designated in November 2013 for the broad-scale habitat features **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mixed sediments** and the geomorphological feature **Celtic Sea Relict Sandbanks**.

Following JNCC's 2013 post-consultation advice on South-West Deeps (West) MCZ, further ground-truthing data were acquired that identified the areas of **Subtidal mud**, the habitat Feature of Conservation Interest (**FOCI**) **Mud habitats in deep water** and specimens of the species FOCI **Fan mussel** (***Atrina fragilis***).

### 6.18.1 Assessment of feature presence and extent

JNCC followed Technical Protocol E[40] and the associated guidance[41] to produce a new confidence assessment in presence and extent for the recently identified features, utilising all available data for the site in 2014 (see Section 5.1). A summary of the assessments is presented below in Table 97. The data and assessments can be viewed in full in Annex 4, Table 143 and Table 144.

**Table 97: South-West Deeps (West) MCZ Evidence Assessment Summary**

| Site | Feature (Code) | Confidence in feature presence (previous assessment scores) | Rationale for confidence in feature presence | Confidence in feature extent (previous assessment scores) | Rationale for confidence in feature extent |
|---|---|---|---|---|---|
| South-West Deeps (West) MCZ | **Subtidal mud*** (A5.3) | **High** (*) | There are nine ground-truth samples collected as part of MB0120 survey that demonstrate the presence of Subtidal mud in the site. | **Moderate** (*) | This was a recently identified feature found during a MB0120 survey. The extent of Subtidal mud has been modelled by BGS using new data acquired. As the extent is modelled and only supported by a limited number of ground-truth points, expert judgement has been used to assign a Moderate confidence in extent. |
| | **Mud habitats in deep water*** | **High** (*) | There are nine ground-truth samples collected as part of MB0120 survey that demonstrate the presence of Mud habitats in deep water in the site. | **Moderate** (*) | This is a recently identified feature found during a MB0120 survey. The extent of the feature has been modelled by BGS using new data acquired. As extent is modelled and only supported by a limited number of ground-truth points, expert judgement has been used to assign a Moderate confidence in extent. |
| | **Fan mussel (*Atrina fragilis*)*** | **Low** (*) | Specimens were identified from by two images taken during a single video transect during the MB0120 survey in 2013. | **Low** (*) | Distribution of Fan mussel only known from by two images taken during single video transect during the MB0120 survey in 2013 |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

Data have been acquired for South-West Deeps (West) MCZ since JNCC's 2013 advice[25]. A MB0120[32] survey collected multibeam sonar and ground-truth samples across the site to increase the evidence base available for South-West Deeps (West) MCZ, particularly to support site management work. This survey identified the presence of **Subtidal mud** and **Mud habitats in deep water** at nine locations within the site, and recording the species FOCI **Fan mussel** (***Atrina fragilis***) during a single video transect.

Further analysis of the ground-truth samples collected in 2013 has been undertaken as part of the "*Mapping seabed sediments of the Swallow Sand and South-West Deeps (West) MCZs*"[102] contract that was undertaken by BGS in 2014. Their report provides statistical information on the likelihood of finding different broad-scale habitat types across the site, based on the proportion of mud, sand and gravel particle fractions found within the sediment samples collected in 2013. While no acoustic information was available to the support the contract outputs, BGS produced a map predicting the 'Most probable EUNIS class' across the site.

Following Technical Protocol E[40], JNCC have **High** confidence in the presence of **Subtidal mud** and **Mud habitats in deep water**, since there are nine sample points collected in 2013 that demonstrate the presence of this feature at multiple locations within the site.

The habitat map used in the original assessment (UKSeaMap[43]) did not identify the presence of the **Subtidal mud** and **Mud habitats in deep water**, within the site. In the absence of any habitat map from survey, JNCC used expert judgement to assess the extent of the features within the site using the recently acquired sample data alongside the revised BGS interpreted map[102]. JNCC have **Moderate** confidence in the extent of features, noting that strict adherence to Technical Protocol E[40] would assign Low confidence to the extent of these features because they are a new features to the site without any previous mapped extent or any new habitat map available from survey available for this site. However, JNCC consider the number of samples recording the feature's presence and the clustering of seven of the nine points provides evidence to justify a **Moderate** confidence in extent for this feature. Furthermore, while the outputs from the BGS contract have modelled an extent for the most likely area to find **Subtidal mud**, this is not be considered to be a 'habitat map from survey' as stated within Technical Protocol E[40] and accompanying guidance[41], as broad coverage acoustic data were not used in its production. Nevertheless, the BGS product is based on field survey observations and derived using standard cartographic methods it is appropriate to indicate the extent of the feature and lending further support to JNCC's **Moderate** confidence in feature extent within the site.

Specimens of **Fan mussel (*Atrina fragilis*)** were identified in two still images along a single video transect within the site. JNCC considered these observations to be a single sample for the purposes of confidence

[102] LARK, R.M. 2014. Mapping seabed sediments of the Swallow Sand and South-West Deeps (West) MCZs. *British Geological Survey Internal Report*, OR/14/015. 18pp.

assessments. JNCC reviewed the images identifying the presence of the species and concluded that only one of the images identified a live example of a **Fan mussel (*Atrina fragilis*)**; the second image showed a Fan mussel shell lying flat on the seabed rather than the more typically observed 90 degrees to the seabed for live specimens. Following Technical Protocol E[40], since the evidence for the feature is only comes from a single record JNCC have **Low** confidence for both presence and extent of the **Fan mussel (*Atrina fragilis*)** in the site. It is worth noting the national rarity of sightings of this species with National Biodiversity Network[84] and Ocean Biogeographic Information Systems[85] records showing less than 10 sightings in whole south-west region from all records, mostly accidental collections from trawling.

### 6.18.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of our confidence in feature condition and the General Management Approach (**GMA**) proposed are presented below in Table 98 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 98: Summary of JNCC's conservation advice for features in South West Deeps (West) MCZ**

| Site | Feature (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **South-West Deeps (West) MCZ** | **Subtidal mud*** (A5.3) | **Low** (*) | **Recover** (*) |
| | **Mud habitats in deep water*** | **Low** (*) | **Recover** (*) |
| | **Fan mussel (*Atrina fragilis*)*** | **Low** (*) | **Recover** (*) |

*These features are recently identified and added to our advice; therefore they have no previous assessment score.

JNCC proposed a **Recover** GMA for the designated features **Subtidal coarse sediment**, **Subtidal sand** and **Subtidal mixed sediments**, and a **Maintain** GMA for **Celtic Sea Relict Sandbanks;** full details can be found in our 2013 advice[25].

For the recently identified features **Subtidal mud, Mud habitats in deep water** and **Fan mussel** (***Atrina fragilis***), there is evidence of benthic fishing activity occurring over the extent or distribution of the features, to which they are either moderately or highly sensitive. Due to the intensity of activity taking place, JNCC propose a **Recover** GMA for these features; see site's feature Vulnerability Assessments in Annex 7 Table 165 for more detail.

### 6.18.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. Consequently, JNCC's confidence in the condition of the features **Subtidal mud**, **Mud habitats in deep water** and **Fan**

**mussel (*Atrina fragilis*)** is **Low.** Note that **Mud habitats in deep water** has been expertly judged as having **Low** confidence in feature condition due to the reasons explained in Section 5.3 on the feature condition methodology.

### 6.18.4 Feature risk

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7.

**Table 99: South-West Deeps (West) MCZ feature risk assessment**

| Site | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| South-West Deeps (West) MCZ | **Subtidal mud** (A5.3) | **Moderate** Feature is **moderately vulnerable** to one/more pressures. | **Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Mud habitats in deep water** | **Moderate** Feature is **moderately vulnerable** to one/more pressures. | **Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Fan mussel (*Atrina Fragilis*)** | **Moderate** Feature is **moderately vulnerable** to one/more pressures. | **Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to one/more pressures. |

### 6.18.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site as a whole have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence and extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 100, Table 101 and Table 102 below.

### *Feature assessment*

### Table 100: South-West Deeps (West) MCZ feature data sufficiency assessment

| Site | Feature (Code) | Q1a. Confidence score of at least moderate for feature presence? | Q1b. Is 1a based only on parent habitat being present? | Q1c. Confidence score of at least moderate for extent/ distribution? | Outcome from question 1 assessment |
|---|---|---|---|---|---|
| South-West Deeps (West) MCZ | **Subtidal mud** (A5.3) | **Yes** (High confidence) | **No** | **Yes** (Moderate confidence) | **Data supports designation of feature** |
| | **Mud habitats in deep water** | **Yes** (High confidence) | **No** | **Yes** (Moderate confidence) | **Data supports designation of feature** |
| | **Fan mussel (*Atrina Fragilis*)** | **No** (Low confidence) | **N/A** | **N/A** | Move to Question 2 of the feature assessment (see Table 102) |

### Table 101:South-West Deeps (West) MCZ assessment of additional conservation/ecological considerations

| Site | Feature | Q2a: Does the feature fill a 'big gap' in the network AND have confidence score of at least moderate for feature presence? | Q2b: Is the feature at high risk of damage? | Outcome from Question 2 assessment |
|---|---|---|---|---|
| South-West Deeps (West) MCZ | **Fan mussel (*Atrina Fragilis*)** | **No** – This feature could fill a gap in the region; however, the confidence in feature presence is low. | **No** - This feature is currently at Moderate risk of damage and there is Moderate risk of damage in the future. | **Scientific evidence does not justify designation as this stage**. Note that this feature may not meet the viability guidelines as outlined in the ENG[26]; however there is limited knowledge about what is meant by viability with respect to the Fan mussel (*Atrina fragilis*). |

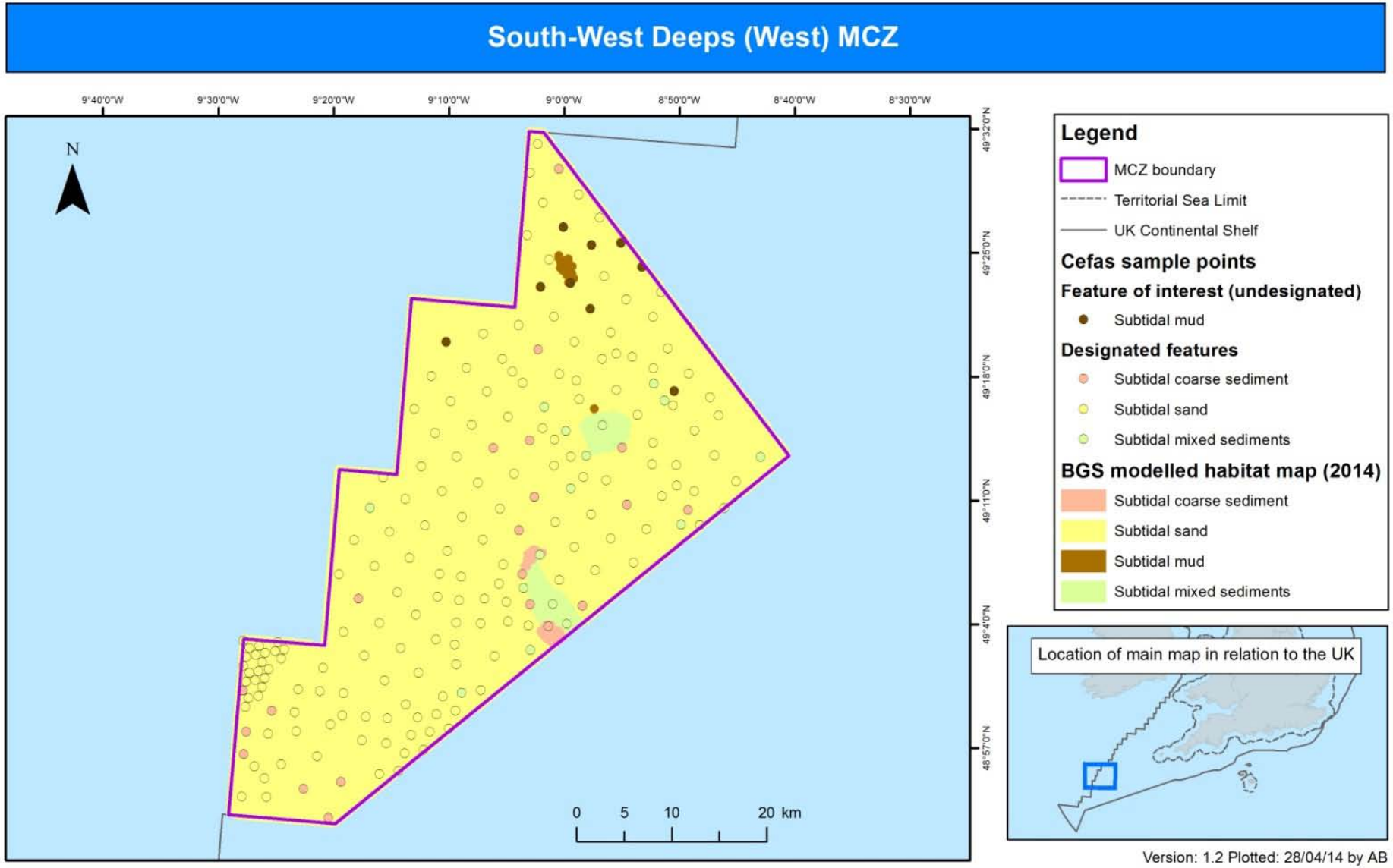
### *Site level assessment*

### Table 102: South-West Deeps (West) MCZ site level assessment

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **Not applicable** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Less than 50%** but note the features covering the rest of site were designated in 2013. |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Do the additional features within the site contribute to filling a big gap in the network?**<br>**Yes**.<br>This site is one of seven options within the Tranche Two which could fill a gap in the region for **Mud habitats in deep water** which is currently not afforded protection within the region in the existing network. This site is also one of two options within the offshore Tranche Two sites to fill a gap in the region for **Fan mussel (*Atrina fragilis*)** which is also not currently afforded protection within the region in the existing network, however scientific evidence does not justify designation at this stage**.** This site would also provide a replicate for **Subtidal mud in a low energy environment**. It would also contribute to increasing the percentage of **Subtidal mud** afforded protection within the region. There are |

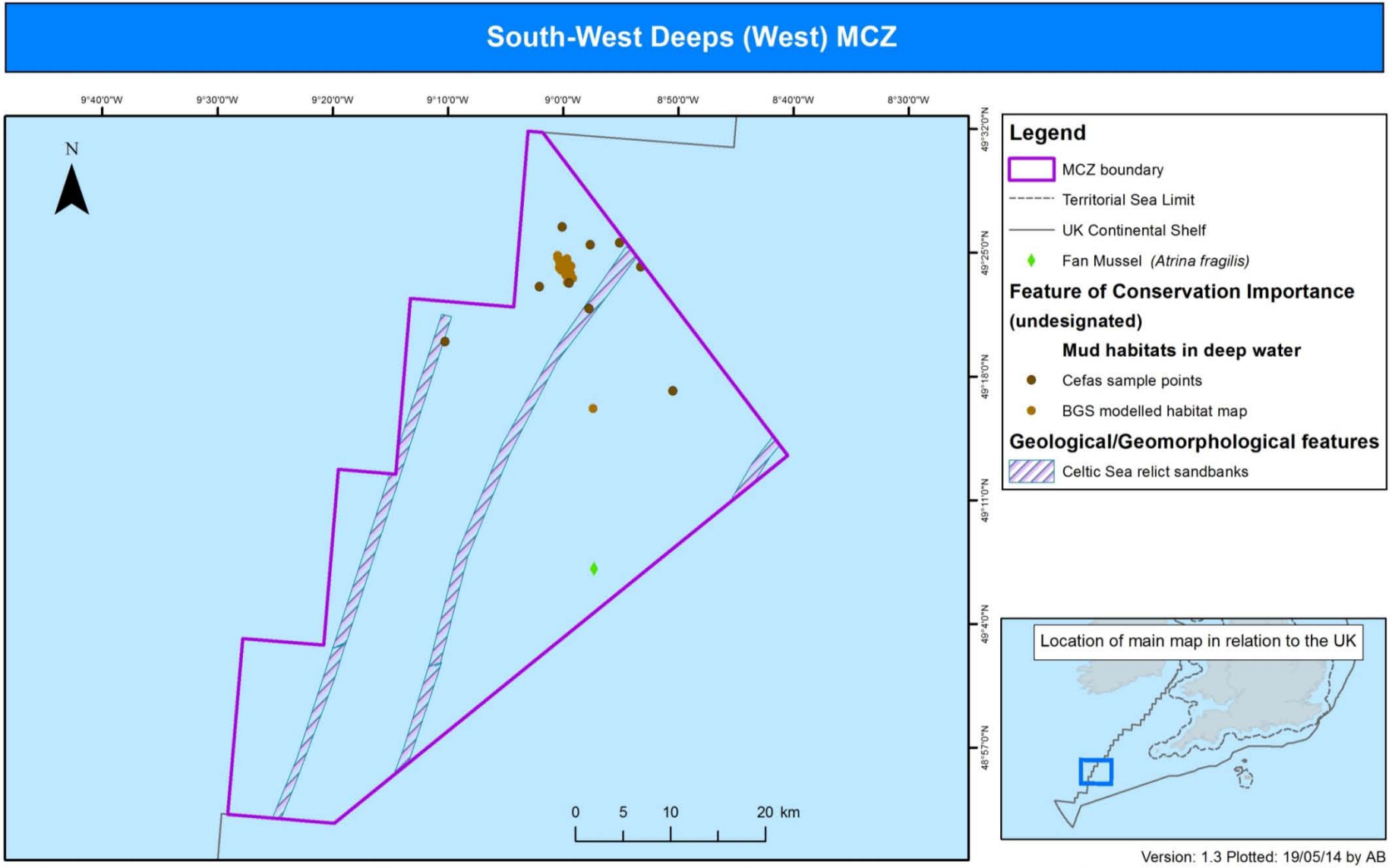
| | |
|---|---|
| | several other sites that could also increase the protection of Subtidal mud within the network although with currently only 2.2% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% of known area.<br><br>**Representativity** (seeking two examples of each EUNIS Level 3 habitat within each energy category (low, moderate and high) and depth zone (0-10m, 10-75m, 75-200m, 200m+) and two examples of each FOCI within each CP2 region):<br>- This site is one of seven options within the Tranche Two sites to provide a replicate in the region for **Subtidal mud in a low energy environment**. There is currently one site that affords protection to this feature in this depth/energy category within the region in the existing network which is the Fal and Helford SAC. The other options would be Celtic Deep rMCZ, East of Celtic Deep rMCZ, East of Haig Fras MCZ, Greater Haig Fras rMCZ, North-West of Jones Bank rMCZ and South of Celtic Deep rMCZ (although for South of Celtic Deep rMCZ we have recommended that the data does not justify designation).<br>- This site is one of seven options within the Tranche Two which could fill a gap in the region for **Mud habitats in deep water**. There are currently no sites which afford protection to this feature within the region in the network. The other options would be Celtic Deep rMCZ, East of Celtic Deep rMCZ, East of Haig Fras MCZ, Greater Haig Fras rMCZ and North-West of Jones Bank rMCZ.<br>- This site is one of two options within the offshore Tranche Two sites to fill a gap in the region for **Fan mussel (*Atrina fragilis*)**, however confidence in the feature presence is low. There are currently no sites that afford protection to this feature within the region in the existing network, however scientific evidence does not justify designation at this stage. The other option for this feature is Greater Haig Fras rMCZ.<br><br>**Adequacy** (seeking protection of at least 10% of known area of each EUNIS Level 3 habitat within each CP2 region):<br>- This site will significantly help to increase the amount of **Subtidal mud** afforded protection within the region (currently 2.2%of the known area of protected in the existing network). There are several other sites that could also increase the protection of Subtidal mud within the network although with currently only 2.2% of the known area afforded protection several sites will be needed to afford protection to the recommended minimum of 10% of known area. |

### 6.18.6 Feature maps




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**Figure 38: Map of broad-scale habitats in South-West Deeps (West) MCZ**




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**Figure 39: Map of habitat Features of Conservation Importance and geological features in South-West Deeps West MCZ**

## 6.19 Western Channel rMCZ

Western Channel rMCZ was recommended by the Finding Sanctuary regional MCZ project[72] for the broad-scale habitats **Moderate energy circalittoral rock**, **Subtidal coarse sediment** and **Subtidal mixed sediment**. Since the regional MCZ project recommended this site, **Subtidal Sand** has been identified within the site and has been considered in the 2014 advice as an additional feature.

An MB0120[32] survey was completed for Western Channel rMCZ in 2012. These recent data contributed to a new habitat map covering 99.4% of the site that displays the extent of **Subtidal coarse sediment** and **Subtidal sand** within the site. Isolated examples **Moderate energy circalittoral rock** were also identified during the survey but not of sufficient extent to be shown on the habitat map.

### 6.19.1 Assessment of feature presence and extent

JNCC's 2014 assessment was conducted using a habitat map produced from MB0120[32] (which covered 99.4% of the site), EUSeaMap[44] and multiple ground-truthing data from MB0120[32] and British Geological Survey (**BGS**). JNCC used Technical Protocol E[40] and the associated guidance[41] to assess our confidence assessment in the presence and extent of features, utilising all data available for the site (see Section 5.1). A summary of these assessments is presented below in Table 103. The data and assessments can be viewed in full in Annex 4, Table 145 and Table 146.

**Table 103: Western Channel rMCZ evidence assessment summary**

| Site (Code) | Feature (Code) | Confidence in feature presence (previous assessment scores) | Rationale for confidence in feature presence | Confidence in feature extent (previous assessment scores) | Rationale for confidence in feature extent |
|---|---|---|---|---|---|
| **Western Channel rMCZ** (FS 12) | **Moderate energy circalittoral rock** (A4.2) | **Low** (Low) | Ground-truthing sample data (video sampling) at five stations show the presence of patchy and isolated clumps of cobbles and boulders on sediment. | **Low** (Low) | Only data from modelled habitats are available to assess the extent of Moderate energy circalittoral rock in the site. The full extent of this feature cannot easily be determined due to its localised and patchy nature. |
| | **Subtidal coarse sediment** (A5.1) | **High** (Moderate) | An almost complete (99.4%) habitat map and >50 ground-truthing sample data demonstrate the presence of Subtidal coarse sediment in the site. | **High** (Low) | An almost complete (99.4%) habitat map demonstrate the extent of Subtidal coarse sediment in the site. |
| | **Subtidal sand** (A5.2) | **Moderate** (*) | An almost complete (99.4%) habitat map with a supporting ground-truthing sample and acoustic data demonstrate the presence of Subtidal sand in the site. | **Moderate** (*) | Interpreted acoustic data provides a habitat map showing the extent of this Subtidal sand feature. However, our confidence in the accuracy of the spatial extent of is reduced to Moderate using expert judgement due to the limited |

| **Site** (Code) | **Feature** (Code) | **Confidence in feature presence** (previous assessment scores) | **Rationale for confidence in feature presence** | **Confidence in feature extent** (previous assessment scores) | **Rationale for confidence in feature extent** |
|---|---|---|---|---|---|
| | | | | | number of ground-truthing sample points within the mapped areas, and a mis-match between samples classified as sub tidal sand and the underlying mapped habitat. |
| | **Subtidal mixed sediments** (A5.4) | **Moderate** (Moderate) | There are six BGS ground-truthing sample points which demonstrate the presence of Subtidal mixed sediments in the site. | **Low** (Low) | The distribution of sampling points and only a mapped extent of Subtidal mixed sediments based on modelled data has meant confidence in feature extent is Low. |

The feature **Moderate energy circalittoral** rock was recommended within the site by the Finding Sanctuary regional MCZ project[72] using a map generated from the UKSeaMap[43] habitat model. The 2012 MB0120[32] survey identified **Moderate energy circalittoral rock** within the site boundary through video tows and images at five sampling stations but did map the feature within the overall habitat map for the site. JNCC used expert judgment to assess **Moderate energy circalittoral rock** to consider if the feature was sufficiently represented within the video tows to constitute evidence verifying the feature presence in the site. Only isolated instances of **Moderate energy circalittoral rock** were present within the video tows and do not demonstrate a sufficiently large enough area to justify recording the feature as present; the minimum areal extent recommended for a biotope in the Marine Habitat Classification for Britain & Ireland version 04.05[103] is a patch of 25m$^2$. The previous judgement of **Low** confidence in the presence of this feature within the site remains unchanged in this 2014 advice. Due to the localised and patchy nature of examples of the feature within the site shown in the recent MB0120[32] survey data, and as there is only a modelled extent of the feature in the site, our confidence in the extent of the feature within the site remains **Low**. Section 5.1 provides more information on how rock features have been identified from image data.

We have **High** confidence in the presence and **High** confidence in the extent of **Subtidal coarse sediment** in the site due to the multiple sampling points and the mapped extent provided from the data from the 2012 MB0120[32] survey of the site.

Our confidence in the presence of the feature **Subtidal sand** is **Moderate** with **Moderate** confidence in the feature extent. This feature was not originally recommended by the regional MCZ project as it has since been recorded through a recent MB0120[32] survey. Expert judgement was used to assign a **Moderate** confidence score in the presence of this feature due to the nature of the evidence available. The presence of **Subtidal sand** is supported by only one ground-truthing sample point, multibeam data from the

[103] The Marine Habitat Classification for Britain and Ireland. Available at: http://jncc.defra.gov.uk/marinehabitatclassification

MB0120[32] survey and data from a Civil Hydrography Programme (**CHP**) survey in 2005. The acoustic signature in the backscatter data clearly differentiates small sand patches throughout the site, which have been identified as sand waves known as Barchan dunes. Barchan dune stability between the two surveys has been assessed by overlaying the transit multibeam lines collected on the MB0120[32] survey with the CHP data acquired in 2005. Significant movement of the dunes were not evident and therefore we have concluded they are a permanent feature of the site. Infill acoustic data for the north-east corner of the rMCZ was collected during the MB0120 survey to verify this conclusion. Following Technical Protocol E[40], the single sample point would suggest low confidence in feature presence. However, given the wealth of acoustic data available clearly showing the sand patches throughout the site, JNCC judged that a **Moderate** confidence score in feature presence should be assigned to **Subtidal sand**. A **Moderate** confidence score in feature extent has been assigned to **Subtidal sand** due to some ground-truthing sample data conflicting with the habitat map generated from information collected by the MB0120[32] survey. The sample data gathered in the 2012 MB0120[32] survey overlaps with the mapped extent of sand from the CHP survey in 2005. A large number [roughly 95%] of the 2012 samples show the presence of Subtidal coarse sediment in areas mapped as Subtidal sand and thus question the accuracy of the mapped extent of the sand feature provided through the MB0120[32] survey products. It is possible that the samples gathered in 2012 did not coincide with the mapped extent of Subtidal sand due to a spatial error between the recorded position of the vessel and the actual position of the sampling device on the seabed. However, it has not been possible to confirm why the ground-truthing data conflict with mapped extent of **Subtidal sand**, JNCC have used expert judgement to assign only **Moderate** confidence to feature extent, despite the availability of a recent habitat map from survey data.

The BGS data previously used in our 2012 assessment[24] of the site supports the presence of **Subtidal mixed sediments**. In 2012, both feature presence and feature extent were assigned **Low** confidence. While there are no new data to further support the presence or extent of this feature in the site (the 2012 MB0120[32] survey did record this feature), confidence scores for feature presence have been revised in line with Technical Protocol E supplementary guidance[41], which changed the number of sample points required for Moderate confidence. Using this revised guidance, the available data would suggest a High confidence score for **Subtidal mixed sediments**. However JNCC used expert judgement to assign only **Moderate** confidence in feature presence to take into account that the recent extensive sampling within the site did not find evidence of this feature. JNCC assigned **Low** confidence in feature extent since there is no mapped extent of the feature other than that based on modelled data, sparse distribution of ground-truthing data, and the feature was not found in the recent MB0120[32] survey.

The habitat FOCI feature **Subtidal sands and gravels** was identified but not proposed as a feature for designation within the rMCZ by the regional MCZ project. JNCC have not provided advice for this feature in 2014 (See Section 5.1)

### 6.19.2 Advice on the General Management Approach for rMCZ features

A summary of JNCC's assessments of our confidence in feature condition and the General Management Approach (**GMA**) proposed are presented below in Table 104 (see Section 5.2 and Section 5.3 for the approach). Further information on the vulnerability assessments is provided in Annex 7.

**Table 104: Summary of JNCC's conservation advice for features in the Western Channel rMCZ**

| **Site** (Code) | **Feature** (Code) | **Confidence in feature condition** (MCZ Technical Protocol F) (previous assessment scores) | **General Management Approach proposed** (MCZ Conservation Objective Guidance) (previous assessment scores) |
|---|---|---|---|
| **Western Channel rMCZ** (FS 12) | **Moderate energy circalittoral rock** (A4.2) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal coarse sediment** (A5.1) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal sand** (A5.2) | **Low** (Low) | **Recover** (Recover) |
| | **Subtidal mixed sediments** (A5.4) | **Low** (Low) | **Recover** (Recover) |

The regional MCZ project set a **Recover** GMA for the features **Moderate energy circalittoral rock**, **Subtidal coarse sediment** and **Subtidal mixed sediments**. JNCC agreed that these were appropriate in our 2012 advice[24]. After reviewing currently available data our view remains unchanged in 2014. A **Recover** GMA is also appropriate for the additional feature **Subtidal sand** for which we had not provided advice upon at this site previously; see Annex 7 Table 166 for more information.

### 6.19.3 Confidence in feature condition

Technical Protocol F[63], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. JNCC therefore advise **Low** confidence in feature condition for the broad-scale habitats **Moderate energy circalittoral rock**, **Subtidal coarse sediment**, **Subtidal sand** and **Subtidal mixed sediments**.

### 6.19.4 Feature risk

Section 5.4 provides information on the data used and methodology followed for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Annex 7. Those features that are considered to be at **High** future risk and the pressures to which these features are **Highly** sensitive (with moderate/high confidence) are also presented in Annex 7.

**Table 105: Western Channel rMCZ feature risk assessment**

| Site (Code) | Feature (Code) | Current risk | Future risk |
|---|---|---|---|
| Western Channel rMCZ (FS 12) | **Moderate energy circalittoral rock** (A4.2) | **High** Feature is **highly vulnerable** to one/more pressures. | **High** Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures. |
| | **Subtidal coarse sediment** (A5.1) | **High** Feature is **highly vulnerable** to one/more pressures. | **Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to one/more pressures. |
| | **Subtidal sand** (A5.2) | **High** Feature is **highly vulnerable** to one/more pressures. | High Feature is **highly sensitive (**with moderate/high confidence) to one/more pressures. |
| | **Subtidal mixed sediments** (A5.4) | **High** Feature is **highly vulnerable** to one/more pressures. | **Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to one/more pressures. |

### 6.19.5 Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site have enough data to support their designation. Through a series of questions, we addressed the adequacy of data for confidence in feature presence or extent, considered additional conservation/ecological matters that may support priority designation of the feature, whether a feature is at risk of damage or whether the feature could potentially fill a big gap in the network. The method is outlined in Section 5.5 of this 2014 advice and the assessment and results presented in Table 106, Table 107 and Table 108 below.

***Feature assessment***

**Table 106: Western Channel rMCZ feature data sufficiency assessment**

| Site (Code) | Feature (Code) | Q1a. Confidence score of at least moderate for feature presence? | Q1b. Is 1a based only on parent habitat being present? | Q1c. Confidence score of at least moderate for extent/ distribution? | Outcome from Question 1 assessment |
|---|---|---|---|---|---|
| Western Channel rMCZ (FS 12) | **Moderate energy circalittoral rock** (A4.2) | **No** (Low confidence) | **N/A** | **N/A** | Move to Question 2 of the feature assessment (see Table 107) |
| | **Subtidal coarse sediment** (A5.1) | **Yes** (High confidence) | **No** | **Yes** (High confidence) | **Data supports designation of feature** |
| | **Subtidal sand** (A5.2) | **Yes** (Moderate confidence) | **No** | **Yes** (Moderate confidence) | **Data supports designation of feature** |
| | **Subtidal mixed sediments** (A5.4) | **Yes** (Moderate confidence) | **No** | **No** (Low confidence) | Move to Question 2 of the feature assessment (see Table 107) |

## Table 107: Western Channel rMCZ assessment of additional conservation/ecological considerations

| Site (Code) | Feature (Code) | Q2a: Does the feature fill a 'big gap' in the network AND have confidence score of at least moderate for feature presence? | Q2b: Is the feature at high risk of damage? | Outcome from question 2 assessment |
|---|---|---|---|---|
| **Western Channel rMCZ** (FS 12) | **Moderate energy circalittoral rock** (A4.2) | **No** –There is a spatial gap in the region for Circalittoral rock and this feature within this site could help address this spatial gap. It could also help to increase the amount of Moderate energy circalittoral rock afforded protection within the region (currently 8.3% protected in the existing network), but there is only Low confidence in feature presence. | **Yes** - This feature is currently at High risk of damage from benthic trawling and there is High risk of damage in the future. | **Feature should be further considered** by Defra so that the designation decision is based on consideration of specific circumstances such as conservation benefits and where the precautionary principle is applied because although we only have Low confidence in feature presence, this site is the only option to fill a spatial gap in the network for Circalittoral rock and the feature is at high risk of damage. |
| | **Subtidal mixed sediments** (A5.4) | **No** – There are no 'big gaps' for this feature within the region. | **Yes** - This feature is currently at High risk of damage from Fishing - benthic trawling. | **Feature should be further considered** by Defra so that the designation decision is based on consideration of specific circumstances such as where the precautionary principle is applied. However JNCC note that there are only six sample points supporting the feature and confidence in feature extent is low and so there may be better options for representing this feature within the region. |

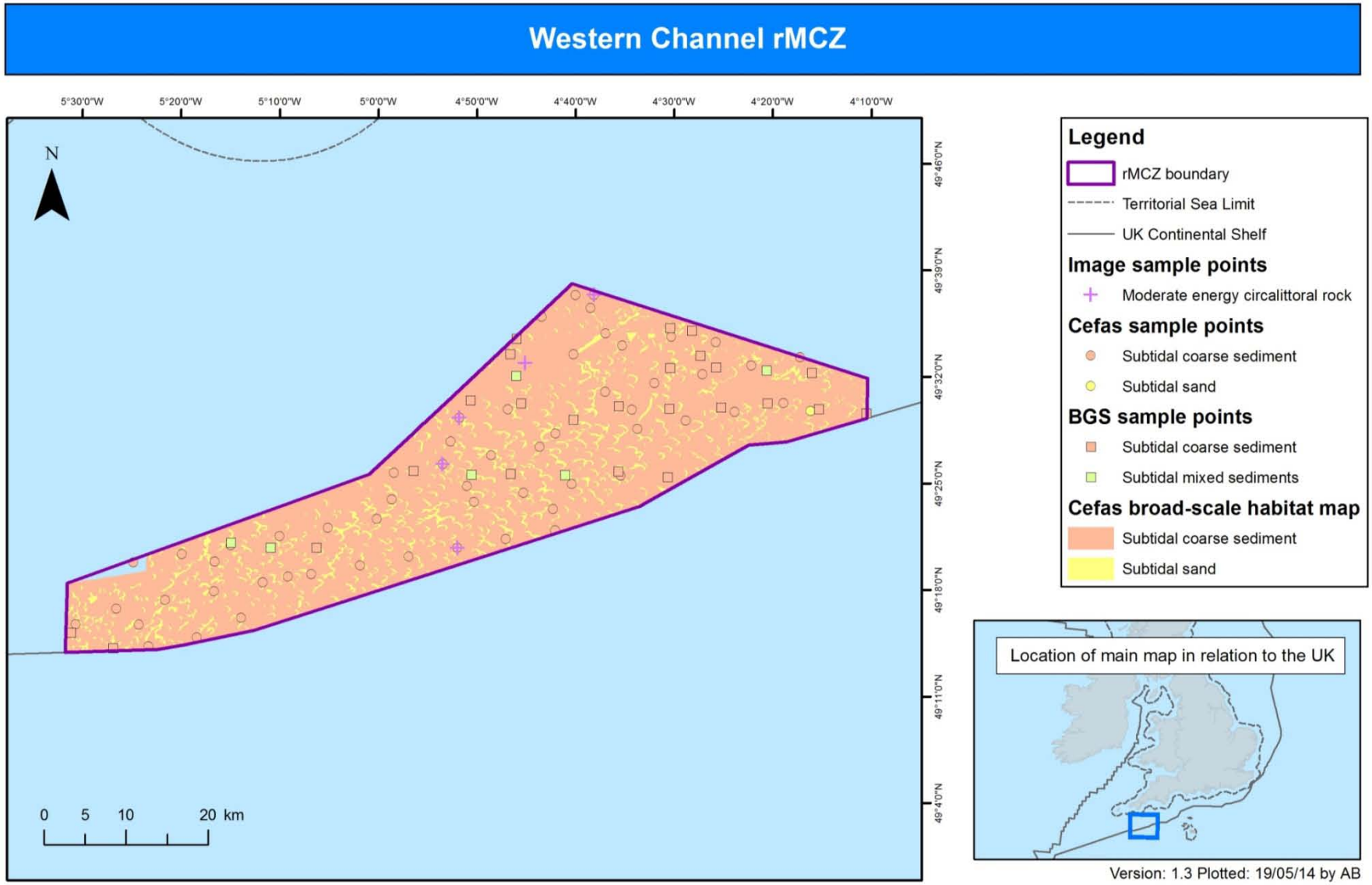
### *Site level assessment*

## Table 108: Western Channel rMCZ site level assessment

| Question | Response |
|---|---|
| **Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?** | **Not applicable** |
| **Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?** | **Greater than 75%** |
| **Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?** | **Does this site contribute to filling a big gap in the network?**<br>**Yes**.<br>This site would fill a spatial gap in the region for **Circalittoral rock** and **Subtidal sediment** and is needed to connect the offshore areas of the Western Channel and Celtic Seas region with the Eastern Channel region. It could also contribute to increasing the percentage of **Subtidal coarse sediment** and **Subtidal sand** afforded protection within the region. It could also contribute to increasing the percentage of **Moderate energy circalittoral rock** afforded protection within the region (currently 8.3% of the known area protected in the existing network), however we have low confidence in feature extent and so there may be better options for contributing to the proportion of this habitat afforded protection within the region.<br><br>**Adequacy** (seeking protection of at least 10% of the known area of each EUNIS Level 3 habitat within each CP2 region):<br>- This site could help to increase the amount of **Moderate energy** |

| | |
|---|---|
| | **circalittoral rock** afforded protection within the region (currently 8.3% of the known area protected in the existing network), however we have low confidence in feature extent and so there may be better options for contributing to the proportion of this habitat afforded protection within the region.<br>- This site could contribute to increasing the amount of **Subtidal coarse sediment** protected within the region (currently 3.2%of the known area protected in the existing network).<br>- This site will help to increase the amount of **Subtidal sand** protected within the region (currently 7.3% of the known area protected in the existing network).<br><br>**Connectivity** (ensuring that sites affording protection to the same habitat at EUNIS Level 2 are not further than 80km apart):<br>- This site would fill a spatial gap in the region for **Circalittoral rock** and **Subtidal sediment**. |

### 6.19.6 Feature maps




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**Figure 40: Map of broad-scale habitats in Western Channel rMCZ**

# 7 Acronyms

| Acronyms | Meaning |
|---|---|
| **ABPMer** | ABP Marine Environmental Research |
| **ASSI** | Area of Special Scientific Interest |
| **BGS** | British Geological Survey |
| **BSH** | Broad-scale habitat |
| **CCW** | Countryside Council for Wales (now Natural Resources Wales) |
| **Cefas** | Centre for Environment, Fisheries and Aquaculture Science |
| **CHP** | Civil Hydrography Programme |
| **COG** | Conservation Objective Guidance |
| **CP2** | Charting Progress 2 |
| **DEAL** | Digital Energy Atlas and Library |
| **Defra** | Department of Environment, Food & Rural Affairs |
| **ENG** | Ecological Network Guidance |
| **EUNIS** | European Nature Information System |
| **FOCI** | Feature of Conservation Importance |
| **GMA** | General Management Approach |
| **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 (rMCZ = recommended MCZ) |
| **MESH** | Mapping European Seabed Habitats |
| **MMO** | Marine Management Organisation |
| **MNCR** | Marine Nature Conservation Review |
| **MNR** | Marine Nature Reserve |
| **MPA** | Marine Protected Area |
| **MSFD** | Marine Strategy Framework Directive |
| **NE** | Natural England |
| **NERC** | Natural Environment Research Council |
| **PSA** | Particle Size Analysis |
| **QA** | Quality Assurance |
| **RP** | Regional Project |
| **SAC** | Special Area of Conservation (cSAC = candidate SAC) |
| **SAP** | Science Advisory Panel |

# 8 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]

**Barnard, S. & Boyes, S.J.** Review of Case Studies and Recommendations for the inclusion of Expert Judgement in Marine Biodiversity Status Assessments, 2013. JNCC Report No. 490. Available at: http://jncc.defra.gov.uk/pdf/490_web.pdf

**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.

**Campbell et al., 2009**. Campbell, N., Dobby, H. and Bailey, N. 2009 Investigating and mitigating uncertainties in the assessment of Scottish Nephrops norvegicus populations using simulated underwater television data. ICES Journal of Marine Science 66: 646-655

**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., Hermsen, 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.

**Connor et al., 2004**. Connor, D.W., Allen, J.H., Golding, N., Howell, K.L., Lieberkneckt, L.M, Northern, K.O. and Reker, J.B. The Marine Habitat Classification for Britain and Ireland Version 04.05 JNCC, Peterborough. ISBN 1 861 07561 8 (internet version) http://jncc.defra.gov.uk/marinehabitatclassification [Accessed May 2014]

**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-habitaty.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

**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 at: 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 at: 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 at: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18221&FromSearch=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 at: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18125

**Eggleton and Downie, 2013**. Eggleton, J. and Downie, A. 2013**.** East of Haig Fras rMCZ Post-survey Site Report 2013. Report Number 6. Version 8. Available at: 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. 2012. Descriptions of the ecosystem services provided by broad-scale 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, Natural England, Sheffield.

**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*, **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 at: 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 at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69445/pb13598-graham-bryce-independent-review-marine-sacs-110713.pdf

**Gupta, S., Collier, J.S., Palmer-Felgate, A., & Potter, G.** (2007), Catastrophic Flooding Origin of Shelf Valley Systems in the English Channel. *Nature* **448:** 342-345.

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

**JNCC, 2013**. Advice on offshore Marine Conservation Zones proposed for designation in 2013. Version 7.0, August 2013, JNCC, UK. Available at:

http://jncc.defra.gov.uk/pdf/JNCC's%20advice%20on%20offshore%20MCZs%20proposed%20for%20designation%20in%202013.pdf

**JNCC 2014**. Identifying the remaining MCZ site options that would fill big gaps in the existing MPA network around England and offshore waters of Wales & Northern Ireland. Available at: http://jncc.defra.gov.uk/pdf/140224_BigGapsMethod_v8.pdf

**JNCC and 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 at: http://jncc.defra.gov.uk/page-4884

**JNCC and Natural England 2011**. **Conservation Objective Guidance**. August, 2011. Available at: http://jncc.defra.gov.uk/pdf/MCZ%20Project%20Conservation%20Objective%20Guidance_v2.pdf

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

**JNCC and Natural England, 2012b**. JNCC and Natural England's advice on recommended Marine Conservation Zones - **Amendments Report**: December, 2012. Available at: http://jncc.defra.gov.uk/PDF/MCZAdvice_AmendmentsReport_v2FULL.pdf

**JNCC and 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 at: http://jncc.defra.gov.uk/pdf/120111_SNCB%20MCZ%20Advice_Protocol_Feature%20Evidence%20V5.0.pdf

**JNCC and Natural England, 2012d**. SNCBs' MCZ Advice Project **Technical Protocol F** – Assessing scientific confidence of Feature condition. Available at: 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 at: http://jncc.defra.gov.uk/pdf/protocol-G_tcm6-28393.pdf

**JNCC and Natural England, 2013a**. SNCBs' MCZ Advice Project **Technical Protocol I** – Assessing certainty in the appropriateness of conservation objectives. Available at: http://jncc.defra.gov.uk/pdf/080413_SNCBs%20MCZ%20Advice%20Protocol%20I_certainty%20in%20conservation%20objectives_v2.0.pdf

**JNCC and 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 at: http://jncc.defra.gov.uk/page-5999

**JNCC and 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 at: http://jncc.defra.gov.uk/page-6229

**JNCC and Natural England, 2014**. Advice on when data supports a feature/site for designation from a scientific, evidence-based perspective, July 2014. Available at: http://jncc.defra.gov.uk/page-5999

**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.

**Lark., R.M. 2014**. Mapping seabed sediments of the Swallow Sand and South-West Deeps (West) MCZs. *British Geological Survey Internal Report*, OR/14/015. 18pp.

**Løkkeborg., S. 2005**. Impacts of trawling and scallop dredging on benthic habitats and communities. FAO Fisheries Technical Paper. No. 472, FAO, Rome, 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 at: http://randd.defra.gov.uk/Document.aspx?Document=11019_RockUniquerMCZ_SummarySiteReport_V6.pdf

**Natural England and JNCC, 2010**. The Marine Conservation Zone Project: **Ecological Network Guidance**. Natural England and JNCC, Sheffield and Peterborough, UK, 2010. Available at: http://jncc.defra.gov.uk/pdf/100705_ENG_v10.pdf

**Roberts *et al.,* 2010**. Roberts, C., Smith, C., Tillin, H. and Tyler-Walters, H, 2010. Review of existing approaches to evaluate marine habitat vulnerability to commercial fishing activities. Environment Agency report No SC080016/R3 Available at: 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]. Marine Biological Association of the United Kingdom, Plymouth.

Available at: http://www.marlin.ac.uk/habitatsensitivity.php?habitatid=294&code=1997 [Accessed June 2013]

# Annex 1: An independent Quality Assurance of JNCC's evidence assessment for possible Tranche Two rMCZs - Contract Specification

**Background to the contract**

To support the UK Government's designation of MCZs, JNCC and Natural England are responsible for assessing the evidence underpinning the MCZ features of interest (i.e. species, habitats or geological/geomorphological features) in rMCZs[104]. At Defra's request, JNCC and Natural England produced Technical Protocol E (JNCC & Natural England 2012a) which sets out the broad principles and approach for assessing the evidence underpinning features within rMCZs. The assessment considers evidence from multiple sources (e.g. data held nationally or locally by conservation organisations, public authorities, marine industries, or individuals) and is used to undertake:

- An assessment of the biophysical evidence supporting the presence of features, in order to determine the scientific confidence in the feature(s) of interest being present within a given rMCZ.
- An assessment of the biophysical evidence supporting the extent of features, in order to determine the scientific confidence in the spatial distribution of the feature(s) of interest within a given rMCZ.

JNCC and Natural England applied Technical Protocol E to generate these 'evidence assessments' when developing their advice for Defra in 2012 (JNCC and Natural England, 2012b and a subsequent amendments report; JNCC and Natural England, 2012c). JNCC and Natural England also produced a guidance document on aspects of the practical application of Technical Protocol E (JNCC and Natural England, 2013a), in advance of updating the confidence assessments on the rMCZs proposed for consultation/designation in 2013 (JNCC, 2013b).

JNCC has policies on evidence Quality Assurance (QA) to comply with the Government's policy on the establishing the quality and use of evidence in its decision-making. JNCC undertakes an internal QA of its MCZ evidence assessments before presenting them to its independent non-Executive MPA sub-group[105] for final review and sign-off. JNCC's MCZ advice is only submitted to the Government after it has been formally signed-off.

Internal QA is completed by the JNCC MCZ Evidence (QA) Group (see Annex 5 for Terms of Reference) which reviews both the evidence base for sites and the assessment process, where the latter focuses on any evidence assessments where expert judgement applied. These QA processes are designed to ensure

[104] Or any other area for which an MCZ may be designated
[105] Information on the JNCC Joint Committee. Available at: http://jncc.defra.gov.uk/page-5349

that the confidence assessments are consistent and appropriate. In response to recent developments in JNCC's policy relating to the QA of evidence, JNCC will introduce a further QA step into its MCZ work by commissioning an independent scientist to QA the application of Technical Protocol E to JNCC's evidence assessments.

**Aim**

The aim of the contract is undertake an independent quality assurance check of the evidence assessment currently being generated by JNCC for the second tranche of MCZs designations[106] (herein described as 'Tranche Two rMCZs'). We require a specialist contractor to carry out an independent check on a random sample of rMCZs, covering all features (e.g. species, habitats and geological/geomorphological features) proposed for the chosen site. The QA review will evaluate how the biophysical evidence underpinning each site/feature gives rise to the JNCC's confidence assessments, based on the approaches outlined in Protocol E (JNCC & Natural England 2012a) and the associated guidance document (JNCC and Natural England, 2013a). The outcome of the review should be presented in a short report and should include any recommendations regarding how JNCC's outputs could be improved. The findings will be taken into account by JNCC before it finalises the evidence assessments and during the JNCC QA process (as outlined in 'Background to the contract' above).

**Note:** Technical Protocol E and the associated guidance have been subject to external review and QA procedures. The purpose of this contract is therefore not to QA the content of these documents, but rather to assess how they have been *applied* by JNCC.

**Requirements**

JNCC require a basic 'process review' and QA check against Technical Protocol E and associated guidance. The outcome of the review should be presented in a short report and should include any recommendations regarding how the outputs could be improved.

The successful contractor is being engaged to provide independent scientific advice. The contractor will be asked to confirm that he/she has no vested interest in the rMCZs, Defra or JNCC, and identify if they have had any previous involvement in the MCZ identification and designation process. JNCC would be happy to correspond further regarding eligibility of individuals to be part of a tender, prior to the tender submission deadline.

The successful contractor will be asked specifically to consider the following questions at a feature/site level for each rMCZ:

[106] Information on Marine Protected Areas. Available at: https://www.gov.uk/government/policies/protecting-and-sustainably-using-the-marine-environment/supporting-pages/marine-protected-areas

1. Based on the biophysical evidence, are the evidence assessments for the presence and extent of rMCZ features robust and in accordance with the intent and methods outlined in Technical Protocol E and the associated guidance document?
2. Does the approach for capturing/recording the confidence assessment results, and reasoning behind them, provide a clear audit of how the Technical Protocol E and Guidance have been applied?

The contractor will provide their judgement against these questions, and any recommendations for improving/resolving any issues identified, as part of a short report.

JNCC expects the contractor to conduct the review on ~2-3 of the rMCZs being considered in the current advice package on rMCZs for Tranche Two. These must be chosen at random by the contractor. All features covered in the JNCC evidence assessments for those sites will need to be reviewed. If any issues arise, the contractor could extend the review to some additional sites subject to discussion with the Project Officer.

**Reference list**

JNCC and Natural England (2012a) SNCB MCZ Advice Project – Assessing the scientific confidence in the presence and extent of features in recommended Marine Conservation Zones (Technical Protocol E). Web address: http://jncc.defra.gov.uk/pdf/120111_SNCB%20MCZ%20Advice_Protocol_Feature%20Evidence%20V5.0.pdf

JNCC and Natural England (2012b). Marine Conservation Zone Project: JNCC and Natural England's advice to Defra on recommended Marine Conservation Zones. Peterborough and Sheffield. Web address: http://jncc.defra.gov.uk/PDF/MCZProjectSNCBAdviceBookmarked.pdf

JNCC and Natural England (2012c) Marine Conservation Zone Project: JNCC and Natural England's advice to Defra on recommended Marine Conservation Zones; Amendments Report. . Peterborough and Sheffield. Web address: http://jncc.defra.gov.uk/PDF/MCZAdvice_AmendmentsReport_v2FULL.pdf

JNCC and Natural England (2013a) Assessing the scientific confidence in the presence and extent of features in proposed and recommended Marine Conservation Zones (Technical Protocol E); Guidance on aspects of the practical application of the Protocol E for MPA work. Web address: http://jncc.defra.gov.uk/pdf/181113%20Protocol%20E%20supplementary%20guidance.pdf

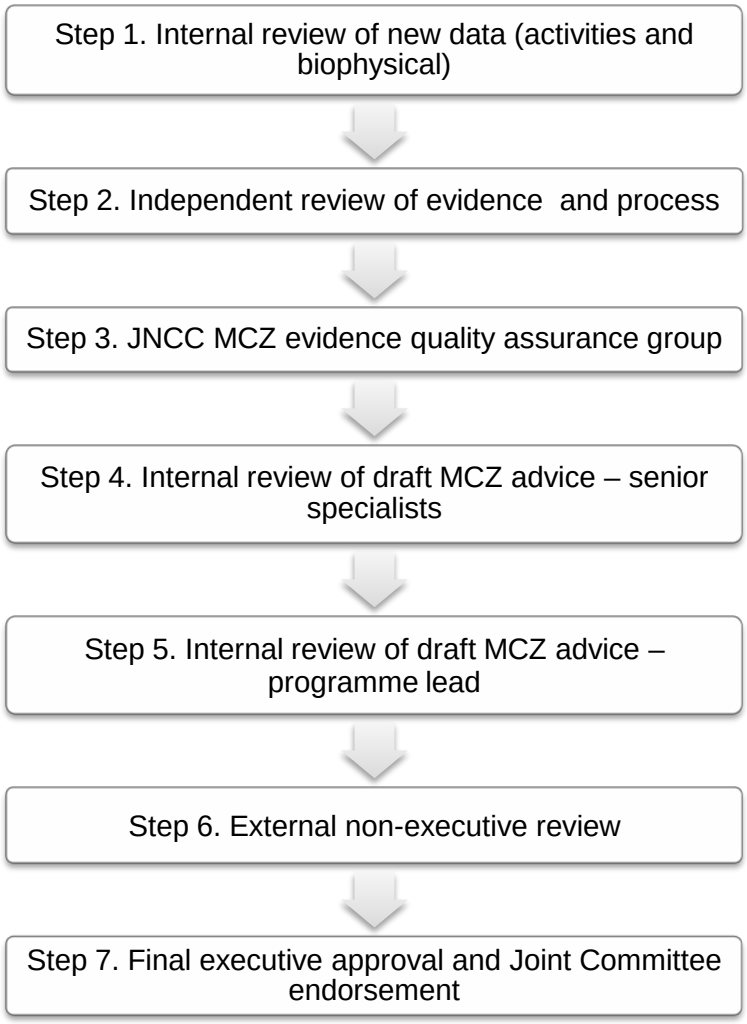
JNCC (2013b). JNCC's advice on offshore Marine Conservation Zones proposed for designation in 2013. Peterborough. Web address: http://jncc.defra.gov.uk/pdf/JNCC's%20advice%20on%20offshore%20MCZs%20proposed%20for%20designation%20in%202013.pdf

# Annex 2: Statement on JNCC's Quality Assurance procedures undertaken for the 2014 pre-consultation MCZ advice

This Annex provides a summary of the quality assurance (QA) processes on JNCC's 2014 pre-consultation advice to ensure its scientific advice is robust and in accordance with both JNCC's internal Evidence QA policy and the Government Chief Scientific Adviser's guidelines for preparing scientific advice[107].

Figure 41 outlines the steps in the process adopted by JNCC and the subsequent text provide details regarding each step. It should be noted that each step in the QA process relies on the previous step having been undertaken in a robust manner in order to ensure that no systematic issues are replicated through the advice.

**Figure 41: The QA process for JNCC's 2014 pre-consultation MCZ advice**




[107] Guidelines for preparing scientific advice. Available at: http://www.bis.gov.uk/go-science/science-in-government/strategy-and-guidance

**Step 1. Internal review of new data (activities and biophysical)**

Any recently acquired data were reviewed by the Marine Evidence team in JNCC who undertake quality assurance of the data, paying particular attention to the associated metadata and its geospatial coordinates to check they provide sufficient information and are accurate. Certain standards, such as being INSPIRE[108] compliant, are required of all such data, even where it has been subject to a separate QA process by the data provider prior to delivery to JNCC.

These data were also considered by the MCZ team who conducted an in depth review of the data whilst undertaking the MCZ assessments contained within this advice. Any issues with the data were flagged with the Marine Evidence team and resolved with the data providers where possible. Where issues were not resolved, these limitations to the data were logged and incorporated into our advice, and further considered at subsequent steps in the QA process.

**Step 2. Independent review of evidence and process**

JNCC commissioned an independent external specialist to undertake a quality control check of its site assessments (approximately 20% of sites), which included an examination of the evidence base underpinning a selection of sites and a review of the draft conclusions for feature presence and feature extent assessments. The review determined whether due process was followed (in terms of protocols and guidance and recording of decisions) and whether the evidence used was appropriate for the conclusions presented. JNCC Report 519[109] provides more information on this step.

**Step 3. JNCC MCZ Evidence Quality Assurance Group**

This formal JNCC group (see Terms of Reference in Annex 5) reviewed the biophysical data available for each feature and made concluded on the appropriateness of the use of those data. Key decisions and conclusions are recorded within the minutes of the Group meetings. Where issues with data were identified, they were logged with the Marine Evidence team and resolved with the data providers where it was possible to do so. Where issues were not resolved, any limitations to the data that impacted JNCC's assessments were logged and incorporated into our advice, and further considered at subsequent steps in the QA process.

The Group also reviewed the confidence scores assigned in draft by the MCZ team for the feature presence and feature extent assessments. This review considered the evidence available to support the score for that feature. Where necessary, expert judgement[55] is applied and agreed through the members of the Group.

[108] Information on INSPIRE. Available at: http://data.gov.uk/location/inspire
[109] JNCC Report No.519. Available at: http://jncc.defra.gov.uk/page-6658

**Step 4. Internal review of draft MCZ advice – senior specialists**

The draft advice was prepared by the MCZ team at a series of internal workshops which provided senior specialists with the opportunity to examine both the activities and biophysical data being used for the assessments, as well as to ensure consistency in the approaches undertaken within the MCZ team. Once all the assessments were drafted, they were reviewed by senior specialists with expertise in the relevant topics (evidence, fisheries pressures, conservation advice). The specialists review focused predominantly on the site narratives, although some activities data were reviewed to check the vulnerability assessments.

**Step 5. Internal review of draft MCZ advice – programme lead**

The full draft advice package, incorporating comments and changes made by senior staff, was reviewed by the MPA Programme Leader. This review did not consider the underlying data used to form this advice, instead it focussed on the results and explanations together with checking the application of protocols and guidance and earlier QA steps.

**Step 6: External non-executive review**

The advice was then shared with the non-executive, independent Joint Committee MPA Sub Group for their QA of the assessments and conclusions, together with a review of whether the work has followed due process. The group provides independent scientific advice and scrutiny to JNCC, and comprises independent specialists drawn from wider academic, NGO, public and private sector communities. Their review did not incorporate a review of the data underlying the advice.

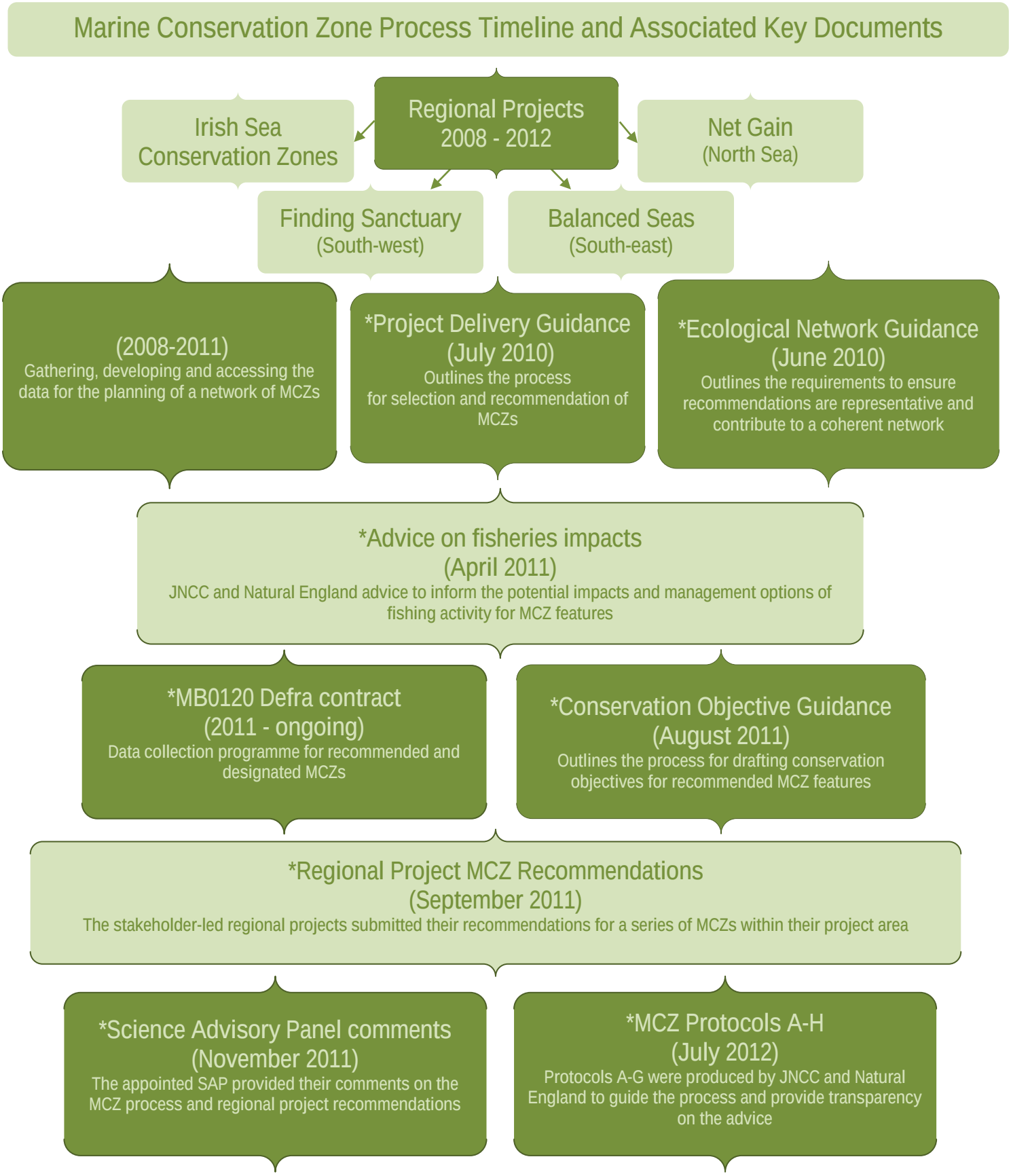
The draft advice was also shared with the Statutory Nature Conservation Bodies MPA Technical Group for comment where applicable. The JNCC MCZ Evidence Quality Assurance Group were also given a final opportunity to comment on the draft advice.

**Step 7: Executive approval and Joint Committee endorsement**

All comments received from Step 6 were logged and actioned to ensure a full audit of changes was available. The final advice was reviewed by the MPA Programme Leader and signed off by the Marine Director on behalf of JNCC's Executive Management Board. Any changes that were made during this sign off process were recorded in the comments log.

The final text and comments log were checked and signed off by the MPA Sub Group Chair, who then recommended the final advice to the JNCC Joint Committee. The Chair of the Joint Committee reviewed the recommendation and endorsed the advice as of sufficient quality to be sent to Defra.

# Annex 3: MCZ process timeline and summary of key documents contributing to the MCZ process




*all report links are located below

### *SNCB Advice on Regional Project Recommendations (July 2012)

JNCC and Natural England provided advice on the regional project recommendations to Defra

The SNCBs advised on:

- An overview of the regional MCZ project process;
- An assessment of the available scientific evidence supporting the recommendations;
- An assessment of the recommended MCZs most at risk of damage;
- Advice on the contribution of MCZs towards meeting the Government's aim of creating an ecologically coherent network of MPAs;
- JNCC and Natural England's overall view of the recommendations
- JNCC and Natural England's response to comments from the SAP

### *SNCB Advice on Regional Project Recommendations Amendments Report (December 2012)

JNCC and Natural England provided amendments to the advice on regional project recommendations

### *MB0116 Defra contract (2012 - 2013)

Defra commissioned an in-depth review of the Marine Conservation Zone (MCZ) evidence

### Tranche One MCZ Consultation (December 2012 – March 2013)

Defra consulted on 31 rMCZs that they were minded to designate in 2013

### *Subtidal sands and gravels Supplementary Advice (March 2013)

Supplementary advice on the MCZ Feature of Conservation Importance Subtidal sands and gravels was provided to inform a decision to remove the feature from the designations as it was deemed to be already covered through other Broad scale habitat features

### *MCZ Protocol I (April 2013)

Protocol I was produced by JNCC and Natural England to guide the process of assessing certainty in conservation objectives and provide transparency on the advice

### *SNCB Post Consultation Advice on Tranche One proposed MCZs (pMCZ) (August 2013)

JNCC and Natural England provided advice on the Tranche One pMCZs to Defra, incorporating all available data, in order to support the decision making process for Tranche One designations

The SNCBs advised on:

- Presence and extent of features;
- Feature condition;
- Conservation objectives for each feature;
- Certainty in conservation objective;
- Site risk

### Changes to Advice

JNCC and Natural England did not provide advice on the regional project recommendation process in the post consultation advice, or how the sites met the ENG. A revision of the scientific assessments incorporating any further data was completed. All features were assessed regardless of whether they were recommended by the regional project

## Tranche One MCZ Designations (November 2013)

The first 27 sites were designated

5 offshore sites
22 inshore sites

## Defra public announcement (February 2014)

Defra announcement of two further tranches of MCZs to follow the Tranche One designations, with the identification of 37 possible Tranche Two sites

## *Identifying 'Big Gaps' in the UK MPA Network (February 2014)

A review was undertaken to identify the remaining MCZ site options that would fill big gaps in the existing MPA network around England and offshore waters of Wales & Northern Ireland

## *Clarification of Subtidal mud habitats (August 2014)

JNCC produced a report to clarify the classification of Subtidal mud and associated habitats

## *Sufficiency of data for decision making (August 2014)

JNCC and Natural England paper on an approach to assess data supporting a feature/site for designation from a scientific, evidence-based perspective, to ensure it was sufficient for decision-making

## *SNCB Pre Consultation Advice on possible Tranche Two rMCZs (August 2014)

JNCC and Natural England provided advice on the possible Tranche Two MCZs to Defra, incorporating all available data, in order to support the decision making process regarding which sites to take through to consultation

The SNCBs advised on:

- Presence and extent of features;
- Feature condition;
- General Management Approach for each feature;
- *Feature risk;
- *Sufficiency of evidence for decision making

## Changes to Advice

JNCC and Natural England did not provide advice on certainty of General Management Approach (GMA, formerly 'Conservation Objective') for Tranche Two sites, and Site risk has been adapted to become Feature risk. Furthermore, assessment on the sufficiency of the evidence for decision making has been included, which includes an ecologically gap consideration

| Date | Report | Link |
|---|---|---|
| **2008** | MB0102 contract – gathering/developing and accessing the data for the planning of a network of MCZs | http://randd.defra.gov.uk/ [MB0102 Report] |
| **2010** | Ecological Network Guidance (ENG) | http://jncc.defra.gov.uk/page-4881 [Ecological Network Guidance] |
| **2011** | Conservation Objective Guidance (COG) | http://jncc.defra.gov.uk/page-4881 [Conservation Objective Guidance] |
| **2011** | Regional MCZ Project MCZ Recommendations | http://jncc.defra.gov.uk/page-6230 |
| **2012** | JNCC and Natural England Advice on Regional MCZ Project Recommendations | http://jncc.defra.gov.uk/page-6229 [JNCC and Natural England's Advice on recommended Marine Conservation Zones pdf] |
| **2012** | JNCC and Natural England Amendments Report | http://jncc.defra.gov.uk/page-6229 [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 | http://randd.defra.gov.uk [MB0116 Report] |
| **2013** | MB0120 contract– R&D data collection programme for proposed MCZs | http://randd.defra.gov.uk [MB0120 Report] |
| **2011 to 2013** | Technical MCZ Protocols<br>A. Strategic protocol – the principles by which advice will be formulated<br>B. Quality control, assurance and peer review<br>C. Document style and format<br>D. Audit trail – version control and record keeping<br>E. Assessing the scientific certainty of sites and features<br>F. Assessment of the scientific certainty of conservation objectives<br>G. Assessment of the risk to features (not published at present)<br>H. Assessing the contribution of existing sites to the network<br>I. Assessing certainty in the appropriate of conservation objectives | http://jncc.defra.gov.uk/page-5999 [Technical Protocols] |
| **2012** | JNCC and Natural England Approach for the assessment of the regional MCZ project recommendations. | http://jncc.defra.gov.uk/page-6229 [Approach for the assessment of the regional Marine Conservation Zone project recommendations against the Ecological Network Guidance] |
| **2012** | JNCC and Natural England Advice on the certainty in conservation objectives for features in rMCZs. | http://jncc.defra.gov.uk/page-6229 [Advice on the certainty in conservation objectives for features in recommended Marine Conservation Zones] |
| **2013** | JNCC and Natural England Supplementary advice on the feature subtidal sands and gravels | http://jncc.defra.gov.uk/page-6460 [Supplementary advice on the Marine Conservation Zones feature of conservation importance subtidal sands and gravels] |

| | | |
|---|---|---|
| **2013** | JNCC and Natural England post consultation advice on pMCZs | http://jncc.defra.gov.uk/page-6460 [Advice on offshore Marine Conservation Zones proposed for designation in 2013] |
| **2014** | JNCC Advice on Identifying the remaining MCZ site options that would fill 'big gaps' in the existing MPA network around England and offshore waters of Wales & Northern Ireland. | http://jncc.defra.gov.uk/page-6658 [Identifying the remaining MCZ site options that would fill big gaps in the existing MPA network around England and offshore waters of Wales & Northern Ireland] |
| **2014** | JNCC and NE, Advice on when data support a feature/site for designation from a scientific, evidence-based perspective | http://jncc.defra.gov.uk/page-5999 |

# 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 the individual site sections of this report. The data tables critique the data sources used in the assessments, and the confidence assessment tables detail the new assessments completed in this 2014 Advice, incorporating any new evidence available.

**Table 109: Celtic Deep rMCZ data table**

| Celtic Deep rMCZ – Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A5.1 Subtidal coarse sediment | FS 10_A5.1 | BSH | N/A | Celtic Sea Marine Institute *PSA* data points | PSA data points | Yes | Ground- | **1** | 18 | 2006/07 | PSA data collected as part of the Celtic Sea Nephrops Grounds UWTV annual surveys. All sediment samples were taken using the MI Shipex Grab. Sediment was taken from the surface to around 10 cm depth. | Yes | Yes | Yes | http://data.marine.ie/ |
| A5.2 Subtidal sand | FS 10_A5.2 | BSH | N/A | BGS seabed sediments data points | PSA data points | No | Grab Samples | **1** | **19** | 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | No | No | enquiries@bgs.ac.uk |

## Celtic Deep rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | FS 10_A5.3 | BSH | N/A | BGS seabed sediments data points | PSA data points | No | Grab Samples | **19** | **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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| A5.3 Subtidal mud | FS 10_A5.3 | BSH | N/A | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |
| A5.3 Subtidal mud | FS 10_A5.3 | BSH | N/A | UKSeaMap 2010 | Habitat map | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |
| A5.3 Subtidal mud | FS 10_A5.3 | BSH | N/A | Marine Recorder | Biotope points | No | underwater video | **13** | 0 | N/A | Two Surveys: 1989-91 Biomor southern Irish Sea sublittoral survey (survey identification key JNCCMNCR10000634 ) & 2005 CCW HABMAP sublittoral survey (survey identification key MRCCW16900000002). | Yes | Yes | Yes | The Marine Recorder snapshot will be available at http://jncc.defra.gov.uk/download/marinerecorderdata |

## Celtic Deep rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | FS 10_A5.3 | BSH | N/A | Marine Recorder | Habitat points | No | Ground-truthing | 1 | 0 | N/A | Two Surveys: 1989-91 Biomor southern Irish Sea sublittoral survey (survey identification key JNCCMNCR10000634 ) & 2005 CCW HABMAP sublittoral survey (survey identification key MRCCW16900000002).<br><br>There are two out of 15 points within this data which are not duplicates of data in the Marine Recorder biotope points. 1 data point (sample reference: MRMIT18000000032.01) records the presence of 'mud'. This record was used in the evidence assessment (it was absent from the MB0102 task 2C dataset). A further data point (sample reference: MRMIT18000000072.01) also absent from the MB0102 task 2C dataset also records the presence of three genus (Brissopsis, Nucula and Turitella) and has no specific habitat information associated with it. Given that species from these genus can occupy a range of habitats (including but not restricted to A5.3 Subtidal mud), the record cannot be used to support or discount the presence of A5.3 Subtidal mud and has therefore not contributed to the evidence assessment for A5.3 Subtidal mud for this site. | No | Yes (see exception in 'Comment on data source') | Yes (see exception in 'Comment on data source') | The Marine Recorder snapshot will be available at http://jncc.defra.gov.uk/download/marinerecorderdata |
| A5.3 Subtidal mud | FS 10_A5.3 | BSH | N/A | Cefas data mining points | Ground-truthing | No | Ground-truthing | 1 | 0 | N/A | N/A | No | Yes | Yes | Data acquired through the Cefas partnership. Contact JNCC or Cefas direct to learn how to access this information. |

## Celtic Deep rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | FS 10_A5.3 | BSH | N/A | Celtic Sea Marine Institute *PSA* data points | PSA data points | Yes | Ground- | **18** | 1 | 2006/07 | PSA data collected as part of the Celtic Sea Nephrops Grounds UWTV annual surveys. All sediment samples were taken using the MI Shipex Grab. Sediment was taken from the surface to around 10 cm depth. | Yes | Yes | Yes | http://data.marine.ie/ |
| A5.3 Subtidal mud | FS 10_A5.3 | BSH | N/A | Irish Marine Institute Nephrops Stock Assessment burrow counts data points | Nephrops Stock Assessment burrow counts data points | No | Video and camera stills analysis | 64 | 0 | N/A | 64 *Nephrops* burrow density records overlap the Regional MCZ Project's recommended extent of A5.3 Subtidal mud. All records have a measure of borrow density above zero. The occurrence of *Nephrops* burrows on soft substrata can be used to validate the ENG feature as characterising component of the Marine habitats classification scheme biotope , "Burrowing megafauna and [Maxmuelleria lankesteri] in circalittoral mud" (SS.SMu.CFiMu.MegMax) (http://jncc.defra.gov.uk/marine/biotopes/biotope.aspx?biotope=JNCCMNCR00001994) which is a sub habitat of A5.3. See the Ecological Network Guidance for more information. | No | Yes | Yes | Irish Marine Institute FU19 Nephrops Grounds 2011 UWTV Survey Report available at http://oar.marine.ie/bitstream/10793/791/1/FU19%20UWTV%202011%20Survey%20Report.pdf |
| Mud habitats in deep water | 10_HOCI_13 | FOCI habitat | N/A | MB0102 Task 2C | Mud habitats in deep water habitat map (modelled) | No | N/A | N/A | N/A | N/A | The northern portion of this map is superseded by the habitat map from MB0102 which was not modelled. This portion of the map has therefore not been included in the assessment for this dataset as covered by the Mb0102 Task 2C "Mud habitats in deep water habitat map". | No | No | No | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |
| Mud habitats in deep water | FS 10_HOCI_13 | FOCI habitat | N/A | MB0102 Task 2C | Mud habitats in deep water habitat map | No | N/A | N/A | N/A | N/A | GB000039 - Benthic Biodiversity in the Southern Irish Sea 2: South-West Irish Sea Survey (SWISS). MESH Confidence Assessment 28%. The area of the habitat map presented by the Regional MCZ Project as part of the recommended extent of the feature, describes the habitat as Mud. The other part is mapped as Sandy mud and Muddy sand. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |

## Celtic Deep rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | 10_HOCI_13 | FOCI habitat | N/A | Marine Recorder | Biotope points | No | video | 8 | N/A | N/A | Two Surveys: 1989-91 Biomor southern Irish Sea sublittoral survey (survey identification key JNCCMNCR10000634) & 2005 CCW HABMAP sublittoral survey (survey identification key MRCCW16900000002) recorded Offshore circalittoral mud within the Regional MCZ Project's recommended extent of the feature. | Yes | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |
| Mud habitats in deep water | FS 10_HOCI_13 | FOCI habitat | N/A | Marine Recorder. | Habitat points | No | Ground-truthing | **0** | N/A | N/A | There are two out of 11 points within this dataset which are not duplicates of data in the Marine Recorder biotope points. 1 record (sample reference: MRMIT18000000032.01) records the presence of 'mud'. This record was used in the evidence assessment (it was absent from the MB0102 task 2C dataset) A further data point (sample reference: MRMIT18000000072.01) also absent from the MB0102 task 2C dataset also records the presence of three genus (*Brissopsis, Nucula* and *Turitella*) and has no specific habitat information associated with it. Given that species from these geneses can occupy a range of habitats (including but not restricted to A5.3 Subtidal mud), the record cannot be used to support or discount the presence of A5.3. This data point has therefore not contributed to the evidence assessment for this feature for this site. | No | source) | source) | The Marine Recorder snapshot will be available at http://jncc.defra.gov.uk/download/marinerecorderdata |
| Mud habitats in deep water | FS 10_HOCI_13 | FOCI habitat | N/A | MB0102 Task 2C | Mud habitats in deep water (points) | No | towed underwater video | **13** | N/A | N/A | Nine points verify the presence of the FOCI mud habitats in deep water inside the regional MCZ projects recommended extent for this feature. Four additional points verifying the FOCI mud habitats in deep water are present in the outside of the extent polygon for this FOCI (N.B. These four data points are displayed in the map of the site assessment document of the regional MCZ project report and so we are assuming that they were included by the regional MCZ project as part of the recommendations on feature extent). | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |

## Celtic Deep rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | FS 10_HOCI_13 | FOCI habitat | N/A | BGS seabed sediments data points | PSA data points | No | Grab Samples | **7** | 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| Mud habitats in deep water | FS 10_HOCI_13 | BSH | N/A | Celtic Sea Marine Institute *PSA* data points | PSA data points | Yes | Ground-truthing | **18** | N/A | 2006/07 | PSA data collected as part of the Celtic Sea Nephrops Grounds UWTV annual surveys. All sediment samples were taken using the MI Shipex Grab. Sediment was taken from the surface to around 10 cm depth. | Yes | Yes | Yes | http://data.marine.ie/ |
| Mud habitats in deep water | FS 10_HOCI_13 | FOCI habitat | N/A | Irish Marine Institute Nephrops Stock Assessment burrow counts data points | *Nephrops* Stock Assessment burrow counts data points | No | Video and camera stills analysis | 64 | N/A | 2006-2011 | 64 *Nephrops* burrow density records are present within the site extent. All records have a measure of burrow density above zero. The occurrence of *Nephrops* burrows on soft substrata can be used to validate the ENG feature as characterising component of the Marine habitats classification scheme biotope , "Burrowing megafauna and [*Maxmuelleria lankesteri*] in circalittoral mud" (SS.SMu.CFiMu.MegMax) (http://jncc.defra.gov.uk/marine/biotopes/biotope.aspx?biotope=JNCCMNCR00001994) which is a component habitat of Mud habitats in deep water. See the Ecological Network Guidance for more information. | No | Yes | Yes | Irish Marine Institute FU19 Nephrops Grounds 2011 UWTV Survey Report available at http://oar.marine.ie/bitstream/10793/791/1/FU19%20UWTV%202011%20Survey%20Report.pdf |

## Celtic Deep rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sea-pen and burrowing megafauna | FS 10_HOCI_18 | FOCI habitat | New Feature | Irish Marine Institute Nephrops Stock Assessment burrow counts data points | *Nephrops* Stock Assessment burrow counts data points | No | Video and camera stills analysis | 64 | N/A | 2006-2011 | 64 *Nephrops* burrow density records are present within the site extent. All records have a measure of burrow density above zero. The occurrence of *Nephrops* burrows on soft substrata can be used to validate the ENG feature as characterising component of the Marine habitats classification scheme biotope , "Burrowing megafauna and [*Maxmuelleria lankesteri*] in circalittoral mud" (SS.SMu.CFiMu.MegMax) (http://jncc.defra.gov.uk/marine/biotopes/biotope.aspx?biotope=JNCCMNCR00001994) which is a component habitat of Mud habitats in deep water. See the Ecological Network Guidance for more information. | No | Yes | Yes | Irish Marine Institute FU19 Nephrops Grounds 2011 UWTV Survey Report available at http://oar.marine.ie/bitstream/10793/791/1/FU19%20UWTV%202011%20Survey%20Report.pdf |

## Table 110: Celtic Deep rMCZ confidence assessment

| Celtic Deep rMCZ – confidence assessment | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A5.3 Subtidal mud | FS 10_A5.3 | 98 | N/A | N/A | N/A | No | N/A | **High** | Interpreted image and sample data clearly demonstrate the presence of a Subtidal mud feature in the site. There are 32 sediment points demonstrating the presence of the feature. | **High** | Available sample data cover the entirety of the site providing high confidence in the extent of Subtidal mud across the site. | N/A |
| Mud habitats in deep water | FS 10_HOCI_13 | 92 | N/A | N/A | N/A | No | N/A | **High** | Interpreted image and sample data clearly demonstrate the presence of a Mud habitats in deep water feature in the site. There are 32 sediment points which support the presence of the feature. | **High** | Available sample data covering the entirety of the site providing high confidence in the extent of Mud habitats in deep water across the site. | There are additional data points for the habitat FOCI Mud habitats in deep water (MB0102 task 2c) which fall within the site boundary but outside the extent recommended by the regional MCZ project (and outside any mapped extent of this feature). |
| Sea-pen and burrowing megafauna | FS 10_HOCI_18 | 64 | N/A | N/A | N/A | No | N/A | **High** | Interpreted image and sample data clearly demonstrate the presence of Sea-pen and burrowing megafauna communities in the site. There are 64 points which support the presence of the feature. | High | Available sample data covering the entirety of the site providing high confidence in the extent of Sea-pen and burrowing megafauna communities across the site. | N/A |

## Table 111: Compass Rose rMCZ data table

| Compass Rose rMCZ - Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A4.2 Moderate energy circalittoral rock | NG 12_A4.2 | BSH | No | EUSeaMap 2012 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/euseamap |
| A4.2 Moderate energy circalittoral rock | NG 12_A4.2 | BSH | No | MB0102 Task 2E | Combined Kinetic Energy map | No | N/A | N/A | N/A | N/A | Moderate energy was identified across the site. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |
| A4.2 Moderate energy circalittoral rock | NG 12_A4.2 | BSH | No | BGS hard substrate layer | Hard substrate map | No | 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 (BGS) and externally. The data source for the polygon within site was identified as "DataSource: BGS, Admiralty Charts, Multibeam, Seismic," The Polygons BGS ID are: BGS_1701. | No | Yes | Yes | enquiries@bgs.ac.uk |
| A5.1 Subtidal coarse sediment | NG 12_A5.1 | BSH | Yes | BGS sediment layer (DigSBS250 v3) | Habitat map (modelled) | Yes | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | enquiries@bgs.ac.uk |

| Compass Rose rMCZ - Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A5.1 Subtidal coarse sediment | NG 12_A5.1 | BSH | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND_04_12) | Acoustic, grabs, video and still data. | Yes | Grabs, video and still data. | 5 Grabs, 6 stills, 2 video tows | N/A | N/A | N/A | Yes | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.1 Subtidal coarse sediment | NG 12_A5.1 | BSH | Yes | BGS seabed sediments data points | PSA points | No | Grabs | 1 | 24 | 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |

## Compass Rose rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | NG 12_A5.2 | BSH | Yes | BGS sediment layer (DigSBS250 v3) | Habitat map (modelled) | Yes | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | enquiries@bgs.ac.uk |
| A5.2 Subtidal sand | NG 12_A5.2 | BSH | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND_04_12) | Acoustic, grabs, video and still data. | Yes | Grabs, video and still data. | 46 Grabs, 50 stills, 16 video tows | N/A | N/A | N/A | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Compass Rose rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | NG 12_A5.2 | BSH | Yes | BGS seabed sediments data points | PSA points | No | Grabs | 22 | 24 | 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | No | No | enquiries@bgs.ac.uk |
| A5.4 Subtidal mixed sediments | NG 12_A5.4 | BSH | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND_04_12) | Acoustic, grabs, video and still data. | Yes | Grabs, video and still data. | 3 Grabs, 0 stills, 0 video tows | N/A | N/A | N/A | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Compass Rose rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | NG 12_A5.4 | BSH | Yes | BGS seabed sediments data points | PSA points | No | Grabs | 1 | 24 | 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | No | No | enquiries@bgs.ac.uk |
| Smelt (*Osmerus eperlanus*) | NG 12_SOCI_32 | SOCI | Yes | ICES International Bottom Trawl Surveys (IBTS) | Trawl survey | Yes | Trawl | 10 | N/A | Smelt species presence supported by multiple records (10 surveys | From MB0116: International Bottom Trawl Survey | N/A | Yes | Yes | http://ices.dk/marine-data/dataset-collections/pages/default.aspx<br><br>http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18125 |

## Compass Rose rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ocean quahog (*Arctica islandica*) | NG 12_SOCI_3 | SOCI | Yes | ICES International Bottom Trawl Surveys (IBTS) | Trawl survey | Yes | Trawl | 1 | N/A | 2009 | From MB0116: International Bottom Trawl Survey<br>Original source ICES NS-IBTS (Boat THA2, Region 4, 2009)<br>N.B. Data on number / weight within trawl not provided. Search of all tows by all boats in all years within the ICES region sees many points to the North and to the East of the site, however only this one point lies within the site boundary. | N/A | Yes | Yes | http://ices.dk/marine-data/dataset-collections/pages/default.aspx<br><br>http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18125<br><br>https://datras.ices.dk/Data_products/Download/Download_Data_public.aspx |

## Table 112: Compass Rose rMCZ confidence assessment

| Compass Rose rMCZ – confidence assessment | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A4.2 Moderate energy circalittoral rock | NG 12_a4.2 | 0 | N/A | N/A | N/A | No | N/A | **Low** | Only modelled data available to demonstrate the presence of Moderate energy circalittoral rock within the site. There are no data points which support the presence of the feature. | **Low** | Only modelled data available to demonstrate the extent of Moderate energy circalittoral rock within the site with no data points which support the presence of the feature. | N/A |
| A5.1 Subtidal coarse sediment | NG 12_A5.1 | 13 | N/A | N/A | N/A | No | N/A | **High** | Interpreted ground-truthing data clearly demonstrate the presence of the Subtidal coarse sediment feature in the site. There are five points which support the presence of the feature. | **Low** | Only five sample points with patchy isolated distribution available to demonstrate the extent of the Subtidal coarse sediment. Despite extensive sampling across site, expert judgement has been applied to amend the confidence to Low due to the patchy nature of this feature. | N/A |
| A5.2 Subtidal sand | NG 12_A5.2 | 113 | N/A | N/A | N/A | No | N/A | **High** | Interpreted ground-truthing data clearly demonstrate the presence of the Subtidal sand feature in the site. There are 58 points which support the presence of the feature. | **High** | Available sample data well distributed across the site with good match to underlying mapped feature providing high confidence in the extent of Subtidal sand in the site. | N/A |

## Compass Rose rMCZ – confidence assessment

| ENG feature | Site/Feature Code (Unique ID) | Total number of points which verify the ENG feature. | Total number of ENG species data points older than 12 yrs. | Total number of ENG species data points between 6 and 12 yrs. | Total number of ENG species data points 6 yrs old or less. | Expert judgment used. | QA of expert judgement | Confidence in ENG feature presence | Justification for confidence in ENG feature presence | Confidence in ENG feature extent | Justification for confidence in ENG feature extent | General comments on decision made |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | NG 12_15.4 | 4 | N/A | N/A | N/A | No | N/A | **Moderate** | Interpreted ground-truthing data demonstrate the presence of Subtidal mixed sediments. There are four PSA points from Cefas and BGS grabs which support the presence of the feature. | **Low** | Only four sample points with patchy isolated distribution available to demonstrate the extent of the Subtidal mixed sediments. Despite extensive sampling across site, expert judgement has been applied to amend confidence to Low due to the patchy nature of this feature. | N/A |
| Ocean quahog (*Arctica islandica*) | NG 12_SOCI_3 | 1 | 0 | 0 | 1 | Yes | Yes | **Low** | Only one sample point to demonstrate the presence of Ocean quahog in this site. | **Low** | Only one sample point to demonstrate the distribution of Ocean quahog in this site. | Data on number / weight within trawl was not provided. Only presence shown. Search of all tows by all boats in all years within the ICES region sees many points to the North and to the East of the site, however only this one point lies within the site boundary, indicating low abundance. |

| Compass Rose rMCZ – confidence assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| Smelt (*Osmerus eperlanus*) | NG 12_SOCI-32 | 10 | 4 | 3 | 3 | No | N/A | **Moderate** | There are records to demonstrate the presence of Smelt in the site over an extended period of time, but data are limited. There are 10 records from between 1996 and 2012 but only three of these records are from within the last six years. Data were recorded using techniques appropriate for the species with assessment undertaken by specialists. | **Moderate** | Records from surveys contain evidence on the distribution and/ or abundance of the species across the site. Some data are less than 12 years old, but there are insufficient records from within the last six years to justify High confidence (only three records). | N/A |

## Table 113: East of Celtic Deep rMCZ data table

| East of Celtic Deep rMCZ - Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A5.1 Subtidal coarse sediment | FS 11_A5.1 | BSH | Removed | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |
| A5.2 Subtidal sand | FS 11_A5.2 | BSH | N/A | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID:0312) | PSA samples | Yes | Grab | 19 | N/A | N/A | PSA samples collected during CEND0312 and full coverage mulitbeam used to produce a new habitat map for the site. | Yes | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## East of Celtic Deep rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | FS 11_A5.2 | BSH | N/A | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID:0312) | Images | Yes | Video tow | 10 | N/A | N/A | Video and image ground-truth samples collected during CEND0312 and full coverage mulitbeam used to produce a new habitat map for the site | Yes | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.2 Subtidal sand | FS 11_A5.2 | BSH | N/A | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |
| A5.2 Subtidal sand | FS 11_A5.2 | BSH | N/A | BGS seabed sediments data points | PSA points | No | Grabs | **5** | 0 | N/A | Particle Size Analysis (PSA) 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |

## East of Celtic Deep rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | FS 11_A5.2 | BSH | N/A | Irish Marine Institute *Nephrops* Stock Assessment Sediment data points | Sediment type points | No | Grabs | **1** | 0 | N/A | 1 record of Subtidal sand overlapping the extent recommended by the regional MCZ project.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | Irish Marine Institute *Nephrops* survey http://oar.marine.ie/handle/10793/59/browse?type=title&submit_browse=Title |
| A5.3 Subtidal mud | FS 11_A5.3 | BSH | N/A | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID:0312) | PSA samples | Yes | Grab | 8 | N/A | N/A | PSA samples collected during CEND0312 and full coverage mulitbeam used to produce a new habitat map for the site. | Yes | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.3 Subtidal mud | FS 11_A5.3 | BSH | N/A | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## East of Celtic Deep rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | FS 11_A5.3 | BSH | N/A | Irish Marine Institute *Nephrops* Stock Assessment burrow counts data points | *Nephrops* Stock Assessment burrow counts data points | No | Video and camera stills | **5** | 0 | N/A | 5 *Nephrops* burrow density records overlap with the recommended extent of EUNIS A5.3 Subtidal mud as proposed by the regional MCZ project. However the burrow density counts for these records are below 0.1/$m^2$ and therefore cannot be used to validate the features presence. | No | Yes | Yes | Irish Marine Institute FU19 *Nephrops* Grounds 2011 UWTV Survey Report available at http://oar.marine.ie/bitstream/10793/791/1/FU19%20UWTV%202011%20Survey%20Report.pdf |
| A5.3 Subtidal mud | FS 11_A5.3 | BSH | N/A | Irish Marine Institute *Nephrops* Stock Assessment Sediment data points | Sediment type points | No | Grabs | **2** | 0 | N/A | Two PSA samples from Marine Institute indicating presence of Subtidal mud.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | Irish Marine Institute *Nephrops* survey http://oar.marine.ie/handle/10793/59/browse?type=title&submit_browse=Title |

## East of Celtic Deep rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | FS 11_A5.4 | BSH | New Feature | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID:0312) | PSA samples | Yes | Grab | 2 | N/A | N/A | PSA samples collected during CEND0312 and full coverage mulitbeam have been used to produce a new habitat map for the site. | Yes | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| HOCI 13 Mud habitats in deep water | FS 11 HOCI 13 | HOCI | New Feature | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID:0312) | PSA samples | Yes | Grab | 8 | N/A | N/A | PSA samples collected during CEND0312 and full coverage mulitbeam used to produce new habitat map for the site. | Yes | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Table 114: East of Celtic Deep rMCZ confidence assessment

| East of Celtic Deep rMCZ – confidence assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A5.1 Subtidal coarse sediment | FS 11_A5.1 | 0 | N/A | N/A | N/A | N/A | MCZ evidence QA group | **No Confidence** | Only modelled data available to demonstrate the presence of Subtidal coarse sediment within the site. Recent ground-truthing has not recorded this feature within the site, expert judgement has been applied to amend confidence from Low to No confidence. | **No Confidence** | JNCC have no confidence in the presence of this feature within the site, therefore the extent has not been assessed. | Only forms of modelled data were available to assess the presence and extent of the ENG feature EUNIS A5.1 Subtidal coarse sediment. |
| A5.2 Subtidal sand | FS 11_A5.2 | 26 | N/A | N/A | N/A | No | N/A | **High** | A full coverage habitat map from survey with 25 ground-truthing data points clearly demonstrate the presence of Subtidal sand in the site. | **High** | Full coverage habitat map covering more than 50% of the mapped extent of the feature with supporting ground–truth sample data provides high confidence in the extent of Subtidal sand in the site. | N/A |
| A5.3 Subtidal mud | FS 11_A5.3 | 9 | N/A | N/A | N/A | No | N/A | **High** | A full coverage habitat map from survey with 10 ground-truthing data points clearly demonstrate the presence of Subtidal mud in the site. | **High** | Full coverage habitat map covering more than 50% of the mapped extent of the feature with supporting ground–truth sample data provides high confidence in the extent of Subtidal mud in the site. | N/A |

| East of Celtic Deep rMCZ – confidence assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A5.4 Subtidal mixed sediments | FS 11_A5.4 | 2 | N/A | N/A | N/A | No | N/A | **High** | A full coverage habitat map from survey with two ground-truthing data points clearly demonstrate the presence of Subtidal mixed sediments in the site. | **High** | Full coverage habitat map covering more than 50% of the mapped extent of the feature with supporting ground –truth sample data provides high confidence in the extent of Subtidal mixed sediments in the site. | N/A |
| HOCI 13 Mud habitats in deep water | FS 11 HOCI 13 | 8 | N/A | N/A | N/A | No | N/A | **High** | A full coverage habitat map from survey with nine ground-truthing data points clearly demonstrate the presence of Mud habitats in deep water in the site. | **High** | Full coverage habitat map covering more than 50% of the mapped extent of the feature and supporting ground –truth sample data provides high confidence in the extent of Mud habitats in deep water in the site. | N/A |

## Table 115: East of Haig Fras MCZ data table

| East of Haig Fras MCZ - Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A5.3 Subtidal mud | FS 07_A5.3 | BSH | N/A | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND3_12a) | Habitat Map (survey) | No | MESH | 7 | N/A | N/A | Cefas 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. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| Mud habitats in deep water | FS 07_A5.3 | BSH | New Feature | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND3_12a) | PSA points | Yes | Grabs | 7 | N/A | N/A | Cefas survey ID: CEND 3_12a Habitat map - A full coverage habitat map from survey verified presence and extent of Mud habitats in deep water with greater than one validating ground-truth sample. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Table 116: East of Haig Fras MCZ confidence assessment

| East of Haig Fras MCZ – Confidence Assessment | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A5.3 Subtidal mud | FS 07_A5.3 | 7 | N/A | N/A | N/A | No | N/A | **High** | Full coverage habitat map from survey with supporting ground-truth sample data clearly demonstrate the presence of Subtidal mud in the site. | **High** | Full coverage habitat map from survey with ground-truth sample data providing high confidence in the extent of Subtidal mud in the site. | N/A |
| Mud habitats in deep water | FS 07_A5.3 | 7 | N/A | N/A | N/A | No | N/A | High | Full coverage habitat map from survey with supporting ground-truth sample data clearly demonstrate the presence of Mud habitats in deep water in the site. | High | Full coverage habitat map from survey with ground-truth sample data providing high confidence in the extent of Mud habitats in deep water in the site. | N/A |

## Table 117: Farnes East rMCZ data table

| Farnes East rMCZ - Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
| A4.2 Moderate energy circalittoral rock | NG 14_A4.2 | BSH | N/A | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |
| A4.2 Moderate energy circalittoral rock | NG 14_A4.2 | BSH | N/A | BGS hard substrate | Hard substrate map | No | 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 "DataSource: BGS, Admiralty Charts, OLEX, Seismic". The Polygons BGS ID is: BGS_3249. No BGS data point validated this feature. | No | Yes | Yes | enquiries@bgs.ac.uk |
| A4.2 Moderate energy circalittoral rock | NG 14_A4.2 | BSH | N/A | MB0102 Task 2E | Combined Kinetic Energy map | No | N/A | N/A | N/A | N/A | Moderate energy is identified across the site. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |

## Farnes East rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A4.2 Moderate energy circalittoral rock | NG 14_A4.2 | BSH | N/A | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0412) | Habitat map | Yes | Multibeam | N/A | N/A | 2012 | Presence identified in a new habitat map produced for the site, post MB0120 MCZ site verification survey, combing newly acquired multibeam with exciting CHP and Defra DEM data. No ground-truthing from this survey indicating the presence of this habitat type other than the habitat map. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A4.2 Moderate energy circalittoral rock | NG 14_A4.2 | BSH | N/A | CEND0514 - preliminary field assessment | Ground-truthing | Yes | Drop camera | N/A | N/A | 2014 | A preliminary field assessment from CEND 0514 has identified the presence of the feature in multiple ground-truthing samples across the site. | No | Yes | No | Data acquired through the Cefas partnership. Contact JNCC or Cefas direct to learn how to access this information |
| A5.1 Subtidal coarse sediment | NG 14_A5.1 | BSH | N/A | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## Farnes East rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | NG 14_A5.1 | BSH | N/A | BGS seabed sediments data points | PSA points | No | Grab Samples | 22 | N/A | N/A | 22 BGS ground-truthing records were identified during surveys in 1971 & 1982. 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| A5.1 Subtidal coarse sediment | NG 14_A5.1 | BSH | N/A | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0412) | Habitat map | Yes | Multibeam and ground-truthing | N/A | N/A | 2012 | Presence identified in a new habitat map produced for the site, post MB0120 MCZ site verification survey, combing newly acquired multibeam with exciting CHP and Defra DEM data. Presence verified by multiple ground-truthing samples | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Farnes East rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | NG 14_A5.1 | BSH | N/A | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0412) | PSA points | Yes | Grabs | 15 | N/A | 2012 | Presence identified in 15 grab samples collected during MB0120 MCZ site verification survey | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.2 Subtidal sand | NG 14_A5.2 | BSH | N/A | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |
| A5.2 Subtidal sand | NG 14_A5.2 | BSH | N/A | BGS seabed sediments data points | PSA points | No | Grab Samples | 13 | **N/A** | N/A | 13 BGS ground-truthing records were identified during surveys in 1971 & 1982. 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |

## Farnes East rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | NG 14_A5.2 | BSH | N/A | Marine Recorder | Biotope points | No | Ground-truthing | 3 | N/A | N/A | 3 Marine Recorder samples recorded in the site. Sample Refs: ENVRK070001, ENVRK070002, ENVRK070003 | Yes | Yes | Yes | The Marine Recorder snapshot will be available at http://jncc.defra.gov.uk/download/marinerecorderdata |
| A5.2 Subtidal sand | NG 14_A5.2 | BSH | N/A | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0412) | Habitat map | Yes | Multibeam and ground-truthing | N/A | N/A | 2012 | Presence identified in a new habitat map produced for the site, post MB0120 MCZ site verification survey, combing newly acquired multibeam with existing CHP and Defra DEM data. Presence verified by multiple ground-truthing samples | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Farnes East rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | NG 14_A5.2 | BSH | N/A | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0412) | PSA points | Yes | Grabs | 22 | N/A | 2012 | Presence identified in 22 grab samples collected during MB0120 MCZ site verification survey. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.3 Subtidal mud | NG 14_A5.3 | BSH | N/A | Ritchie, A. 2010 (local knowledge) | Habitat map | No | N/A | N/A | N/A | N/A | p68 Net Gain Final Recommendations Report v1.2: "*The location of subtidal mud in NG 14 (and the previous NG 14S) was provided through personal communications with Ritchie, 2011, and was subsequently included as a feature of the site put forward for recommendation.*"<br>Note there is only one BGS subtidal mud record within the site but it is 20km north of the recommended feature A5.3 Subtidal mud. | No | Yes | Yes | http://jncc.defra.gov.uk/PDF/120718_MCZAP_120702_NG_Final_report_version_1.2.pdf |
| A5.3 Subtidal mud | NG 14_A5.3 | BSH | N/A | BGS seabed sediment data points | PSA points | No | Grab | 1 | N/A | N/A | Presence identified by single point from BGS survey in 1982 | Yes | Yes | Yes | enquiries@bgs.ac.uk |

## Farnes East rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | NG 14_A5.3 | BSH | N/A | Marine Recorder | Biotope points | No | Ground-truthing | 1 | N/A | N/A | 1 Marine Recorder sample recorded in the site. Sample Ref: ENVRK080019 | Yes | Yes | Yes | The Marine Recorder snapshot will be available at http://jncc.defra.gov.uk/download/marinerecorderdata |
| A5.3 Subtidal mud | NG 14_A5.3 | BSH | N/A | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0412) | Habitat map | Yes | Multibeam and ground-truthing | N/A | N/A | 2012 | Presence identified in a new habitat map produced for the site, post MB0120 MCZ site verification survey, combing newly acquired multibeam with exciting CHP and Defra DEM data. Presence verified by multiple ground-truthing samples | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Farnes East rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | NG 14_A5.3 | BSH | N/A | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND?0412) | PSA points | Yes | Grabs | 17 | N/A | 2012 | Presence identified in 17 grab samples collected during MB0120 MCZ site verification survey. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.4 Subtidal mixed sediments | NG 14_A5.4 | BSH | N/A | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |
| A5.4 Subtidal mixed sediments | NG 14_A5.4 | BSH | N/A | BGS seabed sediment data points | PSA points | No | Grab | 3 | N/A | N/A | Presence identified by three grab samples from BGS survey in 1982 | Yes | Yes | Yes | enquiries@bgs.ac.uk |

## Farnes East rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | NG 14_A5.4 | BSH | N/A | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND?? | Habitat map | Yes | Multibeam and ground-truthing | N/A | N/A | 2012 | Presence identified in a new habitat map produced for the site, post MB0120 MCZ site verification survey, combing newly acquired multibeam with exciting CHP and Defra DEM data. Presence verified by multiple ground-truthing samples | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.4 Subtidal mixed sediments | NG 14_A5.4 | BSH | N/A | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0412) | PSA points | Yes | Grabs | 46 | N/A | 2012 | Presence identified in 46 grab samples collected during MB0120 MCZ site verification survey. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Farnes East rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Peat and clay exposures | NG 14_HOCI_15 | HOCI | N/A | Lawrence, W. 2011 (local knowledge) | Habitat map | No | N/A | N/A | N/A | N/A | P68 of the Net Gain Final Recommendations Report v1.2: "*The location of subtidal mud in NG 14 (and the previous NG 14S) was provided through personal communications with Ritchie, 2011, and was subsequently included as a feature of the site put forward for recommendation. Within the same site, the location of red clay exposures was identified by Lawrence, 2011 (pers. comm.), and this data was used to support the recommendation of a reference area (rRA 12).*" | No | Yes | Yes | http://jncc.defra.gov.uk/PDF/120718_MCZAP_120702_NG_Final_report_version_1.2.pdf |
| Sea-pen and burrowing megafauna communities | NG14_HOCI_18 | HOCI | New Feature | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0412) | Point | Yes | Stills | 3 | N/A | | Presence identified in stills and videos at 3 location collected during MB0120 MCZ site verification survey. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Farnes East rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | NG14_HOCI_13 | HOCI | New Feature | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0412) | Point | Yes | Grab | 15 | N/A | 2012 | Presence identified in a new habitat map produced for the site, post MB0120 MCZ site verification survey, combing newly acquired multibeam with exciting CHP and Defra DEM data. Presence verified by multiple ground-truthing samples of HOCI and parent habitat A5.3 | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| Ocean quahog (*Arctica islandica*) | NG 14_SOCI_3 | SOCI | New Feature | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0412) | Point | Yes | Grab | 18 | N/A | 2012 | Presence identified via ground-truthing samples acquired during MCZ site verification survey MB0120. Of these 14 were identified as juvenile and 4 as adult, although further investigation is required to establish how the juvenile/adults were established. | N/A | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Farnes East rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ocean quahog (*Arctica islandica*) | NG 14_SOCI_3 | SOCI | New Feature | MB0116: International bottom trawl survey | Point | Yes | Trawl | 1 | N/A | 2009 | Single record recorded during International bottom trawl survey in 2009 | N/A | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18125 |
| Ocean quahog (*Arctica islandica*) | NG 14_SOCI_3 | SOCI | New Feature | MB0116: CEND1110NTD | Point | Yes | Grab | 1 | N/A | 2010 | Single record recorded during grab sampling in North Tyne Dredging area in 2010 | N/A | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18125 |
| Smelt (*Osmerus eperlanus*) | NG 14_SOCI_ | SOCI | New Feature | MB0116: International bottom trawl survey | Point | Yes | Trawl | 22 | | 1976 - 2005 | 22 records found during International bottom trawl surveys between 1976 - 2005 | N/A | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18125 |

## Table 118: Farnes East rMCZ confidence assessment

| Farnes East rMCZ – confidence assessment | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A4.2 Moderate energy circalittoral rock | NG 14_A4.2 | 0 | N/A | N/A | N/A | Yes | N/A | **High** | A preliminary field assessment from a recent MCZ site verification survey has identified the presence of the feature in multiple ground-truthing samples across the site. | **Low** | With only preliminary field assessment results there are no processed ground-truthing records to support the presence of this feature and so the extent is based on acoustic data only. | |
| A5.1 Subtidal coarse sediment | NG 14_A5.1 | 37 | N/A | N/A | N/A | No | N/A | **High** | Extensive sonar data recorded in 2012 interpreted into a habitat map with 15 ground-truth sample points clearly demonstrate the presence of Subtidal coarse sediment in the site. | **High** | New habitat map from survey with the habitat class supported by 15 ground-truthing samples located within the mapped extent providing high confidence in the extent of Subtidal coarse sediment in the site. | |
| A5.2 Subtidal sand | NG 14_A5.2 | 38 | N/A | N/A | N/A | No | N/A | **High** | Extensive sonar data recorded in 2012 interpreted into a habitat map with 22 ground-truth sample points clearly demonstrate the presence of Subtidal sand in the site. | **High** | New habitat map from survey with the habitat class supported by 22 ground-truthing samples located within the mapped extent providing high confidence in the extent of Subtidal sand in the site. | |

## Farnes East rMCZ – confidence assessment

| ENG feature | Site/Feature Code (Unique ID) | Total number of points which verify the ENG feature. | Total number of ENG species data points older than 12 yrs. | Total number of ENG species data points between 6 and 12 yrs. | Total number of ENG species data points 6 yrs old or less. | Expert judgment used. | QA of expert judgement | Confidence in ENG feature presence | Justification for confidence in ENG feature presence | Confidence in ENG feature extent | Justification for confidence in ENG feature extent | General comments on decision made |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | NG 14_A5.3 | 19 | N/A | N/A | N/A | No | N/A | **High** | Extensive sonar data recorded in 2012 interpreted into a habitat map with 17 ground-truth sample points clearly demonstrate the presence of Subtidal mud in the site. | **High** | New habitat map from survey with the habitat class supported by 17 ground-truthing samples located within the mapped extent providing high confidence in the extent of Subtidal mud in the site. | |
| A5.4 Subtidal mixed sediments | NG 14_A5.4 | 49 | N/A | N/A | N/A | No | N/A | **High** | Extensive sonar data recorded in 2012 interpreted into a habitat map with 46 ground-truth sample points clearly demonstrate the presence of Subtidal mixed sediments in the site. | **High** | New habitat map from survey of the site with the habitat class supported by 46 ground-truthing samples located within the mapped extent providing high confidence in the extent of Subtidal mixed sediments in the site. | |
| Mud habitats in deep water | NG | 17 | N/A | N/A | N/A | No | N/A | **High** | There are 17 ground-truth samples which demonstrate the presence of Mud habitats in deep water in the site. | **High** | New habitat map from survey of the site with the habitat class supported 17 ground-truthing samples located within the mapped extent providing high confidence in the extent of Mud habitats in deep water in the site. | |
| Peat and clay exposures | NG | N/A | N/A | N/A | N/A | No | N/A | **Low** | Only a single polygon record from local knowledge with no ground-truthing data to demonstrate the presence of Peat and clay exposures in this site. Sonar data indicate a distinct feature in the area but there is no data to validate this. | **Low** | Only a single polygon record from local knowledge with no ground-truthing to validate to demonstrate the extent of Peat and clay exposures in the site. | |

## Farnes East rMCZ – confidence assessment

| ENG feature | Site/Feature Code (Unique ID) | Total number of points which verify the ENG feature. | Total number of ENG species data points older than 12 yrs. | Total number of ENG species data points between 6 and 12 yrs. | Total number of ENG species data points 6 yrs old or less. | Expert judgment used. | QA of expert judgement | Confidence in ENG feature presence | Justification for confidence in ENG feature presence | Confidence in ENG feature extent | Justification for confidence in ENG feature extent | General comments on decision made |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sea-pen and burrowing megafauna communities | NG 14_HOCI_18 | 3 | N/A | N/A | N/A | No | N/A | **Moderate** | There are three ground-truth samples to demonstrate the presence of Sea-pen and burrowing megafauna communities in the site. | **Moderate** | There are three ground-truthing samples located within a mapped extent of Subtidal mud to demonstrate the extent of Sea-pen and burrowing megafauna communities in the site. | |
| Ocean quahog – (*Arctica islandica*) | NG 14_SOCI_3 | 20 | N/A | N/A | 20 | No | N/A | **High** | There are 20 records from surveys that have occurred within the past six years which demonstrate the presence of Ocean quahog in the site. | **High** | There are 20 records which demonstrate the distribution of Ocean quahog in the site. It should be noted that the majority of records are focused in the east and south-west. | |
| Smelt (*Osmerus eperlanus*) | NG 14_SOCI_32 | 22 | 18 | 4 | | | | **Moderate** | There are 22 records including four between six and12 years old which demonstrate the presence of Smelt in the site. | **Moderate** | Multiple records demonstrate the distribution of Smelt in the site. It should be noted that the majority of records are predominately in the east of the site, with no records identified in the north west or south west. | |

## Table 119: Fulmar rMCZ data table

| Fulmar rMCZ – Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A5.1 Subtidal coarse sediment | NG 17_A5.1 | BSH | N/A | UK SeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |
| A5.1 Subtidal coarse sediment | NG 17_A5.1 | BSH | N/A | BGS seabed sediments data points | PSA points | No | Grabs | 4 | 0 | N/A | 4 BGS records verify the presence of the recommended feature EUNIS Subtidal coarse sediment. 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| A5.2 Subtidal sand | NG 17_A5.2 | BSH | N/A | UK SeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## Fulmar rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | NG 17_A5.2 | BSH | N/A | Cefas | Habitat points | No | Ground-truthing | 1 | N/A | N/A | 1 record verifies the recommended EUNIS A5.2 Subtidal sand feature.<br><br>Survey Name and Codes of that used in the data source for analysis of the presence and extent of this feature: C END 12/08_SLA26_CSEMP T & T PILOT_41 F2 (OS)C | No | Yes | Yes | Data acquired through the Cefas partnership. Contact JNCC or Cefas direct to learn how to access this information. |
| A5.2 Subtidal sand | NG 17_A5.2 | BSH | N/A | BGS seabed sediments data points | PSA points | No | Grabs | **62** | **2** | N/A | 62 BGS records verify the presence of the recommended feature EUNIS Subtidal sand.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | No | No | enquiries@bgs.ac.uk |

| Fulmar rMCZ – Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A5.2 Subtidal sand | NG 17_A5.2 | BSH | N/A | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0812) - PSA data | PSA points | Yes | Grabs | 12 | | 2012 | PSA samples taken during CEND0812 MCZ site verification survey 2012 | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.3 Subtidal mud | NG 17_A5.3 | BSH | New Feature | BGS seabed sediments data points | PSA points | No | Grabs | **1** | **0** | N/A | 1 BGS records verify the presence of the recommended feature EUNIS Subtidal mud.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | No | No | enquiries@bgs.ac.uk |

## Fulmar rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | NG 17_A5.3 | BSH | New Feature | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0812) - PSA data | PSA points | Yes | Grabs | 48 | | 2012 | PSA samples taken during CEND0812 MCZ site verification survey 2012 | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Fulmar rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | NG 17_A5.4 | BSH | New feature | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0812) - PSA data | PSA points | Yes | Grabs | 6 | | 2012 | PSA samples taken during CEND0812 MCZ site verification survey 2012 | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Fulmar rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | NG 17_HOCI_13 | HOCI | New feature | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0812) - PSA data | PSA points | Yes | Grabs | 48 | 48 | 2012 | PSA samples taken during CEND0812 MCZ site verification survey 2012 | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| Native oyster (*Ostrea edulis*) | NG 17_SOCI_3 | SOCI | New feature | MB102 | Species records | Yes | Unknown | 6 | N/A | 1992 | 6 species found at an United Kingdom Offshore Operators Association site in 1992 | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |

## Fulmar rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ocean quahog (*Arctica islandica*) | NG 17_SOCI_3 | SOCI | N/A | Cefas | Species record | No | Ground-truthing | **1** | N/A | **2010** | 1 record verifies the presence of recommended feature *Arctica islandica*.<br><br>Survey Name and Codes of that used in the data source for analysis of the presence and extent of this feature: CEND1110SIT Seabed Integrity Transect North Sea | No | Yes | Yes | Data acquired through the Cefas partnership. Contact JNCC or Cefas direct to learn how to access this information. |
| Ocean quahog (*Arctica islandica*) | NG 17_SOCI_3 | SOCI | N/A | MB0102 Task 2B | Species records | No | Ground-truthing | **52** | N/A | **1977, 1985, 1992 & 2003** | 52 records of *Arctica islandica* from 4 surveys occurring along several transects. Survey codes MRCON01100000002 (1 record from 2003), MRCON01900000025 (9 records in 1977), MRCON01900000098 (19 records in 1985) & MRCON01900000167 (23 records in 1992) | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |
| Ocean quahog (*Arctica islandica*) | NG 17_SOCI_3 | SOCI | N/A | MB116: IFM-GEOMAR | Species records | Yes | Ground-truthing | 3 | N/A | 1902-1912 | Historical benthos data from the North Sea and Baltic Sea from 1902-1912. This dataset has been reconstructed from museum collections. | No | Yes | Yes | Ifm-geomar: Christian-albrechts-university Kiel; Leibniz Institute Of Marine Sciences |

## Fulmar rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ocean quahog (*Arctica islandica*) | NG 17_SOCI_3 | SOCI | N/A | MB116: North Sea International Bottom Trawl Survey | Species records | Yes | Trawl | 6 | N/A | 2007-2011 | Species found at 6 locations during North Sea International Bottom Trawl Surveys 2007 - 2011 | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18125 |
| Ocean quahog (*Arctica islandica*) | NG 17_SOCI_3 | SOCI | N/A | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0812) | Species records | Yes | Grab | 4 | N/A | 2012 | Four examples of Ocean quahog found during grab sampling in 2012 | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Fulmar rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Amphipod shrimp (*Gitanopsis bispinosa*) | NG 17_SOCI | SOCI | New feature | MB0102 | Species records | Yes | Unknown | 1 | N/A | 1992 | Single species found at an United Kingdom Offshore Operators Association site in 1992 | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |
| Smelt (*Osmerus eperlanus*) | NG 17_SOCI | SOCI | New feature | MB116: North Sea International Bottom Trawl Survey | Species records | Yes | Trawl | 49 | N/A | 1970 - 2012 | Species found at 49 locations during North Sea International Bottom Trawl Surveys 1970 - 2012 | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18125 |

## Table 120: Fulmar rMCZ confidence assessment

| Fulmar rMCZ – confidence assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A5.1 Subtidal coarse sediment | NG 17_A5.1 | 4 | N/A | N/A | N/A | Yes | MCZ evidence QA group | **Moderate** | There are four BGS ground-truthing samples to demonstrate the presence of Subtidal coarse sediment in the site | **Low** | Expert judgement applied to assign Low confidence in extent because a recent survey did not record the widespread presence of the feature and JNCC analysis indicates the presence of muddy biotopes across the site. | |
| A5.2 Subtidal sand | NG 17_A5.2 | 75 | N/A | N/A | N/A | Yes | MCZ evidence QA group | **High** | There are 75 data points (from three surveys ) from over five locations which demonstrate the presence of Subtidal sand within the site. | **Low** | Expert judgement applied to assign a Low confidence since recent data conflict with the original classification. JNCC analysis indicates muddy biotopes are present across the site. | |

## Fulmar rMCZ – confidence assessment

| ENG feature | Site/Feature Code (Unique ID) | Total number of points which verify the ENG feature. | Total number of ENG species data points older than 12 yrs. | Total number of ENG species data points between 6 and 12 yrs. | Total number of ENG species data points 6 yrs old or less. | Expert judgment used. | QA of expert judgement | Confidence in ENG feature presence | Justification for confidence in ENG feature presence | Confidence in ENG feature extent | Justification for confidence in ENG feature extent | General comments on decision made |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | NG 17_A5.3 | 49 | N/A | N/A | N/A | Yes | MCZ evidence QA group | **High** | There are 49 ground-truthing data points (from two surveys) which demonstrate the presence of Subtidal mud in the site. | **Moderate** | New feature identified during site verification survey; the feature recorded throughout the site and JNCC analysis indicates the widespread occurrence of muddy biotopes across the site. Expert judgement applied to assign Moderate confidence due to uncertainty introduced by data indicating presence of Subtidal sand (amongst mud) across the site. | |
| A5.4 Subtidal mixed sediments | NG 17_A5.4 | 6 | N/A | N/A | N/A | Yes | MCZ evidence QA group | **High** | There are six ground-truthing samples which demonstrate the presence of Subtidal mixed sediments in the site. | **Low** | Habitat identified in four locations distributed across the site. Expert judgement has been applied to assign Low confidence, particularly since biotope identifies widespread occurrence of identifying muddy biotopes across the site. | |

## Fulmar rMCZ – confidence assessment

| ENG feature | Site/Feature Code (Unique ID) | Total number of points which verify the ENG feature. | Total number of ENG species data points older than 12 yrs. | Total number of ENG species data points between 6 and 12 yrs. | Total number of ENG species data points 6 yrs old or less. | Expert judgment used. | QA of expert judgement | Confidence in ENG feature presence | Justification for confidence in ENG feature presence | Confidence in ENG feature extent | Justification for confidence in ENG feature extent | General comments on decision made |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | NG 17_HOCI_13 | 48 | N/A | N/A | N/A | Yes | MCZ evidence QA group | **High** | There are 48 ground-truthing data points which demonstrate the presence of Mud habitats in deep water in the site. | **Moderate** | New feature found during recent site verification survey that identifies the feature spread throughout the site; biotope analysis indicated muddy biotopes across the site. Expert judgement applied to assign Moderate confidence due to uncertainty introduced by BGS records of Subtidal sand (amongst the mud) across the site. | |
| Native oyster (*Ostrea edulis*) | NG 17_SOCI | 6 | 6 | 0 | 0 | No | N/A | **N/A** | There are six samples identified in UK Offshore Operators Association data. The Scientific Advisory Panel advised that the feature not to go forward due to its association with man-made structures in the site. JNCC agrees with this advice. | **N/A** | There are six samples identified in UK Offshore Operators Association data. The Scientific Advisory Panel advised that the feature should not go forward due to its association with man-made structures in the site. JNCC agrees with this advice. | |
| Ocean quahog (*Arctica islandica*) | NG | 65 | 53 | 3 | 9 | No | N/A | **High** | There are nine records found within the last six years which demonstrate the presence of Ocean quahog in the site. | **High** | Nine records within the last six years identify the species in multiple locations, which demonstrate the distribution of Ocean quahog in the site. | |

## Fulmar rMCZ – confidence assessment

| ENG feature | Site/Feature Code (Unique ID) | Total number of points which verify the ENG feature. | Total number of ENG species data points older than 12 yrs. | Total number of ENG species data points between 6 and 12 yrs. | Total number of ENG species data points 6 yrs old or less. | Expert judgment used. | QA of expert judgement | Confidence in ENG feature presence | Justification for confidence in ENG feature presence | Confidence in ENG feature extent | Justification for confidence in ENG feature extent | General comments on decision made |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Amphipod shrimp (*Gitanopsis bispinosa*) | NG 17_SOCI | 1 | 1 | 0 | 0 | No | N/A | **N/A** | There is only one record identified by the Net Gain regional MCZ project demonstrating the presence of this feature. JNCC advised the project at the time not to assess this feature and this remains our advice. | **N/A** | There is only one record identified by the Net Gain regional MCZ project demonstrating the presence and distribution of this feature. JNCC advised the project at the time not to assess this feature and this remains our advice | |
| Smelt (*Osmerus eperlanus*) | NG 17_SOCI | 49 | 12 | 29 | 8 | | | **High** | There are eight records identified within the past six years to demonstrate the presence of Smelt in this site. | **High** | There are eight records identified within the past six years distributed across the site to demonstrate the distribution of Smelt in the site. | |
| Undulate Ray (*Raja undulata*) | NG 17_SOCI | 0 | 0 | 0 | 0 | No | N/A | **N/A** | No supporting evidence to demonstrate the presence of Undulate ray in this site. | **N/A** | No confirmed presence – predicted extent only with no supporting evidence to demonstrate the distribution of Undulate ray in this site. | |

## Table 121: Greater Haig Fras rMCZ data table

| Greater Haig Fras rMCZ - Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A4.2 Moderate energy circalittoral rock | FS 05_A4.2 | BSH | Removed | JNCC (2008) Offshore Special Area of Conservation: Haig Fras SAC. 2008 Version 4.0 | Report | No | N/A | N/A | N/A | N/A | The Haig Fras SAC SAD maps Annex I reef within the SAC which is within the Greater Haig Fras recommended MCZ and overlaps with the recommended extent for this feature. | No | Yes | Yes | http://jncc.defra.gov.uk/PDF/HaigFras_SelectionAssessment_4.0.pdf |
| A4.2 Moderate energy circalittoral rock | FS 05_A4.2 | BSH | Removed | BGS seabed sediments data points | PSA points | No | Grabs | 0 | 0 | N/A | The 38 records of soft substrata should not be used to discredit the recommended extent of EUNIS A4.2 Moderate energy circalittoral rock because the survey method used may not be appropriate for rock habitat.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | No | No | enquiries@bgs.ac.uk |
| A4.2 Moderate energy circalittoral rock | FS 05_A4.2 | BSH | Removed | MB102 Task 2E | Combined Kinetic Energy map | No | N/A | N/A | N/A | N/A | Moderate energy is identified within the recommended extent of the A4.2 Moderate energy circalittoral rock broad-scale habitat. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |

## Greater Haig Fras rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A4.2 Moderate energy circalittoral rock | FS 05_A4.2 | BSH | Removed | BGS hard substrate | Hard substrate map | No | 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 (BGS) and externally. The data source for this polygon within site was identified as being BGS, Samples, Seismic, and Admiralty Charts: BGS ID (BGS_896), A small section of BGS_1656 also lie within the recommended MCZ. | No | Yes | Yes | enquiries@bgs.ac.uk |
| A4.2 Moderate energy circalittoral rock | FS 05_A4.2 | BSH | Removed | Finding Sanctuary regional MCZ project final recommendations report Selection Assessment Document (2011) | Report | No | N/A | N/A | N/A | N/A | A detailed survey of Haig Fras has been being undertaken by McBreen *et al*. (2011) which is detailed on p.83 of The Temperate Reefs Symposium. During the period 2000–2006, Ellis *et al*. (2007a) carried out approximately 150 tows with 2m-beam trawl have been undertaken during groundfish surveys of the South West offshore area. Catches along the edge of the continental shelf (130–350 m deep) were characterised by large numbers of the anemone *Actinauge richardi*, with the hermit crab *Pagurus prideaux* dominating on coarse grounds in shallower waters. The study described the spatial distribution of the epibenthic fauna Ellis *et al*. (2007a). | No | Yes | Yes | http://jncc.defra.gov.uk/page-6230#download |
| A4.2 Moderate energy circalittoral rock | FS 05_A4.2 | BSH | Removed | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | EUNIS A4.2 Moderate energy circalittoral rock has been mapped. | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## Greater Haig Fras rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | FS 05_A5.1 | BSH | No | Finding Sanctuary regional MCZ project final recommendations report Selection Assessment Document (2011) | N/A | No | N/A | N/A | N/A | N/A | Noted in the regional MCZ project report was the Natura 2000 identification work and other data not supplied by the regional MCZ projects: "*A detailed survey of Haig Fras has been being undertaken by McBreen et al. (2011) which is detailed on p.83 of The Temperate Reefs Symposium. During the period 2000–2006, Ellis et al. (2007a) carried out approximately 150 tows with 2m-beam trawl have been undertaken during groundfish surveys of the South West offshore area. Catches along the edge of the continental shelf (130–350 m deep) were characterised by large numbers of the anemone Actinauge richardi, with the hermit crab Pagurus prideaux dominating on coarse grounds in shallower waters. The study described the spatial distribution of the epibenthic fauna Ellis et al. (2007a).*" | No | Yes | Yes | http://jncc.defra.gov.uk/page-6230#download |
| A5.1 Subtidal coarse sediment | FS 05_A5.1 | BSH | No | BGS seabed sediments data points | PSA points | No | Grabs | **13** | 0 | N/A | There are 13 records of EUNIS A5.1 Subtidal coarse sediment within the recommended extent for ENG feature EUNIS A5.1 Subtidal coarse sediment.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | No | No | enquiries@bgs.ac.uk |

## Greater Haig Fras rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | FS 05_A5.1 | BSH | No | JNCC (2008) Offshore Special Area of Conservation: Haig Fras SAC. 2008 Version 4.0 | Report | No | N/A | N/A | N/A | N/A | The Haig Fras SAC SAD maps Annex I reef within the SAC which is within the Greater Haig Fras recommended MCZ and overlaps with the recommended extent for this feature. | No | Yes | Yes | http://jncc.defra.gov.uk/PDF/HaigFras_SelectionAssessment_4.0.pdf |
| A5.1 Subtidal coarse sediment | FS 05_A5.1 | BSH | No | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | EUNIS A5.1 Subtidal coarse sediment has been mapped. | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## Greater Haig Fras rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | FS 05_A5.1 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) - PSA points | PSA points | Yes | Grabs | 8 | | 2012 | PSA samples collected during CEND1012, analysed to CEFAS data standards | | | | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Greater Haig Fras rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | FS 05_A5.2 | BSH | No | Finding Sanctuary regional MCZ project final recommendations report Selection Assessment Document (2011) | N/A | No | N/A | N/A | N/A | N/A | Noted in the regional MCZ project report was the Natura 2000 identification work and other data not supplied by the regional MCZ projects: "*A detailed survey of Haig Fras has been being undertaken by McBreen et al. (2011) which is detailed on p.83 of The Temperate Reefs Symposium. During the period 2000–2006, Ellis et al. (2007a) carried out approximately 150 tows with 2m-beam trawl have been undertaken during groundfish surveys of the South West offshore area. Catches along the edge of the continental shelf (130–350 m deep) were characterised by large numbers of the anemone Actinauge richardi, with the hermit crab Pagurus prideaux dominating on coarse grounds in shallower waters. The study described the spatial distribution of the epibenthic fauna Ellis et al. (2007a)*." | No | Yes | Yes | http://jncc.defra.gov.uk/page-6230#download |
| A5.2 Subtidal sand | FS 05_A5.2 | BSH | No | JNCC (2008) Offshore Special Area of Conservation: Haig Fras SAC. 2008 Version 4.0 | Report | No | N/A | N/A | N/A | N/A | The Haig Fras SAC SAD maps Annex I reef within the SAC which is within the Greater Haig Fras recommended MCZ and overlaps with the recommended extent for this feature. | No | Yes | Yes | http://jncc.defra.gov.uk/PDF/HaigFras_SelectionAssessment_4.0.pdf |
| A5.2 Subtidal sand | FS 05_A5.2 | BSH | No | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | EUNIS A5.2 Subtidal sand has been mapped. | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## Greater Haig Fras rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | FS 05_A5.2 | BSH | No | BGS seabed sediments data points | PSA points | No | Grabs | 7 | 1 | N/A | There are 7 records of EUNIS A5.3 Subtidal mud within the recommended extent for ENG feature EUNIS A5.3 Subtidal mud.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| A5.2 Subtidal sand | FS 05_A5.2 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) - PSA points | PSA points | Yes | Grabs | 9 | | 2012 | PSA samples collected during CEND1012, analysed to CEFAS data standards | | | | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Greater Haig Fras rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | FS 05_A5.3 | BSH | No | Finding Sanctuary regional MCZ project final recommendations report Selection Assessment Document (2011) | N/A | No | N/A | N/A | N/A | N/A | Noted in the regional MCZ project report was the Natura 2000 identification work and other data not supplied by the regional MCZ projects: "*A detailed survey of Haig Fras has been being undertaken by McBreen et al. (2011) which is detailed on p.83 of The Temperate Reefs Symposium. During the period 2000–2006, Ellis et al. (2007a) carried out approximately 150 tows with 2m-beam trawl have been undertaken during groundfish surveys of the South West offshore area. Catches along the edge of the continental shelf (130–350 m deep) were characterised by large numbers of the anemone Actinauge richardi, with the hermit crab Pagurus prideaux dominating on coarse grounds in shallower waters. The study described the spatial distribution of the epibenthic fauna Ellis et al. (2007a).*" | No | Yes | Yes | http://jncc.defra.gov.uk/page-6230#download |
| A5.3 Subtidal mud | FS 05_A5.3 | BSH | No | JNCC (2008) Offshore Special Area of Conservation: Haig Fras SAC. 2008 Version 4.0 | Report | No | N/A | N/A | N/A | N/A | The Haig Fras SAC SAD maps Annex I reef within the SAC which is within the Greater Haig Fras recommended MCZ and overlaps with the recommended extent for this feature. | No | Yes | Yes | http://jncc.defra.gov.uk/PDF/HaigFras_SelectionAssessment_4.0.pdf |

## Greater Haig Fras rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | FS 05_A5.3 | BSH | No | BGS seabed sediments data points | PSA points | No | Grabs | **14** | 0 | N/A | There are 14 records of EUNIS A5.3 Subtidal mud within the recommended extent for ENG feature EUNIS A5.3 Subtidal mud.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| A5.3 Subtidal mud | FS 05_A5.3 | BSH | No | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | EUNIS A5.3 Subtidal mud has been mapped. | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## Greater Haig Fras rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | FS 05_A5.3 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) - PSA points | PSA points | Yes | Grabs | 33 | | 2012 | PSA samples collected during CEND1012, analysed to CEFAS data standards | | | | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Greater Haig Fras rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | FS 05_A5.4 | BSH | No | Finding Sanctuary regional MCZ project final recommendations report Selection Assessment Document (2011) | N/A | No | N/A | N/A | N/A | N/A | Noted in the regional MCZ project report was the Natura 2000 identification work and other data not supplied by the regional MCZ projects: "*A detailed survey of Haig Fras has been being undertaken by McBreen et al. (2011) which is detailed on p.83 of The Temperate Reefs Symposium. During the period 2000–2006, Ellis et al. (2007a) carried out approximately 150 tows with 2m-beam trawl have been undertaken during groundfish surveys of the South West offshore area. Catches along the edge of the continental shelf (130–350 m deep) were characterised by large numbers of the anemone Actinauge richardi, with the hermit crab Pagurus prideaux dominating on coarse grounds in shallower waters. The study described the spatial distribution of the epibenthic fauna Ellis et al. (2007a).*" | No | Yes | Yes | http://jncc.defra.gov.uk/page-6230#download |
| A5.4 Subtidal mixed sediments | FS 05_A5.4 | BSH | No | JNCC (2008) Offshore Special Area of Conservation: Haig Fras SAC. 2008 Version 4.0 | Report | No | N/A | N/A | N/A | N/A | The Haig Fras SAC SAD maps Annex I reef within the SAC which is within the Greater Haig Fras recommended MCZ and overlaps with the recommended extent for this feature. | No | Yes | Yes | http://jncc.defra.gov.uk/PDF/HaigFras_SelectionAssessment_4.0.pdf |

## Greater Haig Fras rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | FS 05_A5.4 | BSH | No | BGS seabed sediments data points | PSA points | No | Grabs | **9** | **1** | N/A | There are 9 records of EUNIS A5.4 Subtidal mixed sediments within the recommended extent for ENG feature EUNIS A5.4 Subtidal mixed sediments.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| A5.4 Subtidal mixed sediments | FS 05_A5.4 | BSH | No | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | EUNIS A5.4 Subtidal mixed sediments has been mapped. | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## Greater Haig Fras rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | FS 05_A5.4 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) - PSA points | PSA points | Yes | Grabs | 6 | | 2012 | PSA samples collected during CEND1012, analysed to CEFAS data standards | | | | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| Mud habitats in deep water | FS 05_HOCI_13 | BSH | No | BGS seabed sediments data points | PSA points | No | Grabs | | 14 | N/A | There are 14 records of EUNIS A5.3 Subtidal mud within the recommended extent for ENG feature EUNIS A5.3 Subtidal mud.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |

## Greater Haig Fras rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | FS 05_HOCI_13 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) - PSA points | PSA points | Yes | Grabs | | 33 | 2012 | PSA samples collected during CEND1012, analysed to CEFAS data standards | Yes | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Greater Haig Fras rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fan mussel (*Atrina fragilis*) | FS 05_SOCI_05 | BSH | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) - Video/Still | Video/Still | Yes | Dropdown video and camera | 2 | N/A | 2012 | Mixture of live and dead images - only live ones noted. Likely to be more present given the cryptic nature of species and quality of imagery. | N/A | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| Haig Fras rock complex | FS 05_G9 | Geological | No | Geological and geomorphological FOCI | MB0102 Task 2a Erosional Fluvio Glacial Features | No | Habitat map | QA as per the MB0102 Task | N/A | N/A | Polygon created from the MB0102 Task 2A data layer Gupta et al (2007) | No | Yes | Yes | http://randd.defra.gov.uk/Document.aspx?Document=mb0102_8589_TRP.pdf |

## Greater Haig Fras rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haig Fras rock complex | FS 05_G9 | Geological | No | Geological and geomorphological FOCI | Hard substrate map | No | 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 (BGS) and externally. The data source for this polygon within site was identified as being BGS, Samples, Seismic, and Admiralty Charts: BGS ID (BGS_896), A small section of BGS_1656 also lie within the recommended MCZ. | No | Yes | Yes | enquiries@bgs.ac.uk |
| Haig Fras rock complex | FS 05_G9 | Geological | No | Geological and geomorphological FOCI | Report | No | N/A | N/A | N/A | N/A | A detailed survey of Haig Fras has been being undertaken by McBreen *et al*. (2011) which is detailed on p.83 of The Temperate Reefs Symposium. During the period 2000–2006, Ellis *et al*. (2007a) carried out approximately 150 tows with 2m-beam trawl have been undertaken during groundfish surveys of the South West offshore area. Catches along the edge of the continental shelf (130–350 m deep) were characterised by large numbers of the anemone *Actinauge richardi*, with the hermit crab *Pagurus prideaux* dominating on coarse grounds in shallower waters. The study described the spatial distribution of the epibenthic fauna Ellis *et al*. (2007a). | No | Yes | Yes | http://jncc.defra.gov.uk/page-6230#download |
| Haig Fras rock complex | FS 05_G9 | Geological | No | Geological and geomorphological FOCI | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | EUNIS A4.2 Moderate energy circalittoral rock has been mapped. | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## Table 122: Greater Haig Fras rMCZ confidence assessment

| Greater Haig Fras rMCZ – confidence assessment | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A4.2 Moderate energy circalittoral rock | FS 05_A4.2 | N/A | N/A | N/A | N/A | N/A | N/A | **Not Assessed** | Not assessed as this feature is protected through the Haig Fras cSAC/SCI and as a result, should not be a feature within the MCZ. | **Not Assessed** | Not assessed as this feature is protected through the Haig Fras cSAC/SCI and as a result, should not be a feature within the MCZ. | |
| A5.1 Subtidal coarse sediment | FS 05_A5.1 | **21** | N/A | N/A | N/A | Yes | Yes | **High** | Interpreted ground-truthing data (from 21 sediment grab samples) demonstrates the presence of Subtidal coarse sediment in the site. | **Moderate** | High number of data points across the site, and general but not a complete match with the BGS DigSBS250 substrate map layer demonstrate the extent of Subtidal coarse sediment in the site. | |
| A5.2 Subtidal sand | FS 05_A5.2 | **16** | N/A | N/A | N/A | Yes | Yes | **High** | Interpreted ground-truthing data (from 16 sediment grab samples) demonstrate the presence of Subtidal sand in the site. | **Moderate** | High number of data points across the site, and general but not a complete match with the BGS DigSBS250 substrate map layer demonstrate the extent of Subtidal sand in the site. | |

## Greater Haig Fras rMCZ – confidence assessment

| ENG feature | Site/Feature Code (Unique ID) | Total number of points which verify the ENG feature. | Total number of ENG species data points older than 12 yrs. | Total number of ENG species data points between 6 and 12 yrs. | Total number of ENG species data points 6 yrs old or less. | Expert judgment used. | QA of expert judgement | Confidence in ENG feature presence | Justification for confidence in ENG feature presence | Confidence in ENG feature extent | Justification for confidence in ENG feature extent | General comments on decision made |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | FS 05_A5.3 | 47 | N/A | N/A | N/A | Yes | Yes | **High** | Presence of Subtidal mud is supported by interpreted ground-truthing data (from 47 sediment grab samples). | **High** | High number of data points across the site, and good match of points to BGS DigSBS250 substrate map layer demonstrate the extent of Subtidal mud in the site. | |
| A5.4 Subtidal mixed sediments | FS 05_A5.4 | **15** | N/A | N/A | N/A | Yes | Yes | **High** | Interpreted ground-truthing data (from 15 sediment grab samples) demonstrate the presence of Subtidal mixed sediments in the site. | **Moderate** | High number of data points across the site, and general but not complete match with the BGS DigSBS250 substrate map layer demonstrate the extent of Subtidal mixed sediments in the site. | |
| Mud habitats in deep water | FS 05_HOCI_13 | 47 | N/A | N/A | N/A | Yes | Yes | **High** | Interpreted ground-truthing data (47 sediment grab samples) demonstrate the presence of Subtidal mud (parent feature) in the site. | **High** | High number of data points across the site, and good accordance of parent feature points to BGS DigSBS250 substrate map layer demonstrate the extent of Mud habitats in deep water in the site. | |

## Greater Haig Fras rMCZ – confidence assessment

| ENG feature | Site/Feature Code (Unique ID) | Total number of points which verify the ENG feature. | Total number of ENG species data points older than 12 yrs. | Total number of ENG species data points between 6 and 12 yrs. | Total number of ENG species data points 6 yrs old or less. | Expert judgment used. | QA of expert judgement | Confidence in ENG feature presence | Justification for confidence in ENG feature presence | Confidence in ENG feature extent | Justification for confidence in ENG feature extent | General comments on decision made |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fan mussel (*Atrina fragilis*) | FS 05_SOCI_05 | 2 | N/A | N/A | 2 | Yes | Yes | **Moderate** | Multiple records (three stations - two live and one dead), from 2012 demonstrate the presence of Fan mussel in the site. There are an insufficient number of samples to support moderate confidence but expert judgement was applied to assign moderate confidence | **Low** | No habitat map available and only two live samples (one dead sample) to demonstrate the distribution of Fan mussel in the site. | |
| Haig Fras rock complex | FS 05_G9 | N/A | N/A | N/A | N/A | N/A | N/A | **High** | Full multibeam acoustics and video/still/grab ground-truthing demonstrates the presence of the Haig Fras Rock Complex in the site. | **High** | Full multibeam acoustics to demonstrate the extent of the Haig Fras rock Complex in the site. | |

## Table 123: Mid St Georges Channel rMCZ data table

| Mid St Georges Channel rMCZ – Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A4.2 Moderate energy circalittoral rock | ISCZ 04_A4.2 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0513) | Video | Yes | Video tow | 5 (no. of video tows) | N/A | N/A | 44 images at 5 sample stations collected from the MB0120 MCZ verification survey. Videos analysis for patches of continuous A4.2. | Yes | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A4.2 Moderate energy circalittoral rock | ISCZ 04_A4.2 | BSH | No | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## Mid St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A4.2 Moderate energy circalittoral rock | ISCZ 04_A4.2 | BSH | No | MB0102 Task 2E | Combined Kinetic Energy map | No | N/A | N/A | N/A | N/A | Moderate energy is identified within the recommended extent of EUNIS A4.2 Moderate energy circalittoral rock. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |
| A4.2 Moderate energy circalittoral rock | ISCZ 04_A4.2 | BSH | No | BGS hard substrate | Hard substrate map | No | 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 (BGS) and externally. The data source and survey identification for the polygons within site was identified as BGS_245: BGS, Samples, Seismic, Admiralty Charts, BGS_246: BGS, Samples, Seismic, Admiralty Charts, BGS_247: BGS, Admiralty Charts, BGS_251: BGS, Samples, Admiralty Charts, | No | Yes | Yes | enquiries@bgs.ac.uk |

## Mid St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | ISCZ 04_A5.1 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0513) | PSA points | Yes | Grab | 47 | N/A | N/A | MB0120 MCZ verification survey. | Yes | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Mid St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | ISCZ 04_A5.1 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0513) | Image points | Yes | Video tow | 65 | N/A | N/A | MB0120 MCZ verification survey. | Yes | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.1 Subtidal coarse sediment | ISCZ 04_A5.1 | BSH | No | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## Mid St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | ISCZ 04_A5.1 | BSH | No | Marine Recorder | Habitat points | No | Ground-truthing | N/A | 1 | N/A | 1 record of "Gravelly sand/sandy gravel with *Venus casina*, *Glycymeris*, hydroids and *crisiidae*" which verifies the soft substrate parent habitat EUNIS A5. | No | Yes | Yes | 'The Marine Recorder snapshot will be available at http://jncc.defra.gov.uk/download/marinerecorderdata' |
| A5.1 Subtidal coarse sediment | ISCZ 04_A5.1 | BSH | No | Cefas | Habitat points | No | Ground-truthing | 1 | 0 | N/A | The Cefas data points for EUNIS A5.2 Subtidal sand verify the ENG feature. | No | Yes | Yes | Data acquired through the Cefas partnership. Contact JNCC or Cefas direct to learn how to access this information. |
| A5.1 Subtidal coarse sediment | ISCZ 04_A5.1 | BSH | No | BGS seabed sediments data points | PSA points | No | Grabs Samples (GS) and two records collected using a Van | 2 | 1 | N/A | Two records verify the feature EUNIS A5.1 and 1 record of EUNIS A5.2 verifies the parent feature.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |

## Mid St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | ISCZ 04_A5.2 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0513) | PSA points | Yes | Grab | 11 | N/A | N/A | MB0120 MCZ verification survey. | Yes | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Mid St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | ISCZ 04_A5.2 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0513) | Image points | Yes | Video tow | 2 | N/A | N/A | MB0120 MCZ verification survey. | Yes | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.2 Subtidal Sands | ISCZ 04_A5.2 | BSH | No | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## Mid St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | ISCZ 04_A5.2 | BSH | No | BGS seabed sediments data points | PSA points | No | Grabs Samples (GS) and two records collected using | 2 | 1 | N/A | Two records verify the feature A5.2 and 1 record of A5.1 verifies the parent feature.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| A5.4 Subtidal mixed sediments | ISCZ 04_A5.4 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0513) | PSA points | Yes | Grab | 57 | N/A | N/A | MB0120 MCZ verification survey. | Yes | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Mid St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | ISCZ 04_A5.4 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0513) | Image points | Yes | Video tow | 67 | N/A | N/A | MB0120 MCZ verification survey. | Yes | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.4 Subtidal mixed sediments | ISCZ 04_A5.4 | BSH | No | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## Mid St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | ISCZ 04_A5.4 | BSH | No | BGS seabed sediments data points | PSA points | No | Grabs Samples (GS) and two records collected using | 0 | 1 | N/A | One record of EUNIS A5.1 verifies the parent feature.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| A5.4 Subtidal mixed sediments | ISCZ 04_A5.4 | BSH | No | Marine Recorder | Habitat points | No | Ground-truthing | N/A | N/A | N/A | 1 record of "Shelly, masses of dead Modiolus shells" (Survey ID: MRMIT1800000007D) | No | No | No | The Marine Recorder snapshot will be available at http://jncc.defra.gov.uk/download/marinerecorderdata |

## Mid St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.6 Subtidal biogenic reefs | ISCZ 04_A5.6 | BSH | New Feature | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0513) | Image points | Yes | Video tow | 1 | N/A | 2013 | MB0120 MCZ verification survey. A5.62 Mussel beds, 2 images approx 100m apart on one video trawl in west of the rMCZ. Expert judgement used for assessment of feature. | Yes | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Table 124: Mid St Georges Channel rMCZ confidence assessment

| Mid St Georges Channel rMCZ – confidence assessment | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A4.2 Moderate energy circalittoral rock | ISCZ 04_A4.2 | 5 | N/A | N/A | N/A | No | N/A | **High** | Ground-truth sample data from five video tows that demonstrate the presence of Moderate energy circalittoral rock in the site. | **Moderate** | There is limited knowledge about the feature across the site (except in the south east) to demonstrate the extent of Moderate energy circalittoral rock. | |
| A5.1 Subtidal coarse sediment | ISCZ 04_A5.1 | 50 | N/A | N/A | N/A | No | N/A | **High** | There are 49 sediment sample points throughout the site that demonstrate the presence of Subtidal coarse sediment in the site. | **High** | There are 49 sediment sample points well distributed throughout the site that demonstrate the extent of Subtidal coarse sediment. | |
| A5.2 Subtidal sand | ISCZ 04_A5.2 | 13 | N/A | N/A | N/A | No | N/A | **High** | There are 13 sediment sample points that demonstrate the presence of Subtidal sand in the site. | **High** | Many ground-truth stations well distributed across the site to demonstrate the extent of the Subtidal sand feature. | |

| Mid St Georges Channel rMCZ – confidence assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A5.4 Subtidal mixed sediments | ISCZ 04_A5.4 | 57 | N/A | N/A | N/A | No | N/A | **High** | There are 57 sediment sample points that demonstrate the presence of Subtidal mixed sediments in the site. | **High** | There are 57 sediment sample points well distributed throughout the site that demonstrate the extent of Subtidal mixed sediments. | |
| A5.6 Subtidal biogenic reefs | ISCZ 04_A5.6 | 1 | N/A | N/A | N/A | Yes | MCZ evidence QA group | **Low** | There are only two ground-truthing samples from one video tow to demonstrate the presence of Subtidal biogenic reefs in the site. | **Low** | Only two ground-truthing samples from one video tow are available to show the extent of Subtidal biogenic reefs in the site. | Expert judgement has been used when assessing this feature. |

## Table 125: Mud Hole rMCZ data table

| Mud Hole rMCZ – Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A5.3 Subtidal mud | ISCZ 01_A5.3 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CO0812) | Habitat Map | Yes | N/A | N/A | N/A | N/A | 100% coverage habitat map with MESH score of 83 from MCZ verification survey. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.3 Subtidal mud | ISCZ 01_A5.3 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CO0812) | PSA points | Yes | Grab Samples | 18 | N/A | N/A | 18 Particle Size Analysis points are distribution through the site boundary/feature extent | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Mud Hole rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | ISCZ 01_A5.3 | BSH | No | UK SeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |
| A5.3 Subtidal mud | ISCZ 01_A5.3 | BSH | No | BGS seabed sediments data points | PSA points | No | Grab Samples | 2 | **1** | N/A | 2 BGS records of EUNIS A5.3 support the presence of the recommended feature EUNIS A5.3 Subtidal mud. One BGS record of EUNIS A5.2 Subtidal sand supports the presence of the parent feature only. 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| A5.3 Subtidal mud | ISCZ 01_A5.3 | BSH | No | Hinz H., Prieto V. & Kaiser M.J. 2009. Trawl disturbance on benthic communities: chronic effects and experimental predictions. Ecological Applications 19: 761-773 | Peer-reviewed Journal article | No | N/A | N/A | N/A | N/A | 2 of the 20 sample sites overlap the subtidal mud feature in the northern part of the site. These 2 sample areas lie within a statistical cluster characterised by greater depth and finer sediments with a higher percentage of silt & clay (at least >50%) and very fine particulates (median particle size <0.88mm). | No | Yes | Yes | Hinz H., Prieto V. & Kaiser M.J. 2009. Trawl disturbance on benthic communities: chronic effects and experimental predictions. Ecological Applications 19: 761-773 |

## Mud Hole rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | ISCZ 01_HOCI_13 | HOCI | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CO0812) | Habitat Map | Yes | N/A | N/A | N/A | N/A | 100% coverage habitat map with MESH score of 83 from MCZ verification survey. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| Mud habitats in deep water | ISCZ 01_HOCI_13 | HOCI | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CO0812) | PSA points | Yes | Grab Samples | 18 | N/A | N/A | 18 Particle Size Analysis points are distribution through the site boundary/feature extent | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Mud Hole rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | ISCZ 01_HOCI_13 | HOCI | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CO0812) | Photo/Video | Yes | Video tow | 24 | N/A | N/A | Video/photo taken at 24 ground-truthing stations record EUNIS A5.3 in over 20m depth | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| Mud habitats in deep water | ISCZ 01_HOCI_13 | HOCI | No | BGS seabed sediments data points | PSA points | No | Grab Samples | N/A | N/A | N/A | 1 BGS record of EUNIS A5.3 lies over recommended FOCI Mud habitats in deep water. Due to how the BSH A5.3 habitat is correlated to Habitat FOCI Mud habitats in deep water it is not possible to use this data point to verify or discredit the presence of the feature habitat. Please see the Ecological Network Guidance for more detail.<br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | No | No | enquiries@bgs.ac.uk |

## Mud Hole rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | ISCZ 01_HOCI_13 | HOCI | No | Hinz H., Prieto V. & Kaiser M.J. 2009. Trawl disturbance on benthic communities: chronic effects and experimental predictions. Ecological Applications 19: 761-773 | Peer-reviewed Journal article | No | N/A | N/A | N/A | N/A | 1 of the 20 sample areas lies over the recommended feature mud habitats in deep water. This sample area is grouped within a statistical cluster characterised by greater depth and finer sediments with a higher percentage of silt & clay (at least >50%) and very fine particulates (median particulate size <0.88mm) | No | Yes | Yes | Hinz H., Prieto V. & Kaiser M.J. 2009. Trawl disturbance on benthic communities: chronic effects and experimental predictions. Ecological Applications 19: 761-773 |
| Mud habitats in deep water | ISCZ 01_HOCI_13 | HOCI | No | MB0102 Task 2C Mud habitats in deep water habitat map | Habitat map | No | N/A | N/A | N/A | N/A | MESH habitat maps were used to produce the Mud habitats in deep water polygon for the MB0102 (Task 2C) contract and have a MESH confidence score of 0%. Unique ID GB000681 - Map of the offshore benthic communities of the Irish Sea - classified using a mixture of characterising species, substrate and depth. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368<br><br>Mackie, A.S.Y. (1990) Offshore Benthic Communities of the Irish Sea. In: The Irish Sea: An Environmental Review, Part 1, 169-218. |

## Mud Hole rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | ISCZ 01_HOCI_13 | HOCI | No | MB0102 Task 2C Mud habitats in deep water habitat map (amended by ISCZ project) | Habitat map (amended) | No | N/A | N/A | N/A | N/A | MESH habitat maps were used to produce the Mud habitats in deep water polygon for the MB0102 (Task 2C) contract and thereby have a MESH confidence score (0%) and Unique ID GB000681 - Map of the offshore benthic communities of the Irish Sea - classified using a mixture of characterising species, substrate and depth. Amendments were made by the ISCZ project to the data set in the Eastern Irish Sea. The southern Subtidal mud/sand boundary was refined in order to take into account best available evidence as demonstrated in (LUMB, C., JOHNSTON, M. & BUSSELL, J. 2011. Evidence on the distribution and quality of mud-related features in the Eastern Irish Sea. A paper presented to the ISCZ Project Team and Regional Stakeholder Group.) | No | Yes | Yes | Irish Sea Conservation Zones project Modified National Dataset (no restrictions specified) http://jncc.defra.gov.uk/page-6230 |
| Sea-pen and burrowing megafauna communities | ISCZ 01_HOCI_18 | HOCI | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CO0812) | Habitat Map | Yes | N/A | N/A | N/A | N/A | 100% coverage habitat map with MESH score of 83 from MCZ verification survey. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Mud Hole rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sea-pen and burrowing megafauna communities | ISCZ 01_HOCI_18 | HOCI | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CO0812) | Photo/Video | Yes | Video tow | 24 | N/A | N/A | 24 video/photo samples throughout the site extent of the site show the presence of burrowing megafauna. There was no evidence for Sea-pens within the site. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| Sea-pen and burrowing megafauna communities | ISCZ 01_HOCI_18 | HOCI | No | BGS seabed sediments data points | PSA points | No | Grab Samples | N/A | N/A | N/A | 2 BGS record of A5.3 lies over recommended FOCI Sea-pen and burrowing megafauna. Due to how the BSH A5.3 habitat is correlated to Habitat FOCI Sea-pen and burrowing megafauna communities it is not possible to use this data point to verify or discredit the presence of the feature habitat. Please see the Ecological Network Guidance for more detail.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | No | No | enquiries@bgs.ac.uk |

## Mud Hole rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sea-pen and burrowing megafauna communities | ISCZ 01_HOCI_18 | HOCI | No | Hinz H., Prieto V. & Kaiser M.J. 2009. Trawl disturbance on benthic communities: chronic effects and experimental predictions. Ecological Applications 19: 761-773 | Peer-reviewed Journal article | No | N/A | N/A | N/A | N/A | 1 of the 20 sample areas lies over the recommended feature sea-pen and burrowing megafauna. This sample area is grouped within a statistical cluster characterised by greater depth and finer sediments with a higher percentage of silt & clay (at least >50%) and very fine particulates (median particulate size <0.88mm). | No | Yes | Yes | Hinz H., Prieto V. & Kaiser M.J. 2009. Trawl disturbance on benthic communities: chronic effects and experimental predictions. Ecological Applications 19: 761-773 |
| Sea-pen and burrowing megafauna communities | ISCZ 01_HOCI_18 | HOCI | No | MB0102 Task 2C Sea-pen and burrowing megafauna | Habitat map | No | N/A | N/A | N/A | N/A | MESH habitat maps were used to produce the Sea-pen and burrowing megafauna polygon for the MB0102 (Task 2C) contract and have a MESH confidence score of 0%. Unique ID GB000681 - Map of the offshore benthic communities of the Irish Sea - classified using a mixture of characterising species, substrate and depth. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368<br><br>Mackie, A.S.Y. (1990) Offshore Benthic Communities of the Irish Sea. In: The Irish Sea: An Environmental Review, Part 1, 169-218. |

## Mud Hole rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sea-pen and burrowing megafauna communities | ISCZ 01_HOCI_18 | HOCI | No | MB0102 Task 2C Sea-pen and burrowing megafauna (amended by ISCZ project) | Habitat map (amended) | No | N/A | N/A | N/A | N/A | MESH habitat maps were used to produce the Sea-pen and burrowing megafauna for the MB0102 (Task 2C) contract and have a MESH confidence score of 0% and Unique ID GB000681 - Map of the offshore benthic communities of the Irish Sea - classified using a mixture of characterising species, substrate and depth. Amendments were made by the ISCZ project to the data set in the Eastern Irish Sea. The southern Subtidal mud/sand boundary was refined in order to take into account best available evidence as demonstrated in (LUMB, C., JOHNSTON, M. & BUSSELL, J. 2011. Evidence on the distribution and quality of mud-related features in the Eastern Irish Sea. A paper presented to the ISCZ Project Team and Regional Stakeholder Group.) | No | Yes | Yes | Irish Sea Conservation Zones project Modified National Dataset (no restrictions associated with the amended habitat map) |

## Table 126: Mud Hole rMCZ confidence assessment

| Mud Hole rMCZ – confidence assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A5.3 Subtidal mud | ISCZ 01_A5.3 | 20 | N/A | N/A | N/A | No | N/A | **High** | A full coverage habitat map from survey with 20 supporting ground–truthing sample data (from MB0120 and BGS) demonstrate the presence of Subtidal mud in the site. | **High** | A full coverage habitat map from survey with supporting ground–truthing sample data demonstrate the extent of Subtidal mud in the site. | |
| Mud habitats in deep water | ISCZ 01_HOCI_13 | 18 | 0 | 0 | 21 | No | N/A | **High** | A full coverage habitat map from survey with 18 supporting ground –truthing sample data (MB0120) demonstrate the presence of Mud habitats in deep water in the site. | **High** | A full coverage habitat map from survey with supporting ground –truthing sample data demonstrate the extent of Mud habitats in deep water in the site. | |
| Sea-pen and burrowing megafauna communities | ISCZ 01_HOCI_18 | 24 | 0 | 0 | 21 | No | N/A | **High** | A full coverage habitat map from survey with 24 supporting ground –truthing sample data (Marine Institute) demonstrate the presence of Sea-pen and burrowing megafauna communities in the site. | **High** | A full coverage habitat map from survey with supporting ground –truthing sample data demonstrate the extent of Sea-pen and burrowing megafauna communities in the site. | |

## Table 127: North-East of Farnes Deep MCZ data table

| North-East of Farnes Deep MCZ - Data | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A5.3 Subtidal mud | NG 15_A5.3 | BSH | | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0412) | Habitat Map (survey) | No | N/A | **2** | N/A | N/A | Cefas 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. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18221 |
| A5.4 Subtidal mixed sediments | NG 15_A5.4 | BSH | | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0412) | Habitat Map (survey) | No | N/A | **21** | N/A | N/A | Cefas survey ID: CEND 4_12 Habitat map - A full coverage habitat map from survey verified presence and extent of A5.3 Subtidal mixed sediments with greater than one validating ground-truth sample. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18221 |

## North-East of Farnes Deep MCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | NG_15_HOCI_13 | HOCI | New feature | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0412) | Habitat Map (survey) | Yes | Grabs | **2** | | N/A | Cefas survey ID: CEND 4_12 Habitat map - A full coverage habitat map from survey verified presence and extent of Mud habitats in deep water with greater than one validating ground-truth sample. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18221 |
| Sea-pen and burrowing megafauna communities | NG 15_HOCI_18 | FOCI habitat | | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0412) | Habitat Map (survey) | No | N/A | **0** | N/A | N/A | Further analysis has been conducted and while sea-pens have been identified in 4 images within the site, it has failed to identify any presence of burrows and/or mounds. | No | Yes | N/A | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18221 |

## North-East of Farnes Deep MCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ocean quahog (*Arctica islandica*) | NG 15_SOCI_3 | FOCI Species | New feature | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0412) | Point | Yes | Grabs | 13 | N/A | 2012 | There were 13 data points of which 4 were video the rest PSA | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| Ocean quahog (*Arctica islandica*) | NG 15_SOCI_3 | FOCI Species | New feature | Cefas - North sea benthos samples 1986 | Point | Yes | Grab | 1 | N/A | 1986 | Single sample found in grab sample in 1986 | No | Yes | Yes | http://www.cefas.defra.gov.uk/contact-us.aspx |

## Table 128: North-East of Farnes Deep MCZ confidence assessment

| North-East of Farnes Deep MCZ – Confidence Assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A5.3 Subtidal mud | NG 15_A5.3 | 2 | N/A | N/A | N/A | Yes | MCZ Evidence QA | **Moderate** | A full coverage habitat map from survey with two ground-truthing sample data which demonstrate the presence of Subtidal mud in the site. Expert judgement applied to reduce confidence to Moderate based since both samples showed faunal communities more characteristic of sandier sediments. | **Moderate** | A full coverage habitat map from survey with ground-truthing sample data demonstrate the extent of Subtidal mud in the site. Expert judgement applied to reduce confidence to Moderate due to the uncertainty in samples verifying the presence of Subtidal mud in the site. | |
| A5.4 Subtidal mixed Sediments | NG 15_A5.4 | 21 | N/A | N/A | N/A | No | N/A | **High** | A full coverage habitat map from survey with supporting ground-truthing sample data demonstrates the presence of Subtidal mixed sediments in the site. | **High** | A full coverage habitat map from survey with ground-truthing sample data demonstrates the extent of Subtidal mixed sediments in the site. | |
| Mud habitats in deep water | | 2 | N/A | N/A | N/A | Yes | MCZ Evidence QA group | **Moderate** | A full coverage habitat map from survey with supporting ground-truthing sample data and feature recorded in a low energy environment demonstrates the presence of Mud habitats in deep water. Expert judgement applied to reduce confidence to Moderate since both samples showed faunal communities more characteristic of sandier sediments. | **Moderate** | A full coverage habitat map from survey with supporting ground-truthing sample data and the feature recorded in a low energy environment. Expert judgement applied to reduce confidence to Moderate based due to the uncertainty in samples verifying the presence of the habitat in the site | |

## North-East of Farnes Deep MCZ – Confidence Assessment

| ENG feature | Site/Feature Code (Unique ID) | Total number of points which verify the ENG feature. | Total number of ENG species data points older than 12 yrs. | Total number of ENG species data points between 6 and 12 yrs. | Total number of ENG species data points 6 yrs old or less. | Expert judgment used. | QA of expert judgement | Confidence in ENG feature presence | Justification for confidence in ENG feature presence | Confidence in ENG feature extent | Justification for confidence in ENG feature extent | General comments on decision made |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sea-pen and burrowing megafauna communities | NG | 0 | N/A | N/A | N/A | No | N/A | **No confidence** | There are no data to support the presence of the Sea-pen and burrowing megafauna communities within the site. | **No confidence** | There are no data to support the extent of the Sea-pen and burrowing megafauna communities within the site. | |
| Ocean quahog (*Arctica islandica*) | NG | 14 | 1 | 0 | 13 | No | N/A | High | There are 13 samples recording the presence of Ocean quahog in the site, collected in 2012 as part of MB0120. | High | Data records identify locations in the northern half and south west portion of the site where the dominant habitats are Subtidal sand, Subtidal mud and Subtidal mixed sediments but not in the south east portion, where the dominant habitat is Subtidal coarse sediments. | |

## Table 129: North St Georges Channel rMCZ data table

| North St Georges Channel rMCZ – Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats)** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A4.1 High energy circalittoral rock | ISCZ 03_A4.1 | BSH | Feature removed | Marine Recorder | Ground-truthing | No | Stills and video | 0 | 216 (plus 12 in the boundary | N/A | Data collected from survey in 2005 Survey Name: 2005_08 - RV Celtic Voyager - NW of Anglesey (Survey Key: MRMIT6000000000A), 2009-2010 CCW / JNCC North West Anglesey Modiolus drop down video survey, and 2003_07 - RV Prince Madog - Irish Sea Pilot Project. | Yes | Yes | Yes | The Marine Recorder snapshot available at http://jncc.defra.gov.uk/page-1599 |
| A4.1 High energy circalittoral rock | ISCZ 03_A4.1 | BSH | Feature removed | MB102 Task 2E | Combined Kinetic Energy map | No | N/A | N/A | N/A | N/A | Moderate and high energy is identified within the site. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |
| A4.2 Moderate energy circalittoral rock | ISCZ 03_A4.2 | BSH | No | EUSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | Predicts the presence and extent of EUNIS A4.2 | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |
| A4.2 Moderate energy circalittoral rock | ISCZ 03_A4.2 | BSH | No | MB102 Task 2E | Combined Kinetic Energy map | No | N/A | N/A | N/A | N/A | Moderate energy is identified across the majority of the site. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |

| North St Georges Channel rMCZ – Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A4.2 Moderate energy circalittoral rock | ISCZ 03_A4.2 | BSH | No | BGS hard substrate | Hard substrate map | No | N/A | N/A | N/A | N/A | The interpretation of the BGS hard substrate maps were based on a variety of data sourced from within the British Geological Survey and externally. The data source for the polygon within the site was identified as "DataSource: BGS, Admiralty charts, Samples, Seismic, Multibeam". The Polygons BGS ID is: BGS_3285, BGS_180, BGS_219, BGS_190, BGS_258, BGS_259, BGS_260, BGS_261, BGS_262, BGS_263. No BGS data point validated this feature. | No | Yes | Yes | enquiries@bgs.ac.uk |
| A4.2 Moderate energy circalittoral rock | ISCZ 03_A4.2 | BSH | No | Marine Recorder | Habitat point | No | Stills and video | 92 (plus 12 in the boundary | 92 (plus 12 in the boundary | N/A | Data collected from the following surveys: 2003_07 - RV Prince Madog - Irish Sea Pilot Project, 2005_08 - RV Celtic Voyager - NW of Anglesey, 2008_05 - RV Cefas Endeavour - Submarine Structures in the Mid Irish Sea and Solan Bank, 2009-2010 CCW / JNCC North West Anglesey Modiolus drop down video survey. | No | Yes | Yes | The Marine Recorder snapshot available at http://jncc.defra.gov.uk/page-1599 |
| A4.2 Moderate energy circalittoral rock | ISCZ 03_A4.2 | BSH | No | SEA6 Commander Jack video positions. | Habitat points | No | Ground-truthing | N/A | 4 | N/A | There are point data denoting drop-down video positions for the SEA6 Kommandor Jack Video Positions dataset. The dataset includes point data that have a narrative habitat description only. The habitat descriptions and information on how/whether the samples were used in the evidence assessment (see bold text below) are as follows:<br>The following samples were **used to verify parent feature** (although note that there is no known QA of the dataset and this was taken into account):<br>1xrock outcrops, 3x rocks, | No | Yes | Yes | http://www.offshore-sea.org.uk/site/scripts/sea_archive.php |

## North St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A4.2 Moderate energy circalittoral rock | ISCZ 03_A4.2 | BSH | No | Habitat map generated from the following survey: 2008 05-RV Cefas Endeavour Irish Sea Solan Bank. | Habitat map | No | Interpretation of geophysical and | N/A | N/A | N/A | Habitat map generated from the following survey 2008 survey 05-RV on the Cefas Endeavour in the Irish Sea/Solan Bank area. This surveyed Croker Carbonate slabs cSAC and a habitat map from survey was produced. | No | Yes | Yes | http://jncc.defra.gov.uk/PDF/jncc430_webversion.pdf |
| A4.2 Moderate energy circalittoral rock | ISCZ 03_A4.2 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND_5_13) | Habitat map | Yes | N/A | N/A | N/A | N/A | Habitat map produced from 100% multibeam coverage of site, in conjunction with ground-truthing via video, stills and PSA samples. Resultant habitat map has a MESH confidence score of 84. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## North St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A4.2 Moderate energy circalittoral rock | ISCZ 03_A4.2 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND_5_13) | Habitat points | Yes | Stills and video tows | 517 stills | 517 stills | N/A | Note that the stills were split among sampling stations. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.1 Subtidal coarse sediment | ISCZ 03_A5.1 | BSH | No | EUSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/euseamap |
| A5.1 Subtidal coarse sediment | ISCZ 03_A5.1 | BSH | No | BGS seabed sediments data points | PSA points | No | Grabs | 19 (plus 1 point in the boundary | 32 (plus 2 points in the boundary | 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |

## North St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | ISCZ 03_A5.1 | BSH | No | Marine Recorder | Habitat points | No | Stills and video | 24 (plus 11 points in the | 69 (plus 11 points in the | N/A | Datasets verifying the feature were from the following surveys:2009-2010 CCW / JNCC North West Anglesey Modiolus drop down video survey, and 2007_01 - RV Aora - Mid Irish Sea Reefs. | No | Yes | Yes | The Marine Recorder snapshot available at http://jncc.defra.gov.uk/page-1599 |
| A5.1 Subtidal coarse sediment | ISCZ 03_A5.1 | BSH | No | Cefas data mining dataset | Habitat points | No | Ground-truthing | 5 | 0 | N/A | There are 5 data points from the following Cefas Endeavour surveys (Survey key: CEND 12/07_ME3112_Irish Sea Benthos_ISB45A, CEND 12/07_ME3112_Irish Sea Benthos_ISB45B, CEND 12/07_ME3112_Irish Sea Benthos_ISB45C, CEND 12/07_ME3112_Irish Sea Benthos_ISB45Met, CEND 13/07_SLA26_CSEMP Cardigan Bay pilot 07_35 E4 | No | Yes | Yes | Data acquired through the Cefas partnership. Contact JNCC or Cefas direct to learn how to access this information. |
| A5.1 Subtidal coarse sediment | ISCZ 03_A5.1 | BSH | No | 2007 Irish Sea pilot data | Habitat points | No | Dredge sample | 0 | 1 | N/A | There are four data points from the Irish Sea pilot study which lie within the site boundary. The data points have a narrative habitat description only. The habitat descriptions and information on how/whether the samples were used in the evidence assessment (see brackets) are as follows:<br>3x'Clump of *Modiolus*' (excluded from the assessment because habitat description does not verify or contradict parent feature)<br>1x'Silty coarse sand-shell-gravel-stones, *Modiolus* (common), *Glycymeris & Venus*' **(used to verify parent feature - A5)** | No | Yes | Yes | http://jncc.defra.gov.uk/pdf/irishseapilot_all.pdf |

## North St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | ISCZ 03_A5.1 | BSH | No | SEA6 Commander Jack video positions. | Habitat Points | No | Drop-down video | 0 | 59 | N/A | There are point data denoting drop-down video positions for the SEA6 Kommandor Jack Video Positions dataset. The dataset includes point data that have a narrative habitat description only. The habitat descriptions and information on how/whether the samples were used in the evidence assessment (see bold text below) are as follows:<br>1x bedrock with silty covering (excluded from the assessment because true parent feature is uncertain)<br>The following samples were used to verify parent feature (although note that there is no known QA of the dataset and this was taken into account):<br>3x sand, 1x shelly sediment, 1x stones and sand, 1xsand and shell fragments, 1xmuddy sediment, 1xcoarse sand and shell, 1xCamera on bottom. Silty-mud, 1x finer sediment, less shell, 1xsand ripples, 1ssand with shell fragments,<br>1xv soft silty mud, 18xvery soft sediment, silty-mud; 16xvery soft sediment, silty-mud; Burrows, 6xshell debris, 1x shell debris and Asteria, 1xshell fragments evident, 1xshelly sand, 1xshelly sand, 1x shelly sediment, 1xstones and sand,. | No | Yes | Yes | http://www.offshore-sea.org.uk/site/scripts/sea_archive.php |
| A5.1 Subtidal coarse sediment | ISCZ 03_A5.1 | BSH | No | Habitat map generated from the following survey: 2008 05-RV Cefas Endeavour Irish Sea Solan Bank. | Habitat map | No | Interpretation of geophysical and | N/A | N/A | N/A | Habitat map generated from the following survey 2008 survey 05-RV on the Cefas Endeavour in the Irish Sea/Solan Bank area. This surveyed Croker Carbonate slabs cSAC and a habitat map from survey was produced. | No | Yes | Yes | http://jncc.defra.gov.uk/PDF/jncc430_webversion.pdf |

## North St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | ISCZ 03_A5.1 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND_5_13) | Habitat map | Yes | N/A | N/A | N/A | N/A | Habitat map produced from 100% multibeam coverage of site, in conjunction with ground-truthing via video, stills and PSA samples. Resultant habitat map has a MESH confidence score of 84. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.1 Subtidal coarse sediment | ISCZ 03_A5.1 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND_5_13) | Habitat points | Yes | Grabs, Stills and video tows | 67 stills, 25 grabs, 124 records from video tows(note these are not individual tows) | 2330 stills, 92 grabs, 233 video tow records (note these are not individual tows) | N/A | Note that the stills would be split among sampling stations and the number of points relating to the video tows indicate points along the tow where a feature has been identified and these would be split among individual tows. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## North St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | ISCZ 03_A5.2 | BSH | No | EUSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/euseamap |
| A5.2 Subtidal sand | ISCZ 03_A5.2 | BSH | No | BGS seabed sediments data points | PSA points | No | Grabs | 6 | 32 (plus 2 points in the boundary | 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| A5.2 Subtidal sand | ISCZ 03_A5.2 | BSH | No | Marine Recorder | Habitat points | No | Video, stills and grabs | 11 | 67 (plus 11 points in the boundary | N/A | Data verifying the feature were from the following surveys: 2003_07 - RV Prince Madog - Irish Sea Pilot Project and 2005 CCW HABMAP sublittoral survey | No | Yes | Yes | The Marine Recorder snapshot will be available at http://jncc.defra.gov.uk/download/marinerecorderdata |
| A5.2 Subtidal sand | ISCZ 03_A5.2 | BSH | No | Cefas data mining dataset | Habitat points | No | Ground-truthing | 1 | 1 | N/A | The survey key is as follows: CEND 13/07_SLA26_CSEMP Cardigan Bay pilot 07_36 E5 | No | Yes | Yes | Data acquired through the Cefas partnership. Contact JNCC or Cefas direct to learn how to access this information. |

## North St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | ISCZ 03_A5.2 | BSH | No | SEA6 Commander Jack video positions. | Habitat Points | No | Drop-down video | 0 | 59 | N/A | There are point data denoting drop-down video positions for the SEA6 Kommandor Jack Video Positions dataset. The dataset includes point data that have a narrative habitat description only. The habitat descriptions and information on how/whether the samples were used in the evidence assessment (see bold text below) are as follows:<br>1x bedrock with silty covering (excluded from the assessment because true parent feature is uncertain)<br>The following samples were used to verify parent feature (although note that there is no known QA of the dataset and this was taken into account):<br>3x sand, 1x shelly sediment, 1x stones and sand, 1xsand and shell fragments, 1xmuddy sediment, 1xcoarse sand and shell, 1xCamera on bottom. Silty-mud, 1x finer sediment, less shell, 1xsand ripples, 1ssand with shell fragments,<br>1xv soft silty mud, 18xvery soft sediment, silty-mud; 16xvery soft sediment, silty-mud; Burrows, 6xshell debris, 1x shell debris and Asteria, 1xshell fragments evident, 1xshelly sand, 1xshelly sand, 1x shelly sediment, 1xstones and sand,. | No | Yes | Yes | http://www.offshore-sea.org.uk/site/scripts/sea_archive.php |
| A5.2 Subtidal sand | ISCZ 03_A5.2 | BSH | No | Habitat map generated from the following survey: 2008 05-RV Cefas Endeavour Irish Sea Solan Bank. | Habitat map | No | Interpretation of geophysical and | N/A | N/A | N/A | Habitat map generated from the following survey 2008 survey 05-RV on the Cefas Endeavour in the Irish Sea/Solan Bank area. This surveyed Croker Carbonate slabs cSAC and a habitat map from survey was produced. | No | Yes | Yes | http://jncc.defra.gov.uk/PDF/jncc430_webversion.pdf |

| North St Georges Channel rMCZ – Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A5.2 Subtidal sand | ISCZ 03_A5.2 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND_5_13) | Habitat map | Yes | N/A | N/A | N/A | N/A | Habitat map produced from 100% multibeam coverage of site, in conjunction with ground-truthing via video, stills and PSA samples. Resultant habitat map has a MESH confidence score of 84. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.2 Subtidal sand | ISCZ 03_A5.2 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND_5_13) | Habitat points | Yes | Grabs, Stills and video tows | 460 stills, 20 grabs, 51 records from video tows (note these are | 2330 stills, 92 grabs, 233 video tow records (note these are not | N/A | Note that the stills would be split among sampling stations and the number of points relating to the video tows indicate points along the tow where a feature has been identified and these would be split among individual tows. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## North St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | ISCZ 03_A5.2 | BSH | No | 2007 Irish Sea pilot data | Habitat points | No | Dredge sample | 0 | 1 | N/A | There are four data points from the Irish Sea pilot study which lie within the site boundary. The data points have a narrative habitat description only. The habitat descriptions and information on how/whether the samples were used in the evidence assessment (see brackets) are as follows:<br>3x'Clump of *Modiolus*' (excluded from the assessment because habitat description does not verify or contradict parent feature)<br>1x'Silty coarse sand-shell-gravel-stones, *Modiolus* (common), *Glycymeris & Venus*' (used to verify parent feature - A5) | No | Yes | Yes | http://jncc.defra.gov.uk/pdf/irishseapilot_all.pdf |
| A5.3 Subtidal mud | ISCZ 03_A5.3 | BSH | No | 2007 Irish Sea pilot data | Habitat points | No | Dredge sample | 0 | 1 | N/A | There are four data points from the Irish Sea pilot study which lie within the site boundary. The data points have a narrative habitat description only. The habitat descriptions and information on how/whether the samples were used in the evidence assessment (see brackets) are as follows:<br>3x'Clump of *Modiolus*' (excluded from the assessment because habitat description does not verify or contradict parent feature)<br>1x'Silty coarse sand-shell-gravel-stones, *Modiolus* (common), *Glycymeris & Venus*' (used to verify parent feature - A5) | No | Yes | Yes | http://jncc.defra.gov.uk/pdf/irishseapilot_all.pdf |

| North St Georges Channel rMCZ – Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A5.3 Subtidal mud | ISCZ 03_A5.3 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND_5_13) | Habitat map | Yes | N/A | N/A | N/A | N/A | Habitat map produced from 100% multibeam coverage of site, in conjunction with ground-truthing via video, stills and PSA samples. Resultant habitat map has a MESH confidence score of 84. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.3 Subtidal mud | ISCZ 03_A5.3 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND_5_13) | Habitat points | Yes | Grabs, Stills and video tows | 2 grabs | 2330 stills, 92 grabs, 233 video tow records (note these are not | N/A | Note that the stills would be split among sampling stations and the number of points relating to the video tows indicate points along the tow where a feature has been identified and these would be split among individual tows. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## North St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | ISCZ 03_A5.3 | BSH | No | SEA6 Commander Jack video positions. | Habitat Points | No | Drop-down video | 0 | 59 | N/A | There are point data denoting drop-down video positions for the SEA6 Kommandor Jack Video Positions dataset. The dataset includes point data that have a narrative habitat description only. The habitat descriptions and information on how/whether the samples were used in the evidence assessment (see bold text below) are as follows:<br>1x bedrock with silty covering **(excluded from the assessment because true parent feature is uncertain)**<br>The following samples were **used to verify parent feature** (although note that there is no known QA of the dataset and this was taken into account):<br>3x sand, 1x shelly sediment, 1x stones and sand, 1xsand and shell fragments, 1xmuddy sediment, 1xcoarse sand and shell, 1xCamera on bottom. Silty-mud, 1x finer sediment, less shell, 1xsand ripples, 1xsand with shell fragments,<br>1xv soft silty mud, 18xvery soft sediment, silty-mud; 16xvery soft sediment, silty-mud; Burrows, 6xshell debris, 1x shell debris and Asteria, 1xshell fragments evident, 1xshelly sand, 1xshelly sand, 1x shelly sediment, 1xstones and sand,. | No | Yes | Yes | http://www.offshore-sea.org.uk/site/scripts/sea_archive.php |

## North St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | ISCZ 03_A5.4 | BSH | No | 2007 Irish Sea pilot data | Habitat points | No | Dredge sample | 0 | 1 | N/A | There are four data points from the Irish Sea pilot study which lie within the site boundary. The data points have a narrative habitat description only. The habitat descriptions and information on how/whether the samples were used in the evidence assessment (see brackets) are as follows:<br>3x'Clump of *Modiolus*' (excluded from the assessment because habitat description does not verify or contradict parent feature)<br>1x'Silty coarse sand-shell-gravel-stones, *Modiolus* (common), *Glycymeris* & *Venus*' (used to verify parent feature - A5) | No | Yes | Yes | http://jncc.defra.gov.uk/pdf/irishseapilot_all.pdf |
| A5.4 Subtidal mixed sediments | ISCZ 03_A5.4 | BSH | No | EUSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/euseamap |
| A5.4 Subtidal mixed sediments | ISCZ 03_A5.4 | BSH | No | BGS seabed sediments data points | PSA points | No | Grabs | 7 (plus 1 point in the boundary | 32 (plus 2 points in the boundary | 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |

| North St Georges Channel rMCZ – Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A5.4 Subtidal mixed sediments | ISCZ 03_A5.4 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND_5_13) | Habitat map | Yes | N/A | N/A | N/A | N/A | Habitat map produced from 100% multibeam coverage of site, in conjunction with ground-truthing via video, stills and PSA samples. Resultant habitat map has a MESH confidence score of 84. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.4 Subtidal mixed sediments | ISCZ 03_A5.4 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND_5_13) | Habitat points | Yes | Grabs, Stills and video tows | 45 grabs, 694 stills, 58 records from video tows (note these are | 2330 stills, 92 grabs, 233 video tow records (note these are not | N/A | Note that the stills would be split among sampling stations and the number of points relating to the video tows indicate points along the tow where a feature has been identified and these would be split among individual tows. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## North St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.6 Subtidal biogenic reefs | ISCZ 03_A5.6 | BSH | No | Marine Recorder | Habitat | No | Various ground- | 0 | N/A | N/A | There are multiple data records in Marine Recorder which denote the presence of Sabellaria species/reef and *Modiolus Modiolus* but there is no evidence to confirm that these meet the definition of 'reef' and so have not been used as supporting evidence in this assessment. | No | Yes | Yes | The Marine Recorder snapshot available at http://jncc.defra.gov.uk/page-1599 |
| A5.6 Subtidal biogenic reefs | ISCZ 03_A5.6 | BSH | No | REES, I. (2005) Assessment of the status of horse mussel (Modiolus modiolus) beds in the Irish Sea off NW Anglesey. DTI-SEA 6 Sub-contract report. | Ground-truthing | No | Dredge | 2 samples with 'Few' against presence of | 0 | N/A | Note that there are three data points which verify the presence of Modiolus modiolus but they do not include any information on the density of the individuals (N.B. Modiolus modiolus was absent from a further record). There are therefore insufficient data to verify the presence of Biogenic reefs from this dataset, anywhere within the site boundary. | Yes | Yes | Yes | REES, I. (2005) Assessment of the status of horse mussel (*Modiolus modiolus*) beds in the Irish Sea off NW Anglesey. DTI-SEA 6 Sub-contract report. |
| A5.6 Subtidal biogenic reefs | ISCZ 03_A5.6 | BSH | No | RVPedryn survey off NWAnglesey | Point data | No | video | 0 - Numerous samples | N/A | N/A | Numerous samples indicating presence of the species but no evidence to confirm that these meet the definition of 'beds' and so have not been used as supporting evidence in this assessment. | N/A | Yes | Yes | Natural Resources Wales: enquiries@naturalresourceswales.gov.uk |

## North St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.6 Subtidal biogenic reefs | ISCZ 03_A5.6 | BSH | No | NW Anglesey Reef Area of Search: Multibeam interpretation and selection of potential ground-truthing stations. JNCC Contract : C09-0203-0172. | Multibeam | Yes | Multibeam | N/A | N/A | N/A | The findings of the survey were that there are no features in the survey area that appear to be biogenic in origin. | N/A | Yes | Yes | Report not yet published – contact mcz@jncc.gov.uk |
| Horse mussel (*Modiolus modiolus*) beds | ISCZ 03_HOCI_09 | HOCI | No | Horse Mussel (Modiolus Modiolus) beds - Regional project updated national data set MB102 Task 2C . | Habitat points | No | Unknown | N/A | N/A | N/A | Updated national data set received from Regional Project. No points / polygons within site. | No | Yes | Yes | http://jncc.defra.gov.uk/page-6230 |
| Horse mussel (*Modiolus modiolus*) beds | ISCZ 03_HOCI_09 | HOCI | No | Marine Recorder | Habitat points | No | Ground-truthing | 4 | N/A | N/A | There are 4 data records in Marine Recorder which denote the presence of *Modiolus modiolus* but there is no evidence to confirm that these meet the definition of 'beds' and so have not been used as supporting evidence in this assessment. | No | Yes | Yes | The Marine Recorder snapshot will be available at http://jncc.defra.gov.uk/download/marinerecorderdata |

## North St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Horse mussel (*Modiolus modiolus*) beds | ISCZ 03_HOCI_09 | HOCI | No | REES, I. (2005) Assessment of the status of horse mussel (Modiolus modiolus) beds in the Irish Sea off NW Anglesey. DTI-SEA 6 Sub-contract report. | Habitat | No | Dredge | 2 samples with 'Few' against presence of | N/A | N/A | Note that there are three data points which verify the presence of Modiolus modiolus but they do not include any information on the density of the individuals (N.B. *Modiolus modiolus* was absent from a further record). There are therefore insufficient data to verify the presence of Biogenic reefs from this dataset, anywhere within the site boundary. | Yes | Yes | Yes | REES, I. (2005) Assessment of the status of horse mussel (*Modiolus modiolus*) beds in the Irish Sea off NW Anglesey. DTI-SEA 6 Sub-contract report. |
| Horse mussel (*Modiolus modiolus*) beds | ISCZ 03_HOCI_09 | HOCI | No | RVPedryn survey off NWAnglesey | Point data | No | video | 0 - Numerous samples indicating | N/A | N/A | Numerous samples indicating presence of the species but no evidence to confirm that these meet the definition of 'beds' and so have not been used as supporting evidence in this assessment. | N/A | Yes | Yes | Natural Resources Wales: enquiries@naturalresourceswales.gov.uk |
| Horse mussel (*Modiolus modiolus*) beds | ISCZ 03_HOCI_09 | HOCI | No | NW Anglesey Reef Area of Search: Multibeam interpretation and selection of potential ground-truthing stations. JNCC Contract : C09-0203-0172. | Multibeam | Yes | Multibeam | N/A | N/A | N/A | The findings of the survey were that there are no features in the survey area that appear to be biogenic in origin. | N/A | Yes | Yes | Report not yet published – contact mcz@jncc.gov.uk |

## North St Georges Channel rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Drumlins | ISCZ 03_G12 | Geological feature | No | MB0102 Task 2A | Habitat map | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |
| Drumlins | ISCZ 03_G12 | Geological feature | No | 2005 Celtic Voyager survey. | Multibeam | No | Multibeam | N/A | N/A | N/A | N/A | No | Yes | Yes | The Marine Institute (Republic of Ireland) DataRequests@marine.ie |
| Ocean quahog (*Arctica islandica*) | ISCZ_03_SOCI | SOCI | Yes | MB102 Task 2B | Point | Yes | Trawl | 2 | N/A | 1998 | 1998 North Sea, English Channel, Bristol Channel and Irish Sea CEFAS 4m beam trawl survey. Species found at 2 locations during this survey | No | Yes | N/A | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |

## Table 130: North St Georges Channel rMCZ confidence assessment

| North St Georges Channel rMCZ – confidence assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A4.1 High energy circalittoral rock | ISCZ 03_A4.1 | 0 | N/A | N/A | N/A | Yes | Yes | No | Data are only available for the parent feature data to demonstrate the presence of High energy circalittoral rock in the site. Given the extensive sampling that has been undertaken at this site that has not identified the feature, expert judgement assigned No confidence in presence of the feature. | No | Only data are available for the parent feature to demonstrate the extent of High energy circalittoral rock. Given the extensive sampling that has been undertaken at this site, expert judgement assigned No confidence in feature extent. | |
| A4.2 Moderate energy circalittoral rock | ISCZ 03_A4.2 | (Outside of Croker): 312 Cefas stills, 3 BGS | N/A | N/A | N/A | No | N/A | High | A habitat map from survey with feature polygons containing 55 video tows and interpreted ground-truthing data (video, still image from survey) demonstrate the presence of Moderate energy circalittoral rock in the site. | High | Sample data well distributed across site and supported by a habitat map (from survey) demonstrates the extent of Moderate energy circalittoral rock in the site. | |

## North St Georges Channel rMCZ – confidence assessment

| ENG feature | Site/Feature Code (Unique ID) | Total number of points which verify the ENG feature. | Total number of ENG species data points older than 12 yrs. | Total number of ENG species data points between 6 and 12 yrs. | Total number of ENG species data points 6 yrs old or less. | Expert judgment used. | QA of expert judgement | Confidence in ENG feature presence | Justification for confidence in ENG feature presence | Confidence in ENG feature extent | Justification for confidence in ENG feature extent | General comments on decision made |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | ISCZ 03_A5.1 | 25 PSA, 1176 still, 124 video), 5 Cefas | N/A | N/A | N/A | No | N/A | High | A habitat map from survey with feature polygons containing 49 biological validation samples (and two points in the extension area) and interpreted ground-truthing data (video, still image and grab samples from survey) demonstrates the presence of Subtidal coarse sediment in the site. Most records agree with respect to the habitat type shown on the map. | High | Sample data well distributed across site and supported by a habitat map (from survey) demonstrates the extent of Subtidal coarse sediment in the site. | |
| A5.2 Subtidal sand | ISCZ 03_A5.2 | Cefas 2013 (20 PSA, 460 | N/A | N/A | N/A | No | N/A | High | A habitat map from survey with feature polygons containing 38 validation samples and interpreted ground-truthing data (video, still image and grab samples from survey) demonstrate the presence of Subtidal sand in the site. | High | Sample data well distributed across site and supported by a habitat map (from survey) demonstrates the extent of Subtidal sand in the site. | |
| A5.3 Subtidal mud | ISCZ 03_A5.3 | 2 (Cefas 2013) | N/A | N/A | N/A | Yes - for | Yes | Moderate | A habitat map with polygons demonstrates the presence of Subtidal mud in the site, however the two ground-truthing points do not fall within the mud polygons. | Low | As there has been extensive sampling within the site that has not identified the feature, and the data points that are present do not match the mapped extent of Subtidal mud, expert judgement assigned Low confidence to the feature extent. | |
| A5.4 Subtidal mixed sediments | ISCZ 03_A5.4 | Cefas 2013 (45 grabs, 694 | N/A | N/A | N/A | No | N/A | High | A habitat map from survey with polygons containing 52 ground-truth samples (and one point in extension area) and interpreted ground-truthing data (video, still image and grab samples from survey) demonstrate the presence of Subtidal mixed sediments. | High | Sample data well distributed across site and supported by a habitat map (from survey) demonstrates the extent of Subtidal mixed sediments in the site. | |

## North St Georges Channel rMCZ – confidence assessment

| ENG feature | Site/Feature Code (Unique ID) | Total number of points which verify the ENG feature. | Total number of ENG species data points older than 12 yrs. | Total number of ENG species data points between 6 and 12 yrs. | Total number of ENG species data points 6 yrs old or less. | Expert judgment used. | QA of expert judgement | Confidence in ENG feature presence | Justification for confidence in ENG feature presence | Confidence in ENG feature extent | Justification for confidence in ENG feature extent | General comments on decision made |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.6 Subtidal biogenic reefs | ISCZ 03_A5.6 | 4 (Rees), 5 (CCW) | N/A | N/A | N/A | Yes - presence and | Yes | Low | There are nine data points five are more than12 years old that demonstrate the presence of *Modiolus modiolus* and *Sabellaria spinulosa* in the site JNCC are uncertain whether the *Modiolus modiolus* beds and *Sabellaria* records actually constitute biogenic reefs due to sampling methods employed and limited other supporting data. Given our uncertainty in the feature classification from the underlying data, expert judgement assigned Low confidence. | Low | No habitat map available and, limited records to demonstrate the extent of Subtidal biogenic reefs in the site. Given the uncertainty in the feature classification from the underlying data, expert judgement assigned Low confidence. | |
| Horse mussel (*Modiolus modiolus*) beds | ISCZ 03_HOCI_09 | 4 (Rees), 5 (CCW) | N/A | N/A | N/A | Yes - presence and extent | Yes | Low | There are nine data points, five are more than12 years old and four are less than 6 years old that demonstrate the presence of Horse mussel (*Modiolus modiolus*) beds. JNCC are uncertain whether the *Modiolus modiolus* records identified actually constitute a bed due to sampling methods used and limited other data. Expert judgement assigned Low confidence. | Low | No habitat map available and limited records to demonstrate the extent of Horse mussel (*Modiolus modiolus*) beds. JNCC are uncertain in the feature classification due to the underlying data, expert judgement assigned Low confidence. | |
| Drumlins | ISCZ 03_G12 | N/A | N/A | N/A | N/A | No | N/A | High | Distinct full coverage multibeam records demonstrate the presence of the Drumlins geomorphological feature | High | Distinct full coverage multibeam records demonstrate the extent of the Drumlins feature within the site | |

## Table 131: North-West of Jones Bank rMCZ data table

| North-West of Jones Bank rMCZ - Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A5.1 Subtidal coarse sediment | FS 04_A5.1 | BSH | No | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |
| A5.1 Subtidal coarse sediment | FS 04_A5.1 | BSH | No | BGS seabed sediments data points | PSA points | No | Grabs | **1** | **0** | N/A | 1 record of EUNIS A5.1 Subtidal coarse sediment overlaps the extent of EUNIS A5.1 Subtidal coarse sediment as recommended by the regional MCZ project. 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |

## North-West of Jones Bank rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | FS 04_A5.1 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) (with Gardline Tridens (9060)) PSA samples points | PSA points | Yes | Grabs | **2** | **0** | 2012 | MB0120 MCZ verification survey | Yes | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## North-West of Jones Bank rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | FS 04_A5.3 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) | Habitat map (modelled) | Yes | N/A | N/A | N/A | 2012 | MB0120 MCZ verification survey | N/A | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.2 Subtidal sand | FS 04_A5.2 | BSH | No | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## North-West of Jones Bank rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | FS 04_A5.2 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) (with Gardline Tridens (9060)) PSA samples points | PSA points | Yes | Grabs | 5 | 0 | 2012 | MB0120 MCZ verification survey | Yes | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## North-West of Jones Bank rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | FS 04_A5.3 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) - habitat map | Habitat map (modelled) | Yes | N/A | N/A | N/A | 2012 | MB0120 MCZ verification survey | N/A | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.3 Subtidal mud | FS 04_A5.3 | BSH | No | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## North-West of Jones Bank rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | FS 04_A5.3 | BSH | No | BGS seabed sediments data points | PSA points | No | Grabs | 15 | 0 | N/A | 15 records of EUNIS A5.3 Subtidal mud are distributed evenly across the extent of EUNIS A5.3Subtidal mud as recommended by regional MCZ project. 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| A5.3 Subtidal mud | FS 04_A5.3 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) (with Gardline Tridens (9060)) PSA samples points | PSA points | Yes | Grabs | 34 | 0 | 2012 | MB0120 MCZ verification survey | Yes | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## North-West of Jones Bank rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | FS 04_A5.3 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) (with Gardline Tridens (9060)) Video and still samples points | Video & Still images | Yes | Video/still | 111 | 0 | 2012 | MB0120 MCZ verification survey | Yes | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## North-West of Jones Bank rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | FS 04_A5.3 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) - habitat map | Habitat map (modelled) | Yes | N/A | N/A | N/A | 2012 | MB0120 MCZ verification survey | N/A | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## North-West of Jones Bank rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | FS 04_A5.4 | BSH | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) (with Gardline Tridens (9060)) PSA samples points | PSA points | Yes | Grabs | 3 | 0 | 2012 | MB0120 MCZ verification survey | Yes | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## North-West of Jones Bank rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | FS 04_A5.4 | BSH | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) (with Gardline Tridens (9060)) Video and still samples points | Video & Still images | Yes | Video/still | 7 | 0 | 2012 | MB0120 MCZ verification survey | Yes | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## North-West of Jones Bank rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | FS 04_A5.3 | BSH | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) - habitat map | Habitat map (modelled) | Yes | N/A | N/A | N/A | 2012 | MB0120 MCZ verification survey | N/A | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## North-West of Jones Bank rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | FS 04_HOCI_13 | Habitat FOCI | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) (with Gardline Tridens (9060)) Video and still samples points | Video & Still images | Yes | Video/still | 112 | 52 | 2012 | MB0120 MCZ verification survey | N/A | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## North-West of Jones Bank rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sea-pen and burrowing megafauna communities | FS 04_HOCI_18 | Habitat FOCI | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND1012) (with Gardline Tridens (9060)) Video and still samples points | Video & Still images | Yes | Video/still | 112 | 52 | 2012 | MB0120 MCZ verification survey | N/A | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Table 132: North-West of Jones Bank rMCZ confidence assessment

| North-West of Jones Bank rMCZ – Confidence Assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A5.1 Subtidal coarse sediment | FS 04_A5.1 | 3 | N/A | N/A | N/A | No | N/A | High | A habitat map from survey with three supporting ground-truthing samples demonstrate the presence of Subtidal coarse sediment in the site. | High | A habitat map from survey with ground-truthing sample data demonstrate the extent of Subtidal coarse sediment in the site. | |
| A5.2 Subtidal sand | FS 04_A5.2 | 5 | N/A | N/A | N/A | No | N/A | High | A habitat map from survey with five ground-truthing samples demonstrate the presence of Subtidal sand in the site. | High | A habitat map from survey with ground-truth sample data demonstrate the extent of Subtidal sand in the site. | |
| A5.3 Subtidal mud | FS 04_A5.3 | 160 | N/A | N/A | N/A | No | N/A | High | A habitat map from survey with 49 ground samples demonstrate the presence of Subtidal mud in the site.. | High | A habitat map from survey with ground-truthing sample data demonstrate the extent of Subtidal mud in the site. | |
| A5.4 Subtidal mixed sediments | FS 04_A5.4 | 10 | N/A | N/A | N/A | No | N/A | High | A habitat map from survey with three supporting ground-truthing samples demonstrate the presence of Mud habitats in deep water in the site. | High | A habitat map from survey with ground-truthing sample data demonstrate the extent of Mud habitats in deep water in the site. | |

| North-West of Jones Bank rMCZ – Confidence Assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| Mud habitats in deep water | FS 04_HOCI_13 | 112 | N/A | N/A | N/A | No | N/A | High | There are 112 ground-truthing samples which intersect with the extent of Subtidal mud and demonstrate the presence of Mud habitats in deep water. | High | A large number of sample stations which identify Sea-pen and burrowing megafauna communities, the high confidence in the presence and extent of Subtidal mud and there being a low energy environments, are all indicators for this habitat and demonstrate the extent of this feature in the site. | |
| Sea-pen and burrowing megafauna communities | FS 04_HOCI_18 | 112 | N/A | N/A | N/A | No | N/A | High | There are112 ground-truthing samples which intersect with the extent of Subtidal mud extent and demonstrate the presence of Sea-pen and burrowing megafauna communities. | High | A large number of sample stations which identify Sea-pen and burrowing megafauna communities, the high confidence in presence and extent of. Subtidal mud are indicators for the habitat and demonstrate the extent of this feature in the site. | |

## Table 133: Offshore Brighton rMCZ data table

| Offshore Brighton rMCZ - Data | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A4 Circalittoral rock | BS 14_A4 | BSH | | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0312b) | video | Yes | Underwater Video and Photography | 0 | 6 | N/A | 3 opportunistic ground-truthing video tows collected during CEND0312b<br>The videos have been studied by JNCC, and have identified 6 sections of video where Circalittoral rock is believed to be present. These samples could be subject to further analysis and QA. | No | Yes | No | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Offshore Brighton rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A4.1 High energy circalittoral rock | BS 14_A4.1 | BSH | | Marine Recorder | Habitat points | | Underwater Video and Photography | 1 | N/A | N/A | 1 point from survey MRMIT6000000001C 2006_07C - RV Cefas Endeavour - Central English Channel. Note that the description for the habitat is '..sublittoral mixed sediment' and 'Cobbles with pebbles and gravel' | No | Yes | Yes | The Marine Recorder snapshot will be available at http://jncc.defra.gov.uk/download/marinerecorderdata |
| A4.1 High energy circalittoral rock | BS 14_A4.1 | BSH | | MB0102 Task 2E | Combined Kinetic Energy map | | N/A | N/A | N/A | N/A | High energy is identified within the recommended extent of EUNIS A4.1 High energy circalittoral rock broad-scale habitat | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |

## Offshore Brighton rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A4.1 High energy circalittoral rock | BS 14_A4.1 | BSH | | BGS hard substrate layer | Hard substrate map | | 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 "DataSource: BGS, Admiralty Charts, Multibeam, Seismic, samples, Seazone,". The Polygons BGS ID are: BGS_3343 within the extent as recommended by the regional projects of roughly 7km square in the west of the recommended feature was not recorded as hard substrate by BGS. | No | Yes | Yes | enquiries@bgs.ac.uk |
| A4.1 High energy circalittoral rock | BS 14_A4.1 | BSH | | MESH habitat map from survey (GB000954) | Habitat map | | N/A | N/A | N/A | N/A | The data maps a small section of A5.1 over the extent of A4.1<br><br>Habitat maps from survey with over 58% MESH confidence score, Unique IDs and associated MESH confidence scores:<br>GB000954: Wight broad-scale (MESH confidence score:75%) mapped A5.1 within the extent as recommended by the regional projects of roughly 13km square in the west of the recommended feature and 2 km square in the north of the recommended feature | No | Yes | Yes | http://www.searchmesh.net/default.aspx?page=1974 |

## Offshore Brighton rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A4.1 High energy circalittoral rock | BS 14_A4.1 | BSH | | MALSF REC South Coast Synthesis | Habitat Map (modelled) | | N/A | N/A | N/A | N/A | The South Coast Synthesis Study combines the Eastern English Channel REC habitat map with the South Coast REC habitat map and synthesises the gaps to create coverage across the English Channel. The study proposed some alternative habitat types that are not part of the EUNIS habitats classification system and JNCC translated these into the closest official EUNIS habitat types. | Yes | Yes | Yes | http://www.marinealsf.org.uk/data/ |
| A4.1 High energy circalittoral rock | BS 14_A4.1 | BSH | | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0812c) | Stills and video tows | Yes | Stills and video tows | 15 Stills, 2 discrete areas within a single video | 0 | 2012 | Camera stills and video tows collected during MCZ site verification cruise CEND0812c | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Offshore Brighton rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A4.2 Moderate energy circalittoral rock | BS 14_A4.2 | BSH | | MB0102 Task 2E | Combined Kinetic Energy map | | N/A | N/A | N/A | N/A | Moderate energy is identified within the site. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |
| A4.2 Moderate energy circalittoral rock | BS 14_A4.2 | BSH | | BGS hard substrate | Hard substrate map | | 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 "DataSource: BGS, Admiralty Charts, Multibeam, Seismic, samples, Seazone,". The Polygons BGS ID are: BGS_3343. | No | Yes | Yes | enquiries@bgs.ac.uk |
| A4.2 Moderate energy circalittoral rock | BS 14_A4.2 | BSH | | MALSF REC South Coast Synthesis | Habitat Map (modelled) | | N/A | N/A | N/A | N/A | The South Coast Synthesis Study combines the Eastern English Channel REC habitat map with the South Coast REC habitat map and synthesises the gaps to create coverage across the English Channel. The study proposed some alternative habitat types that are not part of the EUNIS habitats classification system and JNCC translated these into the closest official EUNIS habitat types. | Yes | Yes | Yes | http://www.marinealsf.org.uk/data/ |
| A5.1 Subtidal coarse sediment | BS14_A5.1 | BSH | Yes | Marine Recorder | Habitat points | Yes | Underwater Video | 83 | 144 | N/A | There were a 144 habitat data points from Marine Recorder snapshot within the boundary of the site that support the presence of the parent feature and 83 of those support the feature A5.1. | No | Yes | Yes | The Marine Recorder snapshot will be available at http://jncc.defra.gov.uk/download/marinerecorderdata |

## Offshore Brighton rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | BS14_A5.1 | BSH | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0812c) | PSA points, Stills and video tows | Yes | Grabs, Stills and video tows | 19 grabs, 98 Stills, 7 camera tows | 36 grabs, 296 stills, 27 camera tows | 2012 | Camera stills, video tows and PSA data collected via Grab samples during MCZ site verification cruise CEND0812c | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.1 Subtidal coarse sediment | BS14_A5.1 | BSH | Yes | BGS seabed sediments data points | PSA points | Yes | Grabs Samples | **15** | 0 | 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | No | No | enquiries@bgs.ac.uk |

## Offshore Brighton rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | BS 14_A5.4 | BSH | | MESH habitat map from survey (GB000471, GB000954) | Habitat map | | N/A | N/A | N/A | N/A | The data identifies the features parent habitat by mapping A5.1<br><br>Habitat maps from survey with over 58% MESH confidence score, Unique IDs and associated MESH confidence scores:<br>GB000471: Eastern Channel Broad-scale Habitat Mapping Project: Aggregate Levy Sustainability Fund (ALSF) (MESH confidence score:71%) mapped A5.1 within the extent as recommended by the regional projects. GB000954: Wight broad-scale (MESH confidence score: 75%) also mapped A5.1. | No | Yes | Yes | http://www.searchmesh.net/default.aspx?page=1974 |
| A5.4 Subtidal mixed sediments | BS 14_A5.4 | BSH | | BGS seabed sediments data points | PSA points | | Grabs Samples (GS) and two | 0 | **14** | N/A | 14 points recorded A5.1 Subtidal coarse sediment recorded A5.4 Subtidal Mixed sediments across the feature as recommended by the regional MCZ project. which verify the parent habitat EUNIS A5 Sublitoral Sediment.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| A5.4 Subtidal mixed sediments | BS 14_A5.4 | BSH | | Marine Recorder | Habitat points | | Underwater Video | 61 | 144 | N/A | There were a 144 habitat data points within the boundary of the site that support the presence of the parent feature and 61 of those support the feature A5.4. | Yes | Yes | Yes | The Marine Recorder snapshot will be available at http://jncc.defra.gov.uk/download/marinerecorderdata |

## Offshore Brighton rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | BS 14_A5.4 | BSH | | MALSF REC South Coast Synthesis | Habitat Map (modelled) | | N/A | N/A | N/A | N/A | The South Coast Synthesis Study combines the Eastern English Channel REC habitat map with the South Coast REC habitat map and synthesises the gaps to create coverage across the English Channel. The study proposed some alternative habitat types that are not part of the EUNIS habitats classification system and JNCC translated these into the closest official EUNIS habitat types. | Yes | Yes | Yes | http://www.marinealsf.org.uk/data/ |
| A5.4 Subtidal mixed sediments | BS 14_A5.4 | BSH | | Cefas | Habitat points | | Ground-truthing | **18** | **23** | N/A | 18 records verify the feature as recommended by the Regional MCZ Project.<br><br>Survey Name and Codes of that used in the data source for analysis of the presence and extent of this feature: CEND 12/06_ME1102_Wight transects_Wightx1CTD1A, CEND 14/06_C2282_EEC MEPF (26-1A, 27-1A, 28-3A, 29-2A, 29-3A), CEND 14/06_C2282_EEC MEPF_FISH (5A,6A,7A,8A), CEND 14/06_ME1102_Wight 06_(W02A-C, W03A-C,W04A-C, W05A-C, W06A-C), END 12/05_C2282_EEC MEPF_ (10-2A, 11-3A, 2-1A, 4-5A, 5-21A, 5-2A, 5-3A, 5-4A, 5-5A, 6-2A, 6-4A,6-5A,7-1A,9-4A) | No | Yes | Yes | Data acquired through the Cefas partnership. Contact JNCC or Cefas direct to learn how to access this information. |

## Offshore Brighton rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | BS14_A5.4 | BSH | | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0812c) | PSA points, Stills and video tows | Yes | Grabs, Stills and video tows | 17 grabs, 198 stills, 20 camera tows | 36 grabs, 296 stills, 27 camera tows | 2012 | Camera stills and PSA data collected via Grab samples during MCZ site verification cruise CEND0812c | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| Ross worm (*Sabellaria spinulosa*) reefs | BS 14_HOCI_16 | Habitat FOCI | | Cefas data mining contract | Habitat points | | Mini Hamon grab | 0 | N/A | 1999 | The Environment Agency (EA) database is listed as a data source in the Regional project report (the final recommendations) and by the Regional MCZ Project handover data shapefile name. The attributes within the shapefile identified the data as Cefas data. However, the Cefas data mining habitat points received from Cefas by JNCC does not identify the same six points (which are coincident temporally & spatially) located in Regional MCZ Project report and the Regional Project handover data as being *Sabellaria spinulosa* reef. The records cannot be used to invalidate the presence of the feature due to lack of metadata and QA of the data source "Balanced Seas Final Report site assessment document". | No | Yes | Yes | Data acquired through the Cefas partnership. Contact JNCC or Cefas direct to find out how to access this information. |

## Offshore Brighton rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ross worm (*Sabellaria spinulosa*) reefs | BS 14_HOCI_16 | Habitat FOCI | | Balanced Seas Final Report site assessment document | Habitat points | | Unknown | **6** | N/A | 2006 | The Environment Agency (EA) database is listed as a data source in the Regional project report (the final recommendations) and by the Regional MCZ Project handover data shapefile name. The attributes within the shapefile identified the data as Cefas data. However, the Cefas data mining habitat points received from Cefas by JNCC does not identify the same six points (which are coincident temporally & spatially) located in Regional MCZ Project report and the Regional Project handover data as being *Sabellaria spinulosa* reef. The lack of information on QA and metadata available on this data means it could not verify the presence of the feature. | No | Yes | Yes | http://jncc.defra.gov.uk/PDF/120718_MCZAP_Balanced_Seas_Final_Recommendations_Report.pdf |
| Undulate ray (*Raja undulata*) | BS14_SOCI_ | SOCI | Yes | MB0116: Ifemer | Points | Yes | Trawl | **20** | N/A | 1988 - 2008 | From MB0116: Spatio-temporal patterns in demersal elasmobranchs from trawl surveys in the eastern English Channel (1988 - 2008) | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18125 |

## Table 134: Offshore Brighton rMCZ confidence assessment

| Offshore Brighton rMCZ – Confidence Assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A4.1 High energy circalittoral rock | BS 14_A4.1 | 3 | N/A | N/A | N/A | Yes | MCZ evidence QA group | **Moderate** | There are three ground-truthing points and six records for the parent feature Circalittoral rock that potentially demonstrate the presence of High energy circalittoral rock in the site. | **Low** | Ground-truthing points are clustered in the north west of the site. None of these points coincides with the predicted extent of the feature in the modelled map. As these data are yet to go through a formal QA process, expert judgement has been applied to assign Low confidence in feature extent. | |
| A4.2 Moderate energy circalittoral rock | BS 14_A4.2 | 0 | N/A | N/A | N/A | Yes | MCZ evidence QA group | **Moderate** | There are six records of the parent feature Circalittoral rock potentially demonstrating the presence of Moderate energy circalittoral rock in the site. | **Low** | Expert judgement has been applied to assign Low confidence, due to very limited number of video tows identifying the presence of the feature compared to the size of the site. There is also no confirmed presence of the within the predicted map extent of the feature. | |

## Offshore Brighton rMCZ – Confidence Assessment

| ENG feature | Site/Feature Code (Unique ID) | Total number of points which verify the ENG feature. | Total number of ENG species data points older than 12 yrs. | Total number of ENG species data points between 6 and 12 yrs. | Total number of ENG species data points 6 yrs old or less. | Expert judgment used. | QA of expert judgement | Confidence in ENG feature presence | Justification for confidence in ENG feature presence | Confidence in ENG feature extent | Justification for confidence in ENG feature extent | General comments on decision made |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | BS14_A5.1 | >200 | N/A | N/A | N/A | No | N/A | **High** | There are 35 interpreted ground-truthing points demonstrating the presence of Subtidal coarse sediment in the site. | **Moderate** | The distribution of point data demonstrates the extent of Subtidal coarse sediment in the site. | |
| A5.4 Subtidal mixed sediments | BS 14_A5.4 | >250 | N/A | N/A | N/A | No | N/A | **High** | There are 34 interpreted ground-truthing data demonstrating the presence of Subtidal mixed sediments in the site. | **Moderate** | The distribution of point data demonstrates the extent of Subtidal mixed sediments in the site. | |
| Ross worm (*Sabellaria spinulosa*) reefs | BS 14_HOCI_16 | 6 | N/A | N/A | N/A | Yes | MCZ evidence QA group | **Low** | Recent survey identified populations of the species *Sabellaria spinulosa* within the site, but there is insufficient evidence to confirm the presence of a reef. Given the uncertainties in the feature classification in the underlying data, expert judgement has been applied to assign Low confidence to the presence of reef. | **Low** | There is a lack of information confirming the presence of any reef feature within the site, Low confidence is assigned for Feature extent. | |

## Offshore Brighton rMCZ – Confidence Assessment

| ENG feature | Site/Feature Code (Unique ID) | Total number of points which verify the ENG feature. | Total number of ENG species data points older than 12 yrs. | Total number of ENG species data points between 6 and 12 yrs. | Total number of ENG species data points 6 yrs old or less. | Expert judgment used. | QA of expert judgement | Confidence in ENG feature presence | Justification for confidence in ENG feature presence | Confidence in ENG feature extent | Justification for confidence in ENG feature extent | General comments on decision made |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Undulate ray (*Raja undulata*) | BS14_SOCI_ | 20 | 10 | 7 | 3 | No | N/A | **Moderate** | There are 20 samples identified over a 30 year period, with three samples within the past six years demonstrating presence of Undulate ray in the site. | **Moderate** | There are 20 samples identified over a 30 year period, with three samples within the past six years which demonstrate the distribution of Undulate ray in the site. | |

## Table 135: Offshore Overfalls rMCZ data table

| Offshore Overfalls rMCZ - Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A5.1 Subtidal coarse sediment | BS 17_A5.1 | BSH | | MALSF REC South Coast Synthesis | Habitat Map (modelled) | | N/A | N/A | N/A | N/A | The South Coast Synthesis Study combines the Eastern English Channel REC habitat map with the South Coast REC habitat map and synthesises the gaps to create coverage across the English Channel. The study proposed some alternative habitat types that are not part of the EUNIS habitats classification system and JNCC translated these into the closest official EUNIS habitat types. Please see section 5.1 and contact JNCC for more information on the conversion. | Yes ( A conversion was undertaken see comments) | Yes | Yes | http://www.marinealsf.org.uk/data/ |
| A5.1 Subtidal coarse sediment | BS 17_A5.1 | BSH | | BGS seabed sediments data points | PSA points | | Grabs Samples (GS) | **10** | **0** | N/A | The 10 records identify the ENG feature habitat EUNIS Sublitoral Mixed sediment. Data collected in 1983.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| A5.1 Subtidal coarse sediment | BS 17_A5.1 | BSH | | South Coast Rec data | Grabs / video | | Grabs + video | **7** | **0** | N/A | Data collected as part of South Coast Regional environmental characterisation in 2007 | | Yes | Yes | http://www.marinealsf.org.uk/data/ |

## Offshore Overfalls rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | BS 17_A5.1 | BSH | | CEFAS habitat points | stills / video | | stills / video | 7 | 0 | N/A | CEFAS data points collected between 1998 - 2006 | | | | Data acquired through the Cefas partnership. Contact JNCC or Cefas direct to learn how to access this information. |

## Offshore Overfalls rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | BS 17_A5.1 | BSH | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND_04_12) | Acoustic, grabs, video and still data. | Yes | Grabs, video and still data. | 44 Grabs, 238 stills, 18 video tows | N/A | N/A | Ground-truthing samples collected during dedicated MCZ site verification survey | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.2 Subtidal sand | BS 17_A5.2 | BSH | | MALSF REC South Coast data points | Biotope points | | Ground-truthing | **2** | 0 | N/A | The records are from the South REC survey which contributed to the South REC Synthesis habitat map.<br><br>The study proposed some alternative habitat types that are not part of the EUNIS habitats classification system and JNCC translated these into the closest official EUNIS habitat types. Contact JNCC for more information on the conversion. Please see section 5.1 and contact JNCC for more information on the conversion. | Yes ( A conversion was undertaken see comments) | Yes | Yes | http://www.marinealsf.org.uk/data/ |

## Offshore Overfalls rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | BS 17_A5.2 | BSH | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND_04_12) | Acoustic, grabs, video and still data. | Yes | Grabs, video and still data. | 1 Grabs, 6 stills, 2 video tows | N/A | N/A | Ground-truthing samples collected during dedicated MCZ site verification survey | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.2 Subtidal sand | BS 17_A5.2 | BSH | | MESH habitat map from survey (GB000471, GB000954) | Habitat Map | | N/A | N/A | N/A | N/A | The data identifies the habitats EUNIS A5.1 and A5.2<br>Habitat maps from survey with over 58% MESH confidence score, Unique IDs and associated MESH confidence scores:<br>GB000954: Wight Broad-scale, Annex 1 Reef survey 2006/7 (MESH confidence score:75%).mapped a small area of EUNIS A5.1 within the extent as recommended by the regional projects. GB000471: Eastern Channel Broad-scale Habitat Mapping Project: Aggregate Levy Sustainability Fund (ALSF) (MESH confidence score:71%) mapped both EUNIS A5.1 and A5.2 within the extent as recommended by the Regional MCZ Projects. | No | Yes | Yes | http://www.searchmesh.net/default.aspx?page=1974 |

## Offshore Overfalls rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | BS 17_A5.2 | BSH | | MALSF REC South Coast Synthesis | Habitat Map (modelled) | | N/A | N/A | N/A | N/A | The South Coast Synthesis Study combines the Eastern English Channel REC habitat map with the South Coast REC habitat map and synthesises the gaps to create coverage across the English Channel. The study proposed some alternative habitat types that are not part of the EUNIS habitats classification system and JNCC translated these into the closest official EUNIS habitat types.<br><br>No validation samples were available for the recommended extent of EUNIS A5.4 Subtidal mixed sediments within this site. | Yes | Yes | Yes | http://www.marinealsf.org.uk/data/ |
| A5.4 Subtidal mixed sediments | BS 17_A5.4 | BSH | | MALSF REC South Coast data points | Biotope points | | Ground-truthing | 3 | N/A | | The applied records are well distributed across the recommended feature extent and are from the South REC survey which contributed to the South REC Synthesis habitat map. The study proposed some alternative habitat types that are not part of the EUNIS habitat classification system and JNCC translated these into the closest official EUNIS habitat types. Please see Section 6.1 and contact JNCC for more information on the conversion. | Yes (see comment on data source) | Yes | Yes | http://www.marinealsf.org.uk/data/ |

## Offshore Overfalls rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | BS 17_A5.4 | BSH | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND_04_12) | Acoustic, grabs, video and still data. | Yes | Grabs, video and still data. | 14 Grabs, 13 stills, 2 video tows | N/A | N/A | Ground-truthing samples collected during dedicated MCZ site verification survey | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Offshore Overfalls rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | BS 17_A5.4 | BSH | | MESH habitat map from survey (GB000471, GB000954, GB000457) | Habitat map | | N/A | N/A | N/A | N/A | The data identifies the features parent habitat by mapping EUNIS A5.1 and A5.2:<br><br>Habitat maps from survey with over 58% MESH confidence score, Unique IDs and associated MESH confidence scores:<br>GB000471: Eastern Channel Broad-scale Habitat Mapping Project: Aggregate Levy Sustainability Fund (ALSF) (MESH confidence score:71%) mapped both EUNIS A5.1 and A5.2 within the extent as recommended by the regional projects. GB000954: Wight Broad-scale, Annex 1 Reef survey 2006/7 (MESH confidence score:75%) mapped EUNIS A5.1. GB000457: Facies map Isle of Wight Nab Tower (MESH confidence score:67%) mapped both EUNIS A5.1 and A5.2 within the extent as recommended by the Regional MCZ Project and some small sections of EUNIS A4.2. | No | Yes | Yes | http://www.searchmesh.net/default.aspx?page=1974 |
| A5.4 Subtidal mixed sediments | BS 17_A5.4 | BSH | | MALSF REC South Coast Synthesis | Habitat Map (modelled) | | N/A | N/A | N/A | N/A | The South Coast Synthesis Study combines the Eastern English Channel REC habitat map with the South Coast REC habitat map and synthesises the gaps to create coverage across the English Channel. The study proposed some alternative habitat types that are not part of the EUNIS habitats classification system and JNCC translated these into the closest official EUNIS habitat types.<br><br>No validation samples were available for the recommended extent of EUNIS A5.4 Subtidal mixed sediments within this site. | Yes | Yes | Yes | http://www.marinealsf.org.uk/data/ |

## Offshore Overfalls rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | BS 17_A5.4 | BSH | | Cefas | Habitat points | | Ground-truthing | **3** | N/A | N/A | 3 records of the feature EUNIS A5.4 Subtidal mixed sediments and 58 records EUNIS A5.1 Subtidal coarse sediment which verify the parent habitat EUNIS A5 Sublitoral sediment are found across the extent as recommended by the Regional MCZ project. There are a further two points recording *Sabellaria spinulosa* reef. The points are arranged into three main clusters (Northwest, Southwest and Southeast corners) with a further 4 points distributed in the Southeast of the site (of which two are EUNIS A5.4).<br><br>Survey identification: IOW at sites G55A, G55B, G55C, G55D, G37A, G37B, G37C, G37D, G53A, G53B, G53C, G53D over years 1988,1999,2000, 2001, 2003. END 12/05_C2282_EEC MEPF_9.3A and CEND 14/06_C2282_EEC MEPF_25-1A, CIR3B99IOW, also contributed to the data points | No | Yes | Yes | Data acquired through the Cefas partnership. Contact JNCC or Cefas direct to learn how to access this information. |
| English Channel outburst flood features | BS 17_G1 | Geology | | MB0102 Task 2A Erosional Fluvio Glacial Features | Habitat map | | N/A | N/A | N/A | N/A | This polygon was created from the MB0102 Task 2A data layer Gupta et al (2007)<br>This is an extremely large extensive feature which would require most of the English Channel part of the southern North Sea to be rMCZ. The areas which are covered by rMCZs (Offshore Overfalls BS_17 & East Meridian BS_29) may be adequate to be representative of the feature. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |

## Offshore Overfalls rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ross worm (*Sabellaria spinulosa)* reefs | BS 17_HOCI_16 | Habitat FOCI | | Cefas | Habitat points | | Mini Hamon grab | N/A | N/A | 1999 | The Cefas habitat data points recording *Sabellaria spinulosa* reefs on mixed (sediment) substrata are recorded within the site but not on the recommended feature as presented in the final recommendations. | No | Yes | Yes | Data acquired through the Cefas partnership. Contact JNCC or Cefas direct to find out how to access this information. |

## Offshore Overfalls rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ross worm (*Sabellaria spinulosa)* reefs | BS 17_HOCI_16 | Habitat FOCI | | South Coast REC data - included within Balanced Seas Final Report site assessment document | Habitat points | | Unknown | 3 | N/A | 2006 | The Environment Agency (EA) database is listed as a data source in the Regional Project report (the final recommendations) and by the Regional MCZ Project handover data shapefile name. The attributes within the shapefile identified the data as South Coast REC survey data. However, the South Coast REC survey data habitat points downloaded by JNCC do not identify the same 3 points (which appear to be duplicates sourced from the same survey) located in Regional MCZ Project report and the Regional Project handover data as being *Sabellaria spinulosa* reef. Only one point (the most south-westerly point) is identified in the REC data (as per the downloaded data), specifically as (A5.44(8), SS.SMx.CMx.(AsSabCr) Subtidal mixed sediment with Sabellaria clumps) this does not verify the presence of reef habitat. This datum has already considered in the evidence assessment as part of the South Coast REC data source. The other 3 points records them as: 1 record of *Ophiothrix fragilis* bed overlying circalittoral cobbles and pebbles encrusted with Pomatoceros, barnacles and bryozoan crusts, (SS.SCS.CCS.PomB.Oph, A5.131 (1)) & 2 records of *Pomatoceros triqueter* with barnacles and bryozoan crusts on unstable circalittoral cobbles and pebbles (SS.SCS.CCS.PomB, A5.131).<br>The lack of information on QA and metadata available on this data means it could not verify the presence of the feature.<br>Noted in the Regional Project report: Ross worm (*Sabellaria spinulosa*) were relatively numerous at North Nab and were the most numerous polychaetes at South East (Hanson Aggregates, 2002.) | No | Yes | Yes | http://jncc.defra.gov.uk/PDF/120718_MCZAP_Balanced_Seas_Final_Recommendations_Report.pdf |

## Offshore Overfalls rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ross worm (*Sabellaria spinulosa)* reefs | BS 17_HOCI_16 | Habitat FOCI | | MALSF REC South Coast data points | Biotope points | | Ground-truthing | 0 | N/A | 2007 | The Environment Agency (EA) database is listed as a data source in the Regional Project report (the final recommendations) and by the Regional MCZ Project handover data shapefile name. The attributes within the shapefile identified the data as South Coast REC survey data. However, the South Coast REC survey data habitat points downloaded by JNCC do not identify the same 3 points (which appear to be duplicates sourced from the same survey) located in Regional MCZ Project report and the Regional Project handover data as being *Sabellaria spinulosa* reef. Only one point (the most south-westerly point) is identified in the REC data (as per the downloaded data), specifically as (A5.44(8), SS.SMx.CMx.(AsSabCr) Subtidal mixed sediment with Sabellaria clumps) this does not verify the presence of reef habitat. (Please note, subsequently a further data point recorded the same biotope but is not the final recommendations). The other 3 points are recorded as: 1 record of *Ophiothrix fragilis* bed overlying circalittoral cobbles and pebbles encrusted with Pomatoceros, barnacles and bryozoan crusts, (SS.SCS.CCS.PomB.Oph, A5.131 (1)) & 2 records of Pomatoceros triqueter with barnacles and bryozoan crusts on unstable circalittoral cobbles and pebbles (SS.SCS.CCS.PomB, A5.131). The records cannot be used to invalidate the presence of the feature due to lack of metadata and QA of the data source "Balanced Seas Final Report Selection Assessment Document". | No | Yes | Yes | http://www.marinealsf.org.uk/data/ |

## Offshore Overfalls rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ross worm (*Sabellaria spinulosa)* reefs | BS 17_HOCI_16 | Habitat FOCI | | MB0116: sourced from Marine Planning Consultants | Point | | Grab | 3 | | 2002 | Data identified in MB0116. Three points, closely located together in the North West of the site, sourced from Marine Planning Consultants and collected in 2002 | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18125 |
| Native oyster (*Ostrea edulis*) | BS 17_SOCI_22 | Species FOCI | Yes | MB0102 Bio-physical contract. Task 2B_species distribution | Species points | Yes | | 5 | N/A | 1998-2000 | MB0102 identified 5 records within the site boundary between 1998 - 2000 | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |
| European eel (*Anguilla Anguilla*) | BS 17_SOCI_31 | Species FOCI | Yes | MB0116: sourced from Fishbase Version 2000 - Leibniz Institute of Marine Sciences and University of British Columbia | Species points | Yes | Unknown | 1 (note that there are | N/A | 1996-2000 | Data identified in MB0116.One location identified, containing a total of 49 records. Information sourced from Fishbase Version 2000 - Leibniz Institute of Marine Sciences and University of British Columbia | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18125 |

## Offshore Overfalls rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Undulate ray (*Raja undulate)* | BS 17_SOCI_33 | Species FOCI | | Balanced Seas Final Report site assessment document - stakeholder information (local knowledge) | Local knowledge | | Stakeholder groups | N/A | N/A | N/A | The rationale for putting this feature forward for designation is presented in the Balanced Seas Final Recommendations: "*Local stakeholders have confirmed the presence of undulate rays (Raja undulata) at the Overfalls site (Solent Local Group, Nov 2010). Tingley et al. (2006) suggest that Undulate rays are likely to be present as they say that elasmobranchs, including the blonde ray (Raja brachyura), and Tope (Galeorhinus galeus), are primary targets for the area's recreational anglers. These anglers consider that skates and rays undertake localised migrations, moving from deeper water offshore into shallower inshore waters in preparation for spawning which can last throughout spring and summer." p5 rMCZ 17 Offshore Overfalls Marine Conservation Zone: Selection Assessment Document (v1.0) 2011.* | No | Yes | Yes | http://jncc.defra.gov.uk/PDF/120718_MCZAP_Balanced_Seas_Final_Recommendations_Report.pdf |
| Undulate ray (*Raja undulata)* | BS 17_SOCI_33 | Species FOCI | | MB0116 / CEFAS data mining: CEFAS undulate ray survey | Point | Yes | Trawl | 3 | N/A | 1996 - 1999 | CEFAS undulate ray survey 1996 - 1999, collected via 4m Beam Trawl | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18125 |
| Undulate ray (*Raja undulata)* | BS 17_SOCI_33 | Species FOCI | | MB0116: International Council For The Exploration Of The Sea | Point | Yes | Trawl | 3 | N/A | 1996 - 1999 | MB0116: Identifies 3 sites contains 12 records of Undulate Ray. These were sourced from ICES Database of trawl surveys and collected between 1996 - 1999 | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18125 |

## Offshore Overfalls rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Undulate ray (*Raja undulata)* | BS 17_SOCI_33 | Species FOCI | | MB0116: 1998 North Sea, English Channel, Bristol Channel And Irish Sea Cefas 4m Beam Trawl Survey | Point | Yes | Trawl | 1 | N/A | 1998 | MB0116 - Marine Recorder Snapshot species - 1998 North Sea, English Channel, Bristol Channel And Irish Sea Cefas 4m Beam Trawl Survey Single record found | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18125 |
| Undulate ray (*Raja undulata)* | BS 17_SOCI_33 | Species FOCI | | MB0116: Ifremer: Spatio-temporal patterns in demersal elasmobranchs from trawl surveys in the eastern English Channel (1988 - 2008) | Point | Yes | Trawl | 47 | N/A | 1988 - 2008 | Data identified in MB0116, sourced through Ifremer. 47 point samples identified within the site boundary between 1988 - 2008<br><br>Martin, C.S; Vaz, S; Ellis, J.R; Coppin, F; Le Roy, D and Carpentier, A (2010) Spatio-temporal patterns in demersal elasmobranchs from trawl surveys in the eastern English Channel (1988 - 2008). Marine Ecology Progress Series. 417:211-228. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18125 |

## Table 136: Offshore Overfalls rMCZ confidence assessment

| Offshore Overfalls rMCZ – Confidence Assessment | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A5.1 Subtidal coarse sediment | BS 17_A5.1 | 61 | N/A | N/A | N/A | No | N/A | **High** | There are 61 ground-truthing points which demonstrate the presence of Subtidal coarse sediment in the site. | **High** | The extensive spatial spread of sampling throughout the site demonstrates the extent of Subtidal coarse sediment in the site. | |
| A5.2 Subtidal sand | BS 17_A5.2 | 3 | N/A | N/A | N/A | No | N/A | **Moderate** | Three ground-truthing points demonstrate the presence of Subtidal sand in the site. | **Low** | Low confidence in the extent of this feature has been assigned due to sample locations being intermingled with other habitat types in close proximity. | |
| A5.4 Subtidal mixed sediments | BS 17_A5.4 | 20 | N/A | N/A | N/A | No | N/A | **High** | There are 20 ground-truthing points that demonstrate the presence of Subtidal mixed sediments in the site. | **Moderate** | Multiple samples demonstrate the extent of the Subtidal mixed sediments but the density of sampling is insufficient for high confidence to be assigned. | |

## Offshore Overfalls rMCZ – Confidence Assessment

| ENG feature | Site/Feature Code (Unique ID) | Total number of points which verify the ENG feature. | Total number of ENG species data points older than 12 yrs. | Total number of ENG species data points between 6 and 12 yrs. | Total number of ENG species data points 6 yrs old or less. | Expert judgment used. | QA of expert judgement | Confidence in ENG feature presence | Justification for confidence in ENG feature presence | Confidence in ENG feature extent | Justification for confidence in ENG feature extent | General comments on decision made |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ross worm (*Sabellaria spinulosa)* reefs | BS | 3 | 0 | 5 | 0 | Yes | MCZ evidence | **Low** | Whilst there are ground-truthing samples showing sparse populations of *Sabellaria spinulosa* being present in the site, there is currently no evidence to support the presence of a reef. | **Low** | There is currently no evidence to support the presence of reefs occurring within the site. | |
| Native oyster (*Ostrea edulis*) | BS | 5 | 5 | 0 | 0 | No | N/A | **Low** | There are five records in excess of 12 years old which demonstrate the presence of Native oyster in the site. | **Low** | There are five records in excess of 12 years old which demonstrates the distribution of Native oyster in the site. | |
| European eel (*Anguilla Anguilla*) | BS | 1 | 1 | 0 | 0 | No | N/A | **Low** | Only one point record which is in excess of 12 years old demonstrates the presence of European eel in the site. | **Low** | Only one point record which is in excess of 12 years old demonstrates the distribution of European ell in the site. | |
| Undulate ray (*Raja* undulata) | BS | 0 | 35 | 15 | 4 | No | N/A | **Moderate** | There are data from four surveys that have recorded the presence of Undulate ray in this site. However only four data points have been collected within the past six years | **Moderate** | There are data from four surveys that record the presence of Undulate ray in the site, but as only four points were collected within the past six years. We are unable to have any greater high confidence in distribution. | |

| Offshore Overfalls rMCZ – Confidence Assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| English Channel outburst flood features | BS 17_G1 | N/A | N/A | N/A | N/A | No | N/A | **High** | Confidence in feature presence is a direct parallel to confidence in the morphology of the geo-feature. Confidence in the maps of the English Channel Outburst feature in the site is high | **High** | Confidence in feature extent is a direct parallel to confidence in the morphology of the geo-feature. Confidence in the maps of the English Channel Outburst feature in the site is high | |

## Table 137: Slieve Na Griddle rMCZ data table

| Slieve Na Griddle rMCZ - Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A4.3 Low energy circalittoral rock | ISCZ 07_A4.3 | BSH | Removed | JNCC (2011) Offshore Special Area of Conservation: Pisces Reef Complex. SAC Selection Assessment. Version 3.0 (17th January 2011). | Selection Assessment Document for Special Area of Conservation | No | N/A | N/A | N/A | N/A | 'Annex I reefs' were mapped as part of the Pisces Reef Complex SAC habitat mapping. These were verified by validation samples across the Pisces Reef Complex which can be found described in the Selection Assessment Document (SAD). The SAC SAD has also been peer reviewed externally.<br><br>Annex 1 reef may contain EUNIS A4.3 as identified by the ENG [LINK] and is identified in the Site Assessment Document as Low energy circalittoral rock. | Yes | Yes | Yes | http://jncc.defra.gov.uk/pdf/PiscesReef_SAC_SelectionAssessment_V5_0.pdf |
| A4.3 Low energy circalittoral rock | ISCZ 07_A4.3 | BSH | Removed | MB102 Task 2E | Combined Kinetic Energy map | No | N/A | N/A | N/A | N/A | Low energy is identified within the recommended extent of the EUNIS A4.3 Low energy circalittoral rock broad-scale habitat. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |
| A4.3 Low energy circalittoral rock | ISCZ 07_A4.3 | BSH | Removed | BGS hard substrate | Hard substrate map | No | 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 each polygon within site was identified as being BGS, Samples, Seismic, Multibeam, Admiralty Charts: BGS ID (BGS_212), BGS, Multibeam, Admiralty Charts: (BGS_213) & (BGS_214), BGS, Admiralty Charts: (BGS_215) | No | Yes | Yes | enquiries@bgs.ac.uk |

## Slieve Na Griddle rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A4.3 Low energy circalittoral rock | ISCZ 07_A4.3 | BSH | Removed | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |
| A4.3 Low energy circalittoral rock | ISCZ 07_A4.3 | BSH | Removed | SEA 6 survey | Video tow/stills | Yes | Video and camera | **49** | | N/A | Data was collected as part of the Strategic Environmental Assessment in region 6, focussing on the rock feature of the region. Two tows, with 100+ stills confirm the presence of rock. | No | Yes | Yes | https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/197306/SEA6_Geology.pdf |
| A5.3 Subtidal mud | ISCZ 07_A5.3 | BSH | N/A | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5535 |

## Slieve Na Griddle rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | ISCZ 07_A5.3 | BSH | N/A | JNCC (2011) Offshore Special Area of Conservation: Pisces Reef Complex. SAC Selection Assessment. Version 3.0 (17th January 2011). | Selection Assessment Document for Special Area of Conservation | No | N/A | N/A | N/A | N/A | "Mud plains" were mapped as part of the Pisces Reef Complex SAC habitat mapping. These were verified by validation samples across the Pisces Reef Complex which can be found described in the Selection Assessment Document (SAD). The SAC SAD has also been peer reviewed externally. | Yes | Yes | Yes | http://jncc.defra.gov.uk/pdf/PiscesReef_SAC_SelectionAssessment_V5_0.pdf |
| A5.3 Subtidal mud | ISCZ 07_A5.3 | BSH | N/A | BGS seabed sediments data points | PSA points | No | Grabs | **1** | **0** | N/A | There is one record of EUNIS A5.3 Subtidal mud within the recommended extent for ENG feature EUNIS A5.3 Subtidal mud.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |

## Slieve Na Griddle rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | ISCZ 07_A5.3 | BSH | N/A | Marine Recorder | Biotope points | No | Ground-truthing | **8** | 0 | N/A | There are eight records of SS.SMu.CFiMu (EUNIS A5.36) Circalittoral fine muds along a survey line from the SEA6 survey which verify the feature EUNIS A5.3 Subtidal mud. Survey identification Key: MRABP00200000003 - these are currently available in the public version of Marine Recorder and are being processed ready for release | No | Yes | Yes | The Marine Recorder snapshot will be available at http://jncc.defra.gov.uk/download/marinerecorderdata |
| A5.3 Subtidal mud | ISCZ 07_A5.3 | BSH | N/A | Irish Marine Institute *PSA* data points | PSA data points | yes | Ground-truthing | **1** | N/A | 2003 | PSA data collected as part of the annual *Nephrops stock assessment burrow count surveys* | Yes | Yes | Yes | http://data.marine.ie/ |

## Slieve Na Griddle rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | ISCZ 07_A5.3 | BSH | N/A | Irish Marine Institute *Nephrops* Stock Assessment burrow counts data points | Nephrops Stock Assessment burrow counts data points | Yes | Video and camera stills analysis | **11** | N/A | 2003 - 2011 | There are 11 records confirming the presence of the feature A5.3 Subtidal mud within the mapped extent of the feature in the rMCZ boundary. | No | Yes | Yes | http://oar.marine.ie/handle/10793/887 |
| Mud habitats in deep water | ISCZ 07_HOCI_13 | Habitat FOCI | N/A | MB0102 Task 2C | Habitat map | No | N/A | N/A | N/A | N/A | GB000681 - MESH Confidence Assessment of 0 describes the habitat as "Depth 0 to >100m (infralittoral and circalittoral, mainly latter). Associated description most similar to CFiMu.BlyrAchi. Some polygons greatly over-extended inshore." The polygon is described as A5.363. (Report reference: Mackie, A.S.Y. (1990) Offshore Benthic Communities of the Irish Sea. In: The Irish Sea: An Environmental Review, Part 1, 169-218.) | Yes | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |

## Slieve Na Griddle rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | ISCZ 07_HOCI_13 | Habitat FOCI | N/A | JNCC (2011) Offshore Special Area of Conservation: Pisces Reef Complex. SAC Selection Assessment. Version 3.0 (17th January 2011). | Selection Assessment Document for Special Area of Conservation | No | N/A | N/A | N/A | N/A | "Mud Plains" were mapped as part of the Pisces Reef Complex SAC habitat mapping. These were verified by validation samples across the Pisces Reef Complex. | Yes | Yes | Yes | http://jncc.defra.gov.uk/pdf/PiscesReef_SAC_SelectionAssessment_V5_0.pdf |
| Mud habitats in deep water | ISCZ 07_HOCI_13 | Habitat FOCI | N/A | Marine Recorder | Biotope points | No | Ground-truthing | **8** | 0 | N/A | There are eight records which verify a biotope code that is directly correlated to the "Mud habitats in deep water". These are SS.SMu.CFiMu (A5.36) Circalittoral fine muds. (Survey identification Key: MRABP00200000003 - these are currently available in the public version of Marine Recorder and are being processed ready for release). Please see the Ecological Network Guidance for more information on the correlation. . (Survey identification Key: MRABP00200000003 - these are currently available in the public version of Marine Recorder and are being processed ready for release) | Yes | Yes | Yes | The Marine Recorder snapshot will be available at http://jncc.defra.gov.uk/download/marinerecorderdata |

## Slieve Na Griddle rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | ISCZ 07_HOCI_13 | Habitat FOCI | N/A | BGS seabed sediments data points | PSA points | No | Grabs | 1 | N/A | N/A | There is one record of EUNIS A5.3 Subtidal mud within the recommended extent for ENG feature however due to the correlation of "Mud habitats in deep water" this cannot be used to verify or disagree with the habitat type. Please see the Ecological Network Guidance for more information on how the FOCI habitat correlate to broad-scale habitats.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| Mud habitats in deep water | ISCZ 07_A5.3 | BSH | N/A | Irish Marine Institute *PSA* data points | PSA data points | yes | Ground-truthing | 1 | N/A | 2003 | PSA data collected as part of the annual *Nephrops stock assessment burrow count surveys* | Yes | Yes | Yes | http://data.marine.ie/ |

## Slieve Na Griddle rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | ISCZ 07_HOCI_13 | Habitat FOCI | N/A | Irish Marine Institute *Nephrops* Stock Assessment burrow counts data points | Nephrops Stock Assessment burrow counts data points | Yes | Video and camera stills analysis | **11** | N/A | 2003 - 2011 | There are 11 records confirming the presence of the feature A5.3 Subtidal mud within the mapped extent of the feature in the rMCZ boundary. | No | Yes | Yes | http://oar.marine.ie/handle/10793/887 |
| Sea-pen and burrowing megafauna communities | ISCZ 07_HOCI_18 | Habitat FOCI | New Feature | Irish Marine Institute *Nephrops* Stock Assessment burrow counts data points | *Nephrops* Stock Assessment burrow counts data points | Yes | Video and camera stills analysis | **11** | N/A | 2003 - 2011 | There are 11 records confirming the presence of the feature A5.3 Subtidal mud within the mapped extent of the feature in the rMCZ boundary. | No | Yes | Yes | http://oar.marine.ie/handle/10793/887 |

## Table 138: Slieve Na Griddle rMCZ confidence assessment

| Slieve Na Griddle rMCZ – Confidence Assessment | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A4.3 Low energy circalittoral rock | ISCZ 07_A4.3 | 0 | N/A | N/A | N/A | N/A | N/A | **N/A** | Not assessed as this feature is protected through the Pisces Reef Complex cSAC/SCI and as a result, should not be a feature within the MCZ. | **N/A** | No assessment required out for this feature as it is protected through the Pisces Reef Complex cSAC/SCI and as a result, it should not be a feature within the MCZ. | |
| A5.3 Subtidal mud | ISCZ 07_A5.3 | 20 | N/A | N/A | N/A | N/A | N/A | **High** | A habitat map from survey covering a portion of the site with 49 ground-truthing points demonstrate the presence of Subtidal mud in the site. In addition, 13 data points confirm the presence of the feature in the areas beyond those covered by the habitat map from survey. | **High** | A habitat map from survey with 49 ground-truthing data points demonstrate the extent of Subtidal mud in the site, in combination with the widespread distribution of point data in the areas beyond those covered by the habitat map from survey. | Widespread data points confirm the presence and extent of the feature in relation to the mapped extent. |
| Mud habitats in deep water | ISCZ 07_HOCI_13 | 12 | N/A | N/A | N/A | N/A | N/A | **High** | A habitat map from survey covering a portion of the site with 49 ground-truthing data points demonstrate the presence of Mud habitats in deep water in the site. In addition, 13 data points confirm the presence of the feature in the areas beyond those covered by the habitat map from survey. | **High** | A habitat map from survey with 49 ground-truthing data points demonstrate the extent of the Mud habitats in deep water) in combination with the widespread distribution of point data in the areas beyond those covered by the habitat map from survey. | Widespread data points confirm the presence and extent of the feature in relation to the mapped extent. |

| Slieve Na Griddle rMCZ – Confidence Assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| Sea-pen and burrowing megafauna communities | ISCZ | 11 | N/A | N/A | N/A | N/A | N/A | **High** | There are11 data points that demonstrate the presence of burrows and mounds associated with *Nephrops*, confirming the presence of the feature in the site. | **High** | The widespread distribution of point data showing the presence of burrows and mounds associated with *Nephrops* in site demonstrates the extent of Sea-pen and burrowing megafauna communities in the site. | Widespread data points confirm the presence and extent of the feature in relation to the mapped extent. |

## Table 139: South of Celtic Deep rMCZ data table

| South of Celtic Deep rMCZ - Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A4.2 Moderate energy circalittoral rock | FS09_A4.2 | BSH | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0312) - Video tows | Images | Yes | Video tows | 7 (no. of video tows) | N/A | N/A | A4.2 in video and images collected at 7 ground-truthing stations by 2012 MCZ verification survey. | | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## South of Celtic Deep rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | FS 09_A5.1 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0312) - PSA samples | PSA points | Yes | Grab samples | 16 | N/A | N/A | Sediment samples collected from South Celtic Deep MCZ by 0.1m sq Hamon grab on CEND 03/12.<br>A subsample of each grab was taken for Particle Size Analysis (PSA). The remainder of the sample was washed on board ship over 5 mm and 1 mm sieves to retain benthic fauna. The sediment samples were processed by Kenneth Pye Associated Ltd for Cefas following the PSA methodology recommended by the National Marine Biological Analytical Quality Control (NMBAQC) Scheme. | | | | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## South of Celtic Deep rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | FS 09_A5.1 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0312) - Video tows | Images | Yes | Video tows | 11 | N/A | N/A | Video and images collected at 11 ground-truthing stations by 2012 MCZ verification survey. | | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## South of Celtic Deep rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | FS 09_A5.1 | BSH | No | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |
| A5.1 Subtidal coarse sediment | FS 09_A5.1 | BSH | No | BGS seabed sediments data points | PSA points | No | Grab Samples | 11 | 2 | N/A | 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |

## South of Celtic Deep rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | FS 09_A5.2 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0312) - PSA samples | PSA points | Yes | Grab samples | 21 | N/A | N/A | Sediment samples collected from South Celtic Deep MCZ by 0.1m sq Hamon grab on CEND 03/12.<br>A subsample of each grab was taken for Particle Size Analysis (PSA). The remainder of the sample was washed on board ship over 5 mm and 1 mm sieves to retain benthic fauna. The sediment samples were processed by Kenneth Pye Associated Ltd for Cefas following the PSA methodology recommended by the National Marine Biological Analytical Quality Control (NMBAQC) Scheme. | | | | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## South of Celtic Deep rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | FS 09_A5.3 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0312) - Video tows | Images | Yes | Video tows | 22 | N/A | N/A | Video and images collected at 22 ground-truthing stations by 2012 MCZ verification survey. | | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.2 Subtidal sand | FS 09_A5.2 | BSH | No | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## South of Celtic Deep rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | FS 09_A5.2 | BSH | No | BGS seabed sediments data points | PSA points | No | Grab Samples | 14 | 2 | N/A | 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| A5.3 Subtidal mud | FS 09_A5.3 | BSH | Yes New Feature. Feature not recommended by Regional Project. | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0312) - PSA samples | PSA points | Yes | Grab samples | 2 | N/A | N/A | Sediment samples collected from South Celtic Deep MCZ by 0.1m sq Hamon grab on CEND 03/12. A subsample of each grab was taken for Particle Size Analysis (PSA). The remainder of the sample was washed on board ship over 5 mm and 1 mm sieves to retain benthic fauna. The sediment samples were processed by Kenneth Pye Associated Ltd for Cefas following the PSA methodology recommended by the National Marine Biological Analytical Quality Control (NMBAQC) Scheme. | | | | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## South of Celtic Deep rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | FS 09_A5.3 | BSH | Yes New Feature. | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |
| A5.4 Subtidal mixed sediments | FS 09_A5.4 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0312) - PSA samples | PSA points | Yes | Grab samples | 16 | N/A | N/A | Sediment samples collected from South Celtic Deep MCZ by 0.1m sq Hamon grab on CEND 03/12.<br>A subsample of each grab was taken for Particle Size Analysis (PSA). The remainder of the sample was washed on board ship over 5 mm and 1 mm sieves to retain benthic fauna. The sediment samples were processed by Kenneth Pye Associated Ltd for Cefas following the PSA methodology recommended by the National Marine Biological Analytical Quality Control (NMBAQC) Scheme. | | | | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## South of Celtic Deep rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | FS 09_A5.5 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0312) - Video tows | Images | Yes | Video tows | 3 | N/A | N/A | Video and images collected at 3 ground-truthing stations by 2012 MCZ verification survey. | | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.4 Subtidal mixed sediments | FS 09_A5.4 | BSH | No | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## South of Celtic Deep rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | FS 09_A5.4 | BSH | No | BGS seabed sediments data points | PSA points | No | Grab Samples | **4** | 0 | N/A | 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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| Ocean quahog (*Arctica islandica*) | FS 09_SOCI_3 | Species FOCI | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0312) - PSA samples | PSA points | Yes | Grab samples | 1 | N/A | N/a | One juvenile ocean quahog found in grab sample within the site during the 2012 MCZ verification survey. | N/A | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Table 140: South of Celtic Deep rMCZ confidence assessment

| South of Celtic Deep rMCZ – Confidence Assessment | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A4.2 Moderate energy circalittoral rock | FS09_A4.2 | 6 | N/A | N/A | N/A | No | N/A | **High** | Ground-truthing sample data from six sample stations demonstrates the presence of Moderate energy circalittoral rock in the site. | **Low** | Ground-truthing sample data from six sample stations in the southern portion of the site indicates the feature's extent in that area. Expert judgement was applied to assign Low confidence because of the patchy distribution of the data, noting that opportunistic backscatter suggests a possibly greater extent of the feature within the site. | |
| A5.1 Subtidal coarse sediment | FS 09_A5.1 | 38 | N/A | N/A | N/A | No | N/A | **High** | Ground-truthing sample data from 27 sample stations demonstrates the presence of Subtidal coarse sediment in the site. | **Moderate** | Ground-truthing sample data from 27 sample stations distributed throughout the site and opportunistic acoustic data suggesting a heterogeneous seabed demonstrate the extent of the Subtidal coarse sediment. | |
| A5.2 Subtidal sand | FS 09_A5.2 | 35 | N/A | N/A | N/A | No | N/A | **High** | Ground-truthing sample data from 35 sample stations demonstrates the presence of Subtidal sand in the site. | **Moderate** | Ground-truthing sample data from 35 sample stations distributed throughout the site demonstrates the extent of Subtidal sand in the site. | |

## South of Celtic Deep rMCZ – Confidence Assessment

| ENG feature | Site/Feature Code (Unique ID) | Total number of points which verify the ENG feature. | Total number of ENG species data points older than 12 yrs. | Total number of ENG species data points between 6 and 12 yrs. | Total number of ENG species data points 6 yrs old or less. | Expert judgment used. | QA of expert judgement | Confidence in ENG feature presence | Justification for confidence in ENG feature presence | Confidence in ENG feature extent | Justification for confidence in ENG feature extent | General comments on decision made |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | FS 09_A5.3 | 2 | N/A | N/A | N/A | Yes | MCZ evidence QA group | **Moderate** | There are two ground-truth data within the site that indicate the presence of Subtidal mud. | **Low** | JNCC have low confidence in our knowledge of the extent of Subtidal mud due to the small number of isolated ground-truthing sample data throughout the site, considering the level of survey effort. Expert judgement has been applied when assessing this feature. | |
| A5.4 Subtidal mixed sediments | FS 09_A5.4 | 20 | N/A | N/A | N/A | No | N/A | **High** | Ground-truth sample data from 20 sample stations demonstrates the presence of Subtidal mixed sediments in the site. | **Moderate** | Ground-truthing sample data from 20 sample stations distributed throughout the site demonstrates the extent of Subtidal mixed sediments. | |
| Ocean quahog (*Arctica islandica*) | FS 09_SOCI_3 | 1 | 0 | 0 | 1 | No | N/A | **Low** | There is only one sample station recording the presence of Ocean quahog in the site. | **Low** | There is only one record of the Ocean quahog in the site. | |

## Table 141: South Rigg rMCZ data table

| South Rigg rMCZ – Data | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A4.2 Moderate energy circalittoral rock | ISCZ 06_A4.2 | BSH | Yes | North West Irish Sea Mounds: Hard and soft substrata habitats (2008) survey report. JNCC report number 410 | Habitat map | Yes | N/A | 26 | N/A | N/A | Habitat map from survey - combination of 18 grabs and 19 video tows were analysed to update existing maps of the area. | No | Yes | Yes | http://jncc.defra.gov.uk/pdf/jncc410v2_web.pdf |
| A4.3 Low energy circalittoral rock | ISCZ 06_A4.3 | BSH | Removed | BGS seabed sediments data points | PSA points | No | Grab Samples (GS) | 0 | N/A | N/A | The BGS data points for EUNIS A5.4 Subtidal mixed sediments should not be used to discredit the recommended extent of EUNIS A4.3 Low energy circalittoral rock because the survey method used is not be appropriate for rock habitat.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | No | No | enquiries@bgs.ac.uk |
| A4.3 Low energy circalittoral rock | ISCZ 06_A4.3 | BSH | Removed | Marine Recorder | Habitat points | No | Marine Recorder | N/A | N/A | N/A | There is one point recording reef, however no further information is supplied and it therefore has not been used on the assessment. There were several other records; however these had associated biotope records so were not included in the analysis. | Yes | Yes | Yes | The Marine Recorder snapshot will be available at http://jncc.defra.gov.uk/download/marinerecorderdata |

## South Rigg rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A4.3 Low energy circalittoral rock | ISCZ 06_A4.3 | BSH | Removed | MESH (GB000310) | Habitat map | No | N/A | N/A | N/A | N/A | MESH habitat map from survey (GB000310) with a MESH confidence score of 65%, which is categorised as EUNIS level 2 only. This habitat map from survey covers < 50% of the recommended feature extent and confirms the parent habitat EUNIS A4 Circalittoral rock and other hard substrata. | No | Yes | Yes | http://www.searchmesh.net/default.aspx?page=1974 |
| A4.3 Low energy circalittoral rock | ISCZ 06_A4.3 | BSH | Removed | Stakeholder information | Modelled | No | Fishermap & VMS | N/A | N/A | N/A | The regional MCZ project "reclassified Subtidal coarse sediments as Subtidal mud taking into account stakeholder knowledge as the area is heavily trawled by *Nephrops* trawling (Evidence from VMS and fishermap)".<br><br>Extent of feature was updated by the regional MCZ project using local knowledge removing sections of EUNIS A5.1 Subtidal coarse sediment, EUNIS A5.4 Subtidal mixed sediments and EUNIS A4.3 Low energy circalittoral rock. | No | Yes | Yes | http://jncc.defra.gov.uk/PDF/120718_MCZAP_Pages_from_ISCZ_final_recommendations_FULL_REPORT_part_1_&_2.pdf |

## South Rigg rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A4.3 Low energy circalittoral rock | ISCZ 06_A4.3 | BSH | Removed | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | The extent of EUNIS A4.3 Low energy circalittoral rock is different to the extent as presented by the regional MCZ project.<br><br>The regional MCZ project "reclassified Subtidal coarse sediments as Subtidal mud taking into account stakeholder knowledge as the area is heavily trawled by *Nephrops* trawling (Evidence from VMS and fishermap.)"<br><br>Extent of feature was updated by the regional MCZ project using local knowledge removing sections of EUNIS A5.1 Subtidal coarse sediment, EUNIS A5.4 Subtidal mixed sediments and EUNIS A4.3 Low energy circalittoral rock. | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |
| A4.3 Low energy circalittoral rock | ISCZ 06_A4.3 | BSH | Removed | Marine Recorder | Biotope points | No | Marine Recorder QA | 0 | N/A | N/A | These records are clustered in a line and very close together rather than wide spread distribution (Survey Identification Key : MRMLN00400000012) | Yes | Yes | Yes | The Marine Recorder snapshot will be available at http://jncc.defra.gov.uk/download/marinerecorderdata |
| A4.3 Low energy circalittoral rock | ISCZ 07_A4.3 | BSH | Removed | North West Irish Sea Mounds: Hard and soft substrata habitats (2008) survey report. JNCC report number 410 | Habitat map | Yes | N/A | 0 | N/A | N/A | Habitat map from survey - combination of 18 grabs and 19 video tows were analysed to update existing maps of the area. | No | Yes | Yes | http://jncc.defra.gov.uk/pdf/jncc410v2_web.pdf |

## South Rigg rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | ISCZ 06_A5.2 | BSH | No | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | Mapped as EUNIS A5.2 Subtidal sand. | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |
| A5.2 Subtidal sand | ISCZ 06_A5.2 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CO082012) | PSA points | Yes | Grab samples | **12** | N/A | N/A | Total of 33 grabs taken in the north east of the site by Cefas/AFBI on behalf of JNCC - MCZ site verification survey - CO082012 | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.2 Subtidal sand | ISCZ 06_A5.2 | BSH | N/A | Irish Marine Institute *PSA* data points | PSA data points | yes | Ground-truthing | **1** | N/A | 2003 | PSA data collected as part of the annual *Nephrops stock assessment burrow count surveys* | Yes | Yes | Yes | http://data.marine.ie/ |

## South Rigg rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | ISCZ 06_A5.3 | BSH | No | BGS seabed sediments data points | PSA points | No | Grab Samples (GS) | **1** | 0 | N/A | There is one record of EUNIS A5.3 Subtidal mud within the recommended extent of the feature as proposed by the regional MCZ project.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| A5.3 Subtidal mud | ISCZ 06_A5.3 | BSH | No | Marine Recorder | Habitat points | No | Marine Recorder QA | N/A | N/A | N/A | One record detailed as "Bedrock with muddy sand veneer and shell debris" however no further information is supplied and it therefore has not been used on the assessment. There were several other records, however these had associated biotope records so were not included in the analysis. | No | Yes | Yes | The Marine Recorder snapshot will be available at http://jncc.defra.gov.uk/download/marinerecorderdata |
| A5.3 Subtidal mud | ISCZ 06_A5.3 | BSH | No | UKSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | The extent of EUNIS A5.3 Subtidal mud is different to the recommended extent of EUNIS A5.3 Subtidal mud as proposed by the regional MCZ project. | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## South Rigg rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | ISCZ 06_A5.3 | BSH | No | Irish Marine Institute *Nephrops* Stock Assessment burrow counts data points (2003-2011) | *Nephrops* Stock Assessment burrow counts data points | No | Video and camera stills analysis | **17** | **0** | N/A | Twenty records are available across the recommended feature extent. One recorded zero burrow counts and cannot be used to verify the feature as no habitat information is supplied. Two further points had less than the required 0.2/$m^2$ and therefore were not used to verify the presence or extent of the feature in accordance with the guidance.<br><br>The occurrence of *Nephrops* burrows on soft substrata can be used to validate the ENG feature as characterising component of the Marine Habitats Classification Scheme biotope , "Burrowing megafauna and [*Maxmuelleria lankesteri*] in circalittoral mud" (SS.SMu.CFiMu.MegMax) (http://jncc.defra.gov.uk/marine/biotopes/biotope.aspx?biotope=JNCCMNCR00001994) which is a sub habitat of EUNIS A5.3 Subtidal mud. See the Ecological Network Guidance for more information.<br><br>Survey ID: CO3109 (2009), CO3110 (2010) , CV0822 (2008), CV0720 (2007) , CO3208 (2008), C03207 (2007), CV0424 (2004), CV0519 (2005), CV0325 (2003) | No | Yes | Yes | http://oar.marine.ie/handle/10793/59/browse?type=title&submit_browse=Title |
| A5.3 Subtidal mud | ISCZ 06_A5.3 | BSH | No | MESH (GB000310) | Habitat map | No | N/A | N/A | N/A | N/A | MESH habitat map from survey (GB000310) with MESH confidence score of 65%, which is categorised as EUNIS Level 2 and on some cases Level 3. This habitat map from survey covers < 50% of the recommended feature extent and is in the area that was update by the local knowledge to be mud. The habitat map confirms the parent habitat EUNIS A5 Sublittoral sediment and some small areas maps EUNIS A5.1 Subtidal coarse sediment. | No | Yes | Yes | http://www.searchmesh.net/default.aspx?page=1974 |

## South Rigg rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.3 Subtidal mud | ISCZ 06_A5.3 | BSH | No | Stakeholder information | Modelled | No | Fishermap & VMS | N/A | N/A | N/A | The regional MCZ project "reclassified Subtidal coarse sediments as Subtidal mud taking into account stakeholder knowledge as the area is heavily trawled by *Nephrops* trawling (Evidence from VMS and fishermap.)"<br><br>Extent of feature was updated by the regional MCZ project using local knowledge removing sections of EUNIS A5.1 Subtidal coarse sediment, EUNIS A5.4 Subtidal mixed sediments and EUNIS A4.3 Low energy circalittoral rock. | No | Yes | Yes | http://jncc.defra.gov.uk/PDF/120718_MCZAP_Pages_from_ISCZ_final_recommendations_FULL_REPORT_part_1_&_2.pdf |
| A5.3 Subtidal mud | ISCZ 06_A5.3 | BSH | No | North West Irish Sea Mounds: Hard and soft substrata habitats (2008) survey report. JNCC report number 410 | Habitat map | Yes | Grabs and tows | N/A | N/A | N/A | Habitat map from survey - combination of 18 grabs and 19 video tows were analysed to update existing maps of the area. | No | Yes | Yes | http://jncc.defra.gov.uk/pdf/jncc410v2_web.pdf |
| A5.3 Subtidal mud | ISCZ 06_A5.3 | BSH | No | Irish Marine Institute *PSA* data points | PSA data points | yes | Ground- | **5** | N/A | 2003/2004 | PSA data collected as part of the annual *Nephrops stock assessment burrow count surveys* | Yes | Yes | Yes | http://data.marine.ie/ |
| A5.4 Subtidal mixed sediments | ISCZ 06_A5.4 | BSH | New Feature | North West Irish Sea Mounds: Hard and soft substrata habitats (2008) survey report. JNCC report number 410 | Habitat map | Yes | Grabs and tows | **11** | N/A | N/A | Habitat map from survey - combination of 18 grabs and 19 video tows were analysed to update existing maps of the area. | No | Yes | Yes | http://jncc.defra.gov.uk/pdf/jncc410v2_web.pdf |

## South Rigg rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | ISCZ 06_A5.4 | BSH | New Feature | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CO082012) | PSA points | Yes | Grabs samples | N/A | N/A | N/A | Habitat map from survey - combination of 18 grabs and 19 video tows were analysed to update existing maps of the area. | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| Mud habitats in deep water | ISCZ 06_HOCI_13 | FOCI habitat | No | MB102 Task 2C | Habitat map | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |

## South Rigg rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | ISCZ 06_HOCI_13 | FOCI habitat | No | Irish Marine Institute (Irish Sea sea-pen records) | Sea-pen records | No | Video and camera stills analysis | 1 | N/A | N/A | One record details the occurrence of Sea-pen species V. Mirabilis within the site. The survey ID is listed as CO3110, Video_Line 24. ) This confirms the presence of the feature Sea-pens and burrowing megafauna communities which Mud habitat in deep water may contain.<br>See the Ecological Network Guidance for more information on the correlation.<br><br>The occurrence of Sea-pens can be used to validate the ENG feature as a characterising component of the Marine Habitats Classification Scheme biotope, "Sea-pen and burrowing megafauna in circalittoral fine mud" (SS.SMu.CFiMu.SpnMeg) (http://jncc.defra.gov.uk/marine/biotopes/biotope.aspx?biotope=JNCCMNCR00001994) which is a component habitat of Sea-pen and burrowing megafauna communities and Mud habitats in deep water. See the Ecological Network Guidance for more information on correlation. | No | Yes | Yes | http://oar.marine.ie/handle/10793/59/browse?type=title&submit_browse=Title |

## South Rigg rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | ISCZ 06_HOCI_13 | FOCI habitat | No | Irish Marine Institute *Nephrops* Stock Assessment burrow counts data points (2003-2011) | Burrow density points | No | Video and camera stills analysis | **20** | N/A | N/A | There are 20 records verifying the ENG feature across the site.<br><br>The occurrence of *Nephrops* burrows on soft substrata can be used to validate the ENG feature as a characterising component of the Marine Habitats Classification Scheme biotope, "Burrowing megafauna and [*Maxmuelleria lankesteri*] in circalittoral mud" (SS.SMu.CFiMu.MegMax) (http://jncc.defra.gov.uk/marine/biotopes/biotope.aspx?biotope=JNCCMNCR00001994) which is a component habitat of Sea-pen and burrowing megafauna communities and Mud habitats in deep water as long as the mean burrow count is 0.2/$m^2$ minimum, of which two points are not. See the Ecological Network Guidance for more information.<br><br>Survey ID: CO3110 (2010) , CV0822 (2008), CV0720 (2007) , CO3208 (2008), C03207 (2007), CV0424 (2004), CV0519 (2005), CV0325 (2003) | No | Yes | Yes | http://oar.marine.ie/handle/10793/59/browse?type=title&submit_browse=Title |

## South Rigg rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | ISCZ 06_HOCI_14 | FOCI habitat | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CO082012) | PSA points | Yes | Grabs samples | N/A | N/A | N/A | Habitat map from survey - combination of 18 grabs and 19 video tows were analysed to update existing maps of the area. | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| Mud habitats in deep water | ISCZ 06_HOCI_14 | FOCI habitat | No | Irish Marine Institute *PSA* data points | PSA data points | yes | Ground-truthing | **5** | N/A | 2003/2004 | PSA data collected as part of the annual *Nephrops stock assessment burrow count surveys* | Yes | Yes | Yes | http://data.marine.ie/ |

## South Rigg rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sea-pen and burrowing megafauna communities | ISCZ 06_HOCI_18 | FOCI habitat | No | Irish Marine Institute (Irish Sea sea-pen records) | Sea-pen records | No | Video and camera stills analysis | **1** | N/A | N/A | 1 record details the occurrence of Sea-pen species V. Mirabilis within the site. The survey ID is listed as CO3110, Video_Line 24. )<br><br>This is within the site boundary but no extent was recommended for this feature.<br><br>The occurrence of Sea-pens can be used to validate the ENG feature as a characterising component of the Marine Habitats Classification Scheme biotope, "Sea-pen and burrowing megafauna in circalittoral fine mud" (SS.SMu.CFiMu.SpnMeg) (http://jncc.defra.gov.uk/marine/biotopes/biotope.aspx?biotope=JNCCMNCR00001994) which is a component habitat of Sea-pen and burrowing megafauna communities and Mud habitats in deep water. See the Ecological Network Guidance for more information on correlation. | No | Yes | Yes | http://oar.marine.ie/handle/10793/59/browse?type=title&submit_browse=Title |

## South Rigg rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sea-pen and burrowing megafauna communities | ISCZ 06_HOCI_18 | FOCI habitat | No | Irish Marine Institute *Nephrops* Stock Assessment burrow counts data points (2003-2011) | Burrow density points | No | Video and camera stills analysis | **16** | N/A | N/A | Twenty records are available across the South Rigg site. Two records recorded zero burrow counts and cannot be used to verify the feature. Two subsequent records are available but have been recorded as part of the regional MCZ project handover data. This resulted in 16 records verifying the feature across the site. One further record is recorded as a Sea pen, the specific dataset of which is above.<br><br>The occurrence of *Nephrops* burrows on soft substrata can be used to validate the ENG feature as a characterising component of the Marine Habitats Classification Scheme biotope, "Burrowing megafauna and [*Maxmuelleria lankesteri*] in circalittoral mud" (SS.SMu.CFiMu.MegMax) (http://jncc.defra.gov.uk/marine/biotopes/biotope.aspx?biotope=JNCCMNCR00001994) which is a component habitat of Sea-pen and burrowing megafauna communities and Mud habitats in deep water as long as the mean burrow count is 0.2/$m^2$ minimum, of which two points are not. See the Ecological Network Guidance for more information.<br><br>Survey ID: CO3109 (2009), CO3110 (2010) , CV0822 (2008), CV0720 (2007) , CO3208 (2008), C03207 (2007), CV0424 (2004), CV0519 (2005), CV0325 (2003) | No | Yes | Yes | http://oar.marine.ie/handle/10793/59/browse?type=title&submit_browse=Title |

## South Rigg rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sea-pen and burrowing megafauna communities | ISCZ 06_HOCI_18 | FOCI habitat | No | Sea-pens and burrowing megafauna communities - Regional project updated national data set MB102 Task 2C . | Habitat data points | No | Unknown | **2** | N/A | N/A | Two locations recorded 7 occurrences of sea-pen (however one Lat Long recorded 6 of these, so only 2 have been recorded here.)<br><br>The regional MCZ project referenced the data as:<br><br>"Sea-pen and burrowing megafauna communities are a Habitat Feature of Conservation Importance under the Ecological Network Guidance and on the OSPAR List of Threatened and/or Declining Species and Habitats (Region II - North Sea, Region III - Celtic Sea) These records have been extracted from the ICES stock assessments for *Nephrops* in Irish Sea (ICES area VIIa) This work was undertaken by the Agro-Food and Biosciences Institute, Northern Ireland. Sea-pen were reordered when observed; the data shows an extract of these points. Data provided to ISCZ by AFBI/ Marine Institute Ireland in Northern Ireland. Data not currently published as of August 2011."<br><br>The survey ID is listed as CO3110, further investigation into the AFBI/Marine institute data JNCC hold found that only on point is available for the 2nd location where the regional MCZ project data has 6. Within this in mind we have only recorded the 2 occurrences in this data layer and indicated they are from 2010. | No | Yes | Yes | http://jncc.defra.gov.uk/PDF/120718_MCZAP_Pages_from_ISCZ_final_recommendations_FULL_REPORT_part_1_&_2.pdf |

## South Rigg rMCZ – Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ocean quahog (*Arctica islandica*) | ISCZ 06_SOCI_3 | FOCI species | No | BUTLER, P. 2009 Establishing the Arctica islandica archive: Development of the definitive shell-based proxy for the North Atlantic shelf seas. PhD thesis, Bangor University. | Report | No | Ground-truthing | 3 | N/A | 2004-2009 | There are three data records digitised by ISCZ regional MCZ project in 2011. The year of publication of the PhD is 2009 however the PhD was undertaken between 2004-2009 which would mean the data was not collected in 2009 but is between 6 and 12 years old.<br><br>Information supplied by Regional Project:<br><br>*Abstract: Records are taken from BUTLER, P. 2009 Establishing the Arctica islandica archive: Development of the definitive shell-based proxy for the North Atlantic shelf seas. PhD thesis, Bangor University. Ocean quahogs are a Species feature of conservation importance on the ecological network guidance and are listed on the OSPAR List of Threatened and/or Declining Species and Habitats (Region II – Greater North Sea) In Wales, ocean quahogs are a species of principal importance for the purpose of conservation biodiversity under the Natural Environment and Rural Communities Act 2006 Records Digitised by ISCZ project 2011.* | No | Yes | No | http://www.bangor.ac.uk/oceansciences/staff/php/staffdetails1.php?person=0073 http://jncc.defra.gov.uk/PDF/120718_MCZAP_Pages_from_ISCZ_final_recommendations_FULL_REPORT_part_1_&_2.pdf |

## Table 142: South Rigg rMCZ confidence assessment

| South Rigg rMCZ – Confidence Assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A4.2 Moderate energy circalittoral rock | ISCZ 06_A4.2 | **26** | N/A | N/A | N/A | Yes | Peer review | **High** | A habitat map from survey with 26 ground-truthing validation points demonstrate the presence of Moderate energy circalittoral rock in the site. | **High** | The 100% coverage of the feature on a habitat map of the north-west section from survey, with 26 ground-truthing points demonstrates the extent of Moderate energy circalittoral rock in the site. | Series of data over several years have contributed to the habitat map which maps the feature extent. |
| A4.3 Low energy circalittoral rock | ISCZ 06_A4.3 | **0** | N/A | N/A | N/A | No | N/A | **No confidence** | There is no confidence in this feature as there is direct evidence to suggest the rock present is in a moderate energy environment rather than a low energy environment as suggested by EUSeaMap. | **No confidence** | There is no confidence in this feature as there is direct evidence to suggest the rock present is in a moderate energy environment rather than a low energy environment as suggested by EUSeaMap. | Survey data indicates moderate energy across the rock feature rather than low energy, including biotope information. |
| A5.2 Subtidal sand | ISCZ 06_A5.2 | **19** | N/A | N/A | N/A | No | N/A | **High** | There are 20 data points demonstrating the presence of Subtidal sand in the site. | **High** | The distribution of multiple ground-truthing data demonstrates the extent of Subtidal sand. | Ground truthing supports the extent of EUSeaMap for this feature |

| South Rigg rMCZ – Confidence Assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A5.3 Subtidal mud | ISCZ 06_A5.3 | **24** | N/A | N/A | N/A | No | N/A | **High** | There are 20 ground-truthing data points (*Nephrops* survey data from the Marine Institute) demonstrate the presence of Subtidal mud in the site. | **High** | Well-distributed ground-truth data (*Nephrops* survey data from the Marine Institute) points demonstrate the extent of Subtidal mud across the southern portion of the site. | The combinations of habitat map from survey and PSA data, overlaying the EUSeaMap confirms the extent of the feature |
| A5.4 Subtidal mixed sediments | ISCZ 06_A5.4 | **11** | N/A | N/A | N/A | Yes | Peer review | **High** | A habitat map from survey with 11 ground-truthing validation points and a further three ground-truthing points demonstrate the presence of Subtidal mixed sediments in the site. | **Moderate** | Expert judgement applied due to older classification systems used for some of the data and therefore disparities in how the features were assigned, resulted in the confidence score for Subtidal mixed sediments being amended from high to moderate. | |
| Mud habitats in deep water | ISCZ | **19** | N/A | N/A | N/A | No | N/A | **High** | There are 20 well-distributed ground-truthing data (*Nephrops* survey data points from the Marine Institute) and EUSeaMap data indicating low energy across the site demonstrate the presence of Mud habitats in deep water | **High** | There are 20 well-distributed ground-truthing data (*Nephrops* survey data points from the Marine Institute from the Marine Institute), predominantly across the southern portion of the site demonstrate the extent of Mud habitats in deep water in the site. | Metadata of the *Nephrops* trawls indicate the presence of this feature, and the distribution of points verifies the extent to equal that of subtidal mud. |

## South Rigg rMCZ – Confidence Assessment

| ENG feature | Site/Feature Code (Unique ID) | Total number of points which verify the ENG feature. | Total number of ENG species data points older than 12 yrs. | Total number of ENG species data points between 6 and 12 yrs. | Total number of ENG species data points 6 yrs old or less. | Expert judgment used. | QA of expert judgement | Confidence in ENG feature presence | Justification for confidence in ENG feature presence | Confidence in ENG feature extent | Justification for confidence in ENG feature extent | General comments on decision made |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sea-pen and burrowing megafauna communities | ISCZ 06_HOCI_18 | **19** | N/A | N/A | N/A | No | N/A | **High** | There are 19 well-distributed ground-truth data (*Nephrops* survey data points from the Marine Institute) demonstrate the presence of Sea-pen and burrowing megafauna communities in the site. | **High** | There are 19 well-distributed ground-truth data (*Nephrops* survey data points from the Marine Institute) that demonstrate the extent of Sea-pen and burrowing megafauna communities in the site. | No extent for the Sea pens and burrowing megafauna was provided by the regional projects. Evidence was established through the Nephrops data, which confirmed the same extent as that of Subtidal mud. |
| Ocean quahog (*Arctica islandica*) | ISCZ 06_SOCI_3 | **2** | 0 | 2 | 0 | No | N/A | **Low** | There are only two records between 6-12 years old showing the presence of live Ocean quahog in the site. | **Low** | There are only two records to demonstrate the distribution of Ocean quahog in the site and no indication of a wider spatial extent or a particular area in the site. | The Butler (2009) PHD was undertaken between 2004-2009. We assume the data was collected as part of the study and not historical which would mean the data was not collected in 2009 so has been assumed to be between 6 and 12 years old and collected by specialist. |

## Table 143: South-West Deeps (West) MCZ data table

| South-West Deeps West MCZ - Data | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A5.3 Subtidal mud | FS 02_A5.3 | BSH | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0613) | PSA points | Yes | Grabs | 9 | | 2013 | PSA samples collected on CEND0613 MCZ site verification survey as part of Defra contract MB0120 | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## South-West Deeps West MCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mud habitats in deep water | FS 02_HOCI_13 | HOCI | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0613) | PSA points | Yes | Grabs | 9 | | 2013 | PSA samples collected on CEND0613 MCZ site verification survey as part of Defra contract MB0120 | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## South-West Deeps West MCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fan mussel (*Atrina fragilis*) | | SOCI | Yes | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0613) | Ground-truthing | Yes | Sills | 1 | N/A | 2013 | Still images collected during video tow SO53_STN_252 on CEND0613 MCZ site verification survey as part of Defra contract MB0120 | No | Yes | Yes | Data acquired through the Cefas partnership. Report currently not published. Contact JNCC or Cefas direct to learn how to access this information. Further information on the Defra MB0120 contract can be viewed at http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Table 144: South-West Deeps (West) MCZ confidence assessment

| South-West Deeps West MCZ – Confidence Assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A5.3 Subtidal mud | FS 02_A5.3 | 9 | N/A | N/A | N/A | Yes - presently no mapped extent | MCZ evidence QA group | High | There are nine ground-truth samples collected as part of MB0120 survey that demonstrate the presence of Subtidal mud in the site. | Moderate | This was a recently identified feature found during a MB0120 survey. The extent of Subtidal mud has been modelled by BGS using new data acquired. As the extent is modelled and only supported by a limited number of ground-truth points, expert judgement has been used to assign a Moderate confidence in extent. | |
| Mud habitats in deep water | FS | 9 | N/A | N/A | N/A | Yes - presently no | Discussed in evidence QA | **High** | There are nine ground-truth samples collected as part of MB0120 survey that demonstrate the presence of Mud habitats in deep water in the site. | **Moderate** | This is a recently identified feature found during a MB0120 survey. The extent of the feature has been modelled by BGS using new data acquired. As extent is modelled and only supported by a limited number of ground-truth points, expert judgement has been used to assign a Moderate confidence in extent. | |
| Fan mussel (*Atrina fragilis*) | | 1 | 0 | 0 | 1 | No | N/A | **Low** | Specimens were identified from by two images taken during a single video transect during the MB0120 survey in 2013. | **Low** | Distribution of Fan mussel only known from by two images taken during single video transect during the MB0120 survey in 2013 | |

## Table 145: Western Channel rMCZ data table

| Western Channel rMCZ - Data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG Feature** | **Site/Feature Code (Unique ID)** | **ENG Feature Type** | **New Feature/ Feature removed** | **Data Source** | **Data Type** | **New data for 2014 assessments?** | **Collection Method if point data** | **Number of points which verify the ENG feature** | **Number of points recording only the ENG's parent feature** | **Year collected (for species FOCI and temporally varying habitats )** | **Comment on data source** | **Conversion to EUNIS habitat using JNCC correlation table *** | **Data layer used for presence?** | **Data layer used for extent?** | **External data source reference** |
| A4.2 Moderate energy circalittoral rock | FS 12_A4.2 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND CEND0312) - VIDTR | Video | Yes | Video tow | 5 | 0 | N/A | Images of A4.2 Moderate energy circalittoral rock in 5 video tows from the 2012 MCZ verification survey | Yes | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A4.2 Moderate energy circalittoral rock | FS 12_A4.2 | BSH | No | UkSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |
| A4.2 Moderate energy circalittoral rock | FS 12_A4.2 | BSH | No | MB0102 Task 2E | Combined Kinetic Energy map | No | N/A | N/A | N/A | N/A | Moderate energy is identified within the recommended extent of EUNIS A4.2 Moderate energy circalittoral rock broad-scale habitat. | No | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368 |

## Western Channel rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A4.2 Moderate energy circalittoral rock | FS 12_A4.2 | BSH | No | BGS hard substrate | Hard substrate map | No | 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 "DataSource: Samples, Seismic, Admiralty Charts". The Polygons BGS ID are: BGS_467. No BGS data point validated this feature. | No | Yes | Yes | enquiries@bgs.ac.uk |
| A5.1 Subtidal coarse sediment | FS 12_A5.1 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0312) - PSA | PSA points | Yes | Grabs | 57 | 0 | 2012 | 57PSA samples collected in the 2012 MCZ verification survey. processed to CEFAS data standards | Yes | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.1 Subtidal coarse sediment | FS 12_A5.1 | BSH | No | UkSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## Western Channel rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.1 Subtidal coarse sediment | FS 12_A5.1 | BSH | No | BGS seabed sediments data points | PSA points | No | Grabs | **24** | 0 | N/A | There are ten records of EUNIS A5.1 Subtidal coarse sediment within the recommended extent of the feature and a further 13 records of EUNIS A5.1 Subtidal coarse sediment on the recommended extent for EUNIS A4.3 Low Energy circalittoral rock so were not used in this analysis.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |
| A5.2 Subtidal sand | FS 12_A5.2 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0312) - PSA | PSA points | Yes | Grabs | 1 | 0 | 2012 | MB0120: CEND0312B PSA samples, processed to CEFAS data standards | Yes | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |

## Western Channel rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.2 Subtidal sand | FS 12_A5.2 | BSH | No | Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey 2012 (Survey ID: CEND0312) - VIDTR | Photo | Yes | Video tow | 6 | 0 | 2012 | MB0120: CEND0312B Video/Photo samples, processed to CEFAS data standards | Yes | Yes | Yes | http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18221 |
| A5.4 Subtidal mixed sediments | FS 12_A5.4 | BSH | No | UkSeaMap 2010 | Habitat map (modelled) | No | N/A | N/A | N/A | N/A | N/A | No | Yes | Yes | http://jncc.defra.gov.uk/page-5534 |

## Western Channel rMCZ - Data

| ENG Feature | Site/Feature Code (Unique ID) | ENG Feature Type | New Feature/ Feature removed | Data Source | Data Type | New data for 2014 assessments? | Collection Method if point data | Number of points which verify the ENG feature | Number of points recording only the ENG's parent feature | Year collected (for species FOCI and temporally varying habitats ) | Comment on data source | Conversion to EUNIS habitat using JNCC correlation table * | Data layer used for presence? | Data layer used for extent? | External data source reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A5.4 Subtidal mixed sediments | FS 12_A5.4 | BSH | No | BGS seabed sediments data points | PSA points | No | Grabs | **6** | 0 | N/A | There are three records of EUNIS A5.4 Subtidal mixed sediments within the recommended extent of the feature and one parent feature record of A5.1 Subtidal coarse sediment. Please note there are a further 3 records of EUNIS A5.4 Subtidal mixed sediments on the recommended extent for EUNIS A4.3 Low energy circalittoral rock so were not used in this analysis.<br><br>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 http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf | Yes | Yes | Yes | enquiries@bgs.ac.uk |

## Table 146: Western Channel rMCZ confidence assessment

| Western Channel rMCZ – Confidence Assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A4.2 Moderate energy circalittoral rock | FS 12_A4.2 | 5 | N/A | N/A | N/A | Yes | MCZ evidence QA | **Low** | Ground-truthing sample data (video sampling) at five stations show the presence of patchy and isolated clumps of cobbles and boulders on sediment. | **Low** | Only data from modelled habitats are available to assess the extent of Moderate energy circalittoral rock in the site. The full extent of this feature cannot easily be determined due to its localised and patchy nature. | |
| A5.1 Subtidal coarse sediment | FS 12_A5.1 | 81 | N/A | N/A | N/A | No | N/A | **High** | An almost complete (99.4%) habitat map and >50 ground-truthing sample data demonstrate the presence of Subtidal coarse sediment in the site. | **High** | An almost complete (99.4%) habitat map demonstrate the extent of Subtidal coarse sediment in the site. | |
| A5.2 Subtidal sand | FS 12_A5.2 | 1 | N/A | N/A | N/A | No | N/A | **Moderate** | An almost complete (99.4%) habitat map with a supporting ground-truthing sample and acoustic data demonstrate the presence of Subtidal sand in the site. | **Moderate** | Interpreted acoustic data provides a habitat map showing the extent of this Subtidal sand feature. However, our confidence in the accuracy of the spatial extent of is reduced to Moderate using expert judgement due to the limited number of ground-truthing sample points within the mapped areas, and a mis-match between samples classified as sub tidal sand and the underlying mapped habitat. | |

| Western Channel rMCZ – Confidence Assessment | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ENG feature** | **Site/Feature Code (Unique ID)** | **Total number of points which verify the ENG feature.** | **Total number of ENG species data points older than 12 yrs.** | **Total number of ENG species data points between 6 and 12 yrs.** | **Total number of ENG species data points 6 yrs old or less.** | **Expert judgment used.** | **QA of expert judgement** | **Confidence in ENG feature presence** | **Justification for confidence in ENG feature presence** | **Confidence in ENG feature extent** | **Justification for confidence in ENG feature extent** | **General comments on decision made** |
| A5.4 Subtidal mixed sediments | FS 12_A5.4 | 6 | N/A | N/A | N/A | No | N/A | **Moderate** | There are six BGS ground-truthing sample points which demonstrate the presence of Subtidal mixed sediments in the site. | **Low** | The distribution of sampling points and only a mapped extent of Subtidal mixed sediments based on modelled data has meant confidence in feature extent is Low. | |

# Annex 5: JNCC MCZ Evidence Quality Assurance Group – Terms of Reference

## JNCC MCZ Evidence Quality Assurance Group

### Terms of Reference

**Role**

The JNCC MCZ Evidence Quality Assurance (QA) Group was established to review the evidence available to inform MCZ advice to Defra. Such evidence will include data gathered through the Defra Research and Development Data Collection Programme for recommended Marine Conservation Zones (rMCZ), data mining exercises by JNCC and Defra, and any data provided through the public consultations on Marine Conservation Zones. 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 rMCZs;
    - The ecological condition of features (e.g. evidence of damage to features or via evidence on the scale and intensity of human activities); and,
    - The likely risk of future damage to features by ongoing or new activities..
- Consider the time taken to access, process and interpret the data. Some data sources may be excluded from the assessments and advice package, on the basis that it would take prohibitively too long to prepare the data;
- Consider the status and use of data used in previous data confidence assessments. For example, in our original advice on the rMCZs in July 2012[110] (and subsequent Amendments Report[111]), JNCC used all available data to inform the evidence assessments and advice provided to Defra. It may be appropriate to exclude some datasets that may now be less reliable (due to age/survey technique) than data collected during recent surveys. The JNCC MCZ Evidence QA Group will review these instances on a dataset/feature/site basis, to ensure that the 'best available evidence' is used to assess the confidence in feature presence and extent;
- Review approaches for dealing with situations where feature boundaries differ significantly from the Regional MCZ Project recommended extents (see supplementary paper on Technical Protocol E);

[110] MCZ 2012 Advice. Available at: http://jncc.defra.gov.uk/page-6229
[111] MCZ 2012 Amendments Report. Available at: http://jncc.defra.gov.uk/page-6229

- Review advice generated for Defra on any new site boundaries which were either submitted by stakeholders during a public consultation on the site, or are considered necessary due to the data supporting the site;
- Document all data considered by the Group 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. The rationale for excluding datasets from the assessment process will be reported and published alongside the evidence assessment results;
- Take into consideration and ensure the application of the JNCC evidence quality and policy[112] and operational guidance on evidence quality assurance[113].

A key role of the Group will be to evaluate and quality assure any use of expert judgement when applying Technical Protocol E (and the associated Supplementary Paper).

The Group will prioritise data sources that relate to the MCZs being considered by the Group. 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).

The Group will offer a representative to join the Natural England 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:

JNCC Principle Specialist responsible for the JNCC operational guidance on evidence quality assurance (Chair)

JNCC Principle Specialist who is the Head of Data Services

JNCC Principle Specialist who is the Marine Head of Marine Evidence

JNCC Senior Advisor who is the Offshore Data & Survey Manager

[112] JNCC Evidence Quality Policy – Joint Committee paper. Available at: http://jncc.defra.gov.uk/pdf/comm13P15.pdf
[113] JNCC Report No.519. Available at: http://jncc.defra.gov.uk/page-6658

JNCC Senior Advisor who is the Senior MPA Advisor managing the MCZ Designations Project

JNCC MPA Advisors responsible for conducting the offshore MCZ evidence assessments

Natural England representative

MMO representative

**Observers**

Further assistance may be sourced from outside the Group, in situations where this would help to inform decisions regarding the use of data. Any external input will be documented but these members will not contribute to the formal decisions taken by the Group.

As of January 2014, an observer from the Joint Committee's Marine Protected Areas sub-group will be invited to the MCZ Evidence QA Group, primarily to facilitate the understanding between the Executive and non-Executive QA processes of JNCC's MCZ advice. Members of the MPA Sub Group are independent marine scientists who provide specialist advice to the Joint Committee on MPA matters. Such an observer will join the Group where the Group will be evaluating/quality assuring the application of expert judgement when applying Technical Protocol E (and the associated Supplementary Paper).

The role of this observer is as follows:

- To provide the JNCC Committee's MPA sub-group with an overview of the MCZ confidence assessments in feature presence and feature extent undertaken through the development of JNCC's MCZ advice;
- To provide technical advice to other members of the Sub Group on the MCZ confidence assessments in feature presence and feature extent undertaken through the development of JNCC's MCZ advice;
- To assess whether the work of the MCZ Evidence QA Group meeting follows the process and standards set out by JNCC and offer those views during said meeting;
- To offer their impartial views on the use of expert judgement in our confidence assessments in feature presence and feature extent;
- To offer any comments they deem necessary in order to assist the Group in fulfilling its role as outlined in these Terms of Reference;

This observer will not be part of the decision-making process of the MCZ Evidence QA Group in order to retain their independence within the non-Executive sign-off process.

**Reporting Structure**

The Chair (or a deputy as nominated by 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 commenced on the 22nd April 2013 and will meet when required during the development of JNCC's advice to Defra on MCZs.

# Annex 6: Mud habitats in deep water – MCZ Feature of Conservation Importance: JNCC advice note on inclusion within offshore MCZs

## Introduction

This note should be read in conjunction with JNCC clarifications on the habitat definitions of two habitat FOCI, Mud habitats in deep water and Sea-pen and burrowing megafauna communities[49]. The paper clarifies the habitat definition for Mud habitats in deep water (a UK BAP habitat) and Sea-pen and burrowing megafauna communities (an OSPAR Threatened and/or Declining habitat).

Following the publication of the above paper, JNCC (in partnership with Cefas) have been reviewing data on the presence of three habitats within offshore MCZs: Subtidal mud, Mud habitats in deep water, and Sea-pen and burrowing megafauna communities. On examining these data, JNCC have recognised the overlap between these three habitats within certain offshore MCZs. This note briefly explains these instances and a possible solution to avoid a duplication of habitat features being designated within an MCZ where actually only one particular ecological community is present.

## Overlap between habitats

*Mud habitats in deep water* is a slightly broader habitat type than *Sea-pen and burrowing megafauna communities*. Whilst it incorporates all biotopes included under '*Sea-pen and burrowing megafauna communities*' (see correlations paper[114]), *Mud habitats in deep water* also includes additional biotopes typical of soft anoxic muds and circalittoral sandy muds, that are not considered a component part of '*Sea-pen and burrowing megafauna communities*'.

*Subtidal mud* is a broad-scale habitat feature in the MCZ process, equivalent to EUNIS Level 3, which covers a range of more detailed biotopes including all infralittoral, circalittoral and deep circalittoral mud and sandy mud biotopes. As such the habitat types '*Mud habitats in deep water*' and '*Sea-pen and burrowing megafauna communities*' are themselves a component part of, or 'contained within' the broader *Subtidal mud* habitat.

*Deep sea bed* is also a broad-scale habitat in the MCZ process, equivalent to EUNIS Level 2, which included a range of more detailed deep-sea mud biotopes; note JNCC are currently updating the classification for the deep sea. The habitat types '*Mud habitats in deep water*' and '*Sea-pen and burrowing*

[114] Correlation Table showing Relationships between Marine Habitat Classifications (2004 and 2007 versions) and Habitats Listed for Protection, December 2010. Available at: http://jncc.defra.gov.uk/pdf/EUNIS_Correlation_2007-11_20101206v2.pdf

*megafauna communities*' are also are a component part of, or 'contained within' the broader *Deep sea bed* habitat.

**Table 147: Relationship between 'Mud habitats in deep water' and other listed habitats**

| Listed habitat | Type of habitat | Relationship | Broad-scale listed habitat | Type of habitat |
|---|---|---|---|---|
| Mud habitats in deep water | UK BAP and Habitat FOCI | Contains | Sea-pen and burrowing megafauna communities | OSPAR T&D and Habitat FOCI |

**Table 148: Relationship between 'Mud habitats in deep water' and listed 'broad-scale' habitats**

| Listed habitat | Type of habitat | Relationship | Broad-scale listed habitat | Type of habitat |
|---|---|---|---|---|
| Mud habitats in deep water | UK BAP and Habitat FOCI | Contained within | Subtidal mud | MCZ Broad-scale |
| | | | Deep-sea bed | MCZ Broad-scale |

Table 147 and Table 148 show that *Mud habitats in deep water* **contains** *Sea-pen and burrowing megafauna*, and itself is **contained within** *Subtidal mud* and *Deep sea bed*. Following these logical links, one could assume a hierarchy exists for feature presence such that where *Sea-pen and burrowing megafauna* are present, by default *Mud habitats in deep water* are present, and furthermore, *Subtidal mud* or *Deep seabed* are also present (depending upon the location/depth of the feature).

A review of sites contained with this advice package, these data received support the designation of '*Subtidal mud*', '*Mud Habitats in Deep Water*' and '*Sea-pen and burrowing megafauna communities*' in five

offshore sites[115]. For each of these habitat FOCI, JNCC has high confidence in feature presence and feature extent having applied Technical Protocol E[40] to the available data. Following the logical links between these features set out above, JNCC has also recommended the 'parent' feature. Consequently, the sites have three possible features but they share the same extent, are exactly the same ecologically, and have mainly used the same data to support the confidence assessment scores for each feature. Having reflected on the merits of whether all three habitats should be designated in a site where their spatial extent is the same, and having reflected on the clarified definitions provided in the paper[49], JNCC advise that the habitat FOCI '*Mud habitats in deep water*' is not designated as a feature of a site where a) a site is also advised for designation for '*Subtidal mud*' and '*Sea-pen and burrowing megafauna communities*', and b) these habitats share the same spatial extent. JNCC consider there is limited extra conservation value in designating '*Mud habitats in deep water*' where it is afforded protection by its parent and component habitats.

JNCC note that such advice does not apply to all occurrences where the three habitats overlap. There may be occasions where '*Subtidal mud*' and '*Mud habitats in deep water*' occur without '*Sea-pen and burrowing megafauna communities*', or where all three habitats occur but with different spatial extents. In those instances, JNCC would advise that all habitats are designated where data support their designation. It should also be recognised that '*Mud habitats in deep water*' only occur in low energy environments and may also occur beyond 200m, outside of the range of '*Subtidal mud*' and into '*Deep sea bed*'.
In summary, where a situation arises in which JNCC views the three habitats (*Subtidal mud, Mud habitats in deep water* and *Sea-pen and burrowing megafauna* communities) to overlap in data and spatial extent, we advise that '*Mud habitats in deep water*' is not considered as a feature of an MCZ. In the case our 2014 advice, JNCC advise that 'Mud habitats in deep water' are not designated as features of Celtic Deep rMCZ, Mud Hole rMCZ, North-West Jones Bank rMCZ, Slieve Na Griddle rMCZ and South Rigg rMCZ.

[115] Celtic Deep rMCZ, Mud Hole rMCZ, North-West Jones Bank rMCZ, Slieve Na Griddle rMCZ and South Rigg rMCZ

# Annex 7: Assessment of feature condition

The tables in Annex 5 detail the assessment of feature condition for the 19 offshore sites being considered for Tranche Two of the MCZ designation process. The assessments take account of any new data, including survey data that has been made available. Any features with a vulnerability of **none**, **unknown, N/A** or **Low** have been removed from the tables in this document, leaving only the features assessed with a vulnerability of **High** or **Moderate**. Therefore some sites will not appear in this Annex. Please note that the scores assigned to the FOCI **Mud habitats in deep water** and presented here have followed the sensitivities levels set within MB0102[74], however within our site narratives (Section 5) the scores have been aligned with the broad-scale habitat **Subtidal mud** (for further information see Section 5.3 on the method for Confidence in feature condition).

**Table 149: Celtic Deep rMCZ Vulnerability Assessment**

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 10 A5.3 | Subtidal mud | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | UK fishing activity is relatively low as indicated in the aggregated grid VMS data (2006-9) with bottom Otter trawl activity at a maximum of 4 hrs over 3 years; UK beam trawl activity at 2 hrs over 3 years over a limited area; and Nephrops a maximum of 67 hrs over 3 years across the site.<br><br>EU aggregated demersal trawling activity (targeting Nephrops) reaches a maximum of 2311 hrs over 3 years, primarily in the southern region of the site, but activity typically high across the whole site. EU beam trawling reaches a maximum of 10 hrs over 3 years. 2009-2012 VMS ping data also demonstrates high recent activity levels distributed across the site (the highest density activity is in the Eastern / North Eastern side of the site, with progressively more patchy and dispersed, but still high, activity across the site to the West, for bottom-towed gears (Nephrops trawls, otter trawls and un-named gears)). | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 10 A5.3 | Subtidal mud | Removal of target species (lethal) | Fishing - benthic trawling | NS-M | High | UK fishing activity is relatively low as indicated in the aggregated grid VMS data (2006-9) with bottom Otter trawl activity at a maximum of 4 hrs over 3 years; UK beam trawl activity at 2 hrs over 3 years over a limited area; and Nephrops a maximum of 67 hrs over 3 years across the site.<br><br>EU aggregated demersal trawling activity (targeting Nephrops) reaches a maximum of 2311 hrs over 3 years, primarily in the southern region of the site, but activity typically high across the whole site. EU beam trawling reaches a maximum of 10 hrs over 3 years. 2009-2012 VMS ping data also demonstrates high recent activity levels distributed across the site (the highest density activity is in the Eastern / North Eastern side of the site, with progressively more patchy and dispersed, but still high, activity across the site to the West, for bottom-towed gears (Nephrops trawls, otter trawls and un-named gears)). N.B. this score is related only to gears associated with Nephrops trawling. | High |
| FS 10 A5.3 | Subtidal mud | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M | High | UK fishing activity is relatively low as indicated in the aggregated grid VMS data (2006-9) with bottom Otter trawl activity at a maximum of 4 hrs over 3 years; UK beam trawl activity at 2 hrs over 3 years over a limited area; and Nephrops a maximum of 67 hrs over 3 years across the site.<br><br>EU aggregated demersal trawling activity (targeting Nephrops) reaches a maximum of 2311 hrs over 3 years, primarily in the southern region of the site, but activity typically high across the whole site. EU beam trawling reaches a maximum of 10 hrs over 3 years. 2009-2012 VMS ping data also demonstrates high recent activity levels distributed across the site (the highest density activity is in the Eastern / North Eastern side of the site, with progressively more patchy and dispersed, but still high, activity across the site to the West, for bottom-towed gears (Nephrops trawls, otter trawls and un-named gears)). | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 10 A5.3 | Subtidal mud | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | L-M | High | UK fishing activity is relatively low as indicated in the aggregated grid VMS data (2006-9) with bottom Otter trawl activity at a maximum of 4 hrs over 3 years; UK beam trawl activity at 2 hrs over 3 years over a limited area; and Nephrops a maximum of 67 hrs over 3 years across the site.<br><br>EU aggregated demersal trawling activity (targeting Nephrops) reaches a maximum of 2311 hrs over 3 years, primarily in the southern region of the site, but activity typically high across the whole site. EU beam trawling reaches a maximum of 10 hrs over 3 years. 2009-2012 VMS ping data also demonstrates high recent activity levels distributed across the site (the highest density activity is in the Eastern / North Eastern side of the site, with progressively more patchy and dispersed, but still high, activity across the site to the West, for bottom-towed gears (Nephrops trawls, otter trawls and un-named gears)). | High |
| FS 10 HOCI 13 | Mud habitats in deep water | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | UK fishing activity is relatively low as indicated in the aggregated grid VMS data (2006-9) with bottom Otter trawl activity at a maximum of 4 hrs over 3 years; UK beam trawl activity at 2 hrs over 3 years over a limited area; and Nephrops a maximum of 67 hrs over 3 years across the site.<br><br>EU aggregated demersal trawling activity (targeting Nephrops) reaches a maximum of 2311 hrs over 3 years, primarily in the southern region of the site, but activity typically high across the whole site. EU beam trawling reaches a maximum of 10 hrs over 3 years. 2009-2012 VMS ping data also demonstrates high recent activity levels distributed across the site (the highest density activity is in the Eastern / North Eastern side of the site, with progressively more patchy and dispersed, but still high, activity across the site to the West, for bottom-towed gears (Nephrops trawls, otter trawls and un-named gears)). | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 10 HOCI 13 | Mud habitats in deep water | Removal of non-target species (lethal) | Fishing - benthic trawling | H | High | UK fishing activity is relatively low as indicated in the aggregated grid VMS data (2006-9) with bottom Otter trawl activity at a maximum of 4 hrs over 3 years; UK beam trawl activity at 2 hrs over 3 years over a limited area; and Nephrops a maximum of 67 hrs over 3 years across the site.<br><br>EU aggregated demersal trawling activity (targeting Nephrops) reaches a maximum of 2311 hrs over 3 years, primarily in the southern region of the site, but activity typically high across the whole site. EU beam trawling reaches a maximum of 10 hrs over 3 years. 2009-2012 VMS ping data also demonstrates high recent activity levels distributed across the site (the highest density activity is in the Eastern / North Eastern side of the site, with progressively more patchy and dispersed, but still high, activity across the site to the West, for bottom-towed gears (Nephrops trawls, otter trawls and un-named gears)). | High |
| FS 10 HOCI 13 | Mud habitats in deep water | Removal of target species (lethal) | Fishing - benthic trawling | L | High | UK fishing activity is relatively low as indicated in the aggregated grid VMS data (2006-9) with bottom Otter trawl activity at a maximum of 4 hrs over 3 years; UK beam trawl activity at 2 hrs over 3 years over a limited area; and Nephrops a maximum of 67 hrs over 3 years across the site.<br><br>EU aggregated demersal trawling activity (targeting Nephrops) reaches a maximum of 2311 hrs over 3 years, primarily in the southern region of the site, but activity typically high across the whole site. EU beam trawling reaches a maximum of 10 hrs over 3 years. 2009-2012 VMS ping data also demonstrates high recent activity levels distributed across the site (the highest density activity is in the Eastern / North Eastern side of the site, with progressively more patchy and dispersed, but still high, activity across the site to the West, for bottom-towed gears (Nephrops trawls, otter trawls and un-named gears)). N.B. this score is related only to gears associated with Nephrops trawling. | Moderate |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 10 HOCI 13 | Sea-pen and burrowing megafauna communities | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M | High | UK fishing activity is relatively low as indicated in the aggregated grid VMS data (2006-9) with bottom Otter trawl activity at a maximum of 4 hrs over 3 years; UK beam trawl activity at 2 hrs over 3 years over a limited area; and Nephrops a maximum of 67 hrs over 3 years across the site.<br><br>EU aggregated demersal trawling activity (targeting Nephrops) reaches a maximum of 2311 hrs over 3 years, primarily in the southern region of the site, but activity typically high across the whole site. EU beam trawling reaches a maximum of 10 hrs over 3 years. 2009-2012 VMS ping data also demonstrates high recent activity levels distributed across the site (the highest density activity is in the Eastern / North Eastern side of the site, with progressively more patchy and dispersed, but still high, activity across the site to the West, for bottom-towed gears (Nephrops trawls, otter trawls and un-named gears)). | High |
| FS 10 HOCI 13 | Sea-pen and burrowing megafauna communities | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | M | High | UK fishing activity is relatively low as indicated in the aggregated grid VMS data (2006-9) with bottom Otter trawl activity at a maximum of 4 hrs over 3 years; UK beam trawl activity at 2 hrs over 3 years over a limited area; and Nephrops a maximum of 67 hrs over 3 years across the site.<br><br>EU aggregated demersal trawling activity (targeting Nephrops) reaches a maximum of 2311 hrs over 3 years, primarily in the southern region of the site, but activity typically high across the whole site. EU beam trawling reaches a maximum of 10 hrs over 3 years. 2009-2012 VMS ping data also demonstrates high recent activity levels distributed across the site (the highest density activity is in the Eastern / North Eastern side of the site, with progressively more patchy and dispersed, but still high, activity across the site to the West, for bottom-towed gears (Nephrops trawls, otter trawls and un-named gears)). | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 10 HOCI 13 | Sea-pen and burrowing megafauna communities | Removal of target species (lethal) | Fishing - benthic trawling | M | High | UK fishing activity is relatively low as indicated in the aggregated grid VMS data (2006-9) with bottom Otter trawl activity at a maximum of 4 hrs over 3 years; UK beam trawl activity at 2 hrs over 3 years over a limited area; and Nephrops a maximum of 67 hrs over 3 years across the site.<br><br>EU aggregated demersal trawling activity (targeting Nephrops) reaches a maximum of 2311 hrs over 3 years, primarily in the southern region of the site, but activity typically high across the whole site. EU beam trawling reaches a maximum of 10 hrs over 3 years. 2009-2012 VMS ping data also demonstrates high recent activity levels distributed across the site (the highest density activity is in the Eastern / North Eastern side of the site, with progressively more patchy and dispersed, but still high, activity across the site to the West, for bottom-towed gears (Nephrops trawls, otter trawls and un-named gears)). N.B. this score is related only to gears associated with Nephrops trawling. | High |
| FS 10 HOCI 13 | Sea-pen and burrowing megafauna communities | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | UK fishing activity is relatively low as indicated in the aggregated grid VMS data (2006-9) with bottom Otter trawl activity at a maximum of 4 hrs over 3 years; UK beam trawl activity at 2 hrs over 3 years over a limited area; and Nephrops a maximum of 67 hrs over 3 years across the site.<br><br>EU aggregated demersal trawling activity (targeting Nephrops) reaches a maximum of 2311 hrs over 3 years, primarily in the southern region of the site, but activity typically high across the whole site. EU beam trawling reaches a maximum of 10 hrs over 3 years. 2009-2012 VMS ping data also demonstrates high recent activity levels distributed across the site (the highest density activity is in the Eastern / North Eastern side of the site, with progressively more patchy and dispersed, but still high, activity across the site to the West, for bottom-towed gears (Nephrops trawls, otter trawls and un-named gears)). | High |

## Table 150: Compass Rose rMCZ Vulnerability Assessment

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| NG 12 A5.1 | Subtidal coarse sediment | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | NS-H | Low | UK bottom-contact pair trawling activity relatively low at a maximum of 61 hrs over 3 years as indicated in the aggregated grid VMS data (2006-9). UK beam trawl, Nephrops and Otter trawl activity at maximum of 2 hrs over 3 years patchily distributed across site, indicating ship transit.<br><br>EU aggregated demersal trawling activity reaches a maximum of 94 hrs over 3 years, primarily in the South and West of the site. EU beam trawling reaches a maximum of 167 hrs over 3 years and is also heaviest in the SW from French and Belgium vessels. Activity diffuse but generally not intense. NB. The prevailing fishing effort appears to be largely associated with this feature. | Moderate |
| NG 12 A5.4 | Subtidal mixed sediments | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | Low | UK bottom-contact pair trawling activity relatively low at a maximum of 61 hrs over 3 years as indicated in the aggregated grid VMS data (2006-9). UK beam trawl, Nephrops and Otter trawl activity at maximum of 2 hrs over 3 years patchily distributed across site, indicating ship transit.<br><br>EU aggregated demersal trawling activity reaches a maximum of 94 hrs over 3 years, primarily in the South and West of the site. EU beam trawling reaches a maximum of 167 hrs over 3 years and is also heaviest in the SW from French and Belgium vessels. Activity diffuse but generally not intense. | Moderate |

## Table 151: East of Celtic Deep rMCZ Vulnerability Assessment

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 11 A5.2 | Subtidal sand | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | NS-M | Moderate | Exposure to mobile benthic gear (EU demersal <400hrs and <170 hrs beam 06-09) recorded over feature extent | Moderate |
| FS 11 A5.2 | Subtidal sand | Removal of non-target species (lethal) | Fishing - benthic trawling | NS-M | Moderate | Fishing for Nephrops is unlikely to occur over subtidal sand. occurs at very low levels, widespread over feature and moderate to high EU demersal fishing is occurring over the feature which is likely to be targeting Nephrops. (EU demersal <400hrs and <170 hrs beam 06-09) | Moderate |
| FS 11 A5.2 | Subtidal sand | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | NS-M | Moderate | Exposure to mobile benthic gear (EU demersal <400hrs and <170 hrs beam 06-09) is recorded over the feature extent | Moderate |
| FS 11 A5.3 | Subtidal mud | Removal of non-target species (lethal) | Fishing - benthic trawling | M | Moderate | Gridded and ping VMS 2006 – 2012 indicates UK fishing for Nephrops occurs at very low levels. Moderate to high EU demersal fishing activity (<400hrs 06-09) is occurring over the feature which is likely to be targeting Nephrops. | Moderate |
| FS 11 A5.3 | Subtidal mud | Removal of target species (lethal) | Fishing - benthic trawling | NS-M | High | VMS indicates UK fishing for Nephrops occurs at very low levels, widespread over feature (<25 hrs 06-09). VMS also indicates there is high levels of EU demersal fishing (<640 hrs demersal and <170 hrs beam trawling 06-09) occurring over the feature which is likely to be targeting Nephrops. | High |
| FS 11 A5.3 | Subtidal mud | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M | High | Exposure to mobile benthic gear (EU demersal <640hrs and <170 hrs beam 06-09) in places. | High |
| FS 11 A5.3 | Subtidal mud | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | L-M | High | Exposure to mobile benthic gear (EU demersal <640hrs and <170 hrs beam 06-09) in places. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 11 A5.4 | Subtidal mixed sediments | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | Low | Estimates of exposure to mobile benthic gear (EU demersal <173 hrs & <112 hrs Beam 06-09) recorded overlapping the feature extent. | Moderate |
| FS 11 HOCI 13 | Mud habitats in deep water | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | Exposure to mobile benthic gear (EU demersal <640hrs and <170 hrs beam 06-09) in places. | High |
| FS 11 HOCI 13 | Mud habitats in deep water | Removal of target species (lethal) | Fishing - benthic trawling | H | Moderate | VMS indicates UK fishing for Nephrops occurs at very low levels, widespread over feature (<25 hrs 06-09). VMS also indicates there is moderate to high EU demersal fishing (<640 hrs demersal and <170 hrs beam trawling 06-09) occurring over the feature which is likely to be targeting Nephrops. | High |

## Table 152: East of Haig Fras MCZ Vulnerability Assessment

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 07 A5.3 | Subtidal mud | Removal of non-target species (lethal) | Fishing - benthic trawling | M | Moderate | Using VMS data showing UK and EU fishing effort, a Moderate exposure has been assigned as the feature is commonly exposed to over 150hrs and with a maximum of ~350 hrs of beam and demersal activity between 2006-2009, with the highest level of activity focussed on the bottom SW corner of the site. UK 2009-2012 and EU 2009 - 2013 VMS ping data, identifies the fishery is continuing over the feature. | Moderate |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 07 A5.3 | Subtidal mud | Removal of target species (lethal) | Fishing - benthic trawling | NS-M | Moderate | Using VMS data showing UK and EU fishing effort, a Moderate exposure has been assigned as the feature is commonly exposed to over 150hrs and with a maximum of ~350 hrs of beam and demersal activity between 2006-2009, with the highest level of activity focussed on the bottom SW corner of the site. UK 2009-2012 and EU 2009 - 2013 VMS ping data, identifies the fishery is continuing over the feature. | Moderate |
| FS 07 A5.3 | Subtidal mud | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M | Moderate | Using VMS data showing UK and EU fishing effort, a Moderate exposure has been assigned as the feature is commonly exposed to over 150hrs and with a maximum of ~350 hrs of beam and demersal activity between 2006-2009, with the highest level of activity focussed on the bottom SW corner of the site. UK 2009-2012 and EU 2009 - 2013 VMS ping data, identifies the fishery is continuing over the feature. | Moderate |
| FS 07 A5.3 | Subtidal mud | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | L-M | Moderate | Using VMS data showing UK and EU fishing effort, a Moderate exposure has been assigned as the feature is commonly exposed to over 150hrs and with a maximum of ~350 hrs of beam and demersal activity between 2006-2009, with the highest level of activity focussed on the bottom SW corner of the site. UK 2009-2012 and EU 2009 - 2013 VMS ping data, identifies the fishery is continuing over the feature. | Moderate |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 07 HOCI 13 | Mud habitats in deep water | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | Moderate | Using VMS data showing UK and EU fishing effort, a Moderate exposure has been assigned as the feature is commonly exposed to over 150hrs and with a maximum of ~350 hrs of beam and demersal activity between 2006-2009, with the highest level of activity focussed on the bottom SW corner of the site. UK 2009-2012 and EU 2009 - 2013 VMS ping data, identifies the fishery is continuing over the feature. | High |
| FS 07 HOCI 13 | Mud habitats in deep water | Removal of non-target species (lethal) | Fishing - benthic trawling | H | Moderate | Using VMS data showing UK and EU fishing effort, a Moderate exposure has been assigned as the feature is commonly exposed to over 150hrs and with a maximum of ~350 hrs of beam and demersal activity between 2006-2009, with the highest level of activity focussed on the bottom SW corner of the site. UK 2009-2012 and EU 2009 - 2013 VMS ping data, identifies the fishery is continuing over the feature. | High |

## Table 153: Farnes East rMCZ Vulnerability Assessment

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| NG 14 A5.3 | Subtidal mud | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | UK 2006-2009 VMS indicates this activity is occurring over the feature, which is supported by UK 2009-2012 VMS Ping data indicating Nephrops ~150hrs effort over 4 yrs and Otter trawls identifying a maximum of ~515hrs effort over 4 yrs. Levels are High and occur across the extent of the feature located in the South East corner of the site.<br><br>EU fisheries demersal fisheries are present within the area, as outlined by aggregated VMS data 2006-2009 and VMS pings 2009-2013, although the levels are so low it would it could equally be considered to be attributable to non-fishing activities e.g. paying out & hauling | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| | | | | | | nets, waiting out bad weather. | |
| NG 14 A5.3 | Subtidal mud | Removal of target species (lethal) | Fishing - benthic trawling | NS-M | High | UK 2006-2009 VMS indicates this activity is occurring over the feature, which is supported by UK 2009-2012 VMS Ping data indicating Nephrops ~150hrs effort over 4 yrs and Otter trawls identifying a maximum of ~515hrs effort over 4 yrs. Levels are High and occur across the extent of the feature located in the South East corner of the site.<br><br>EU fisheries demersal fisheries are present within the area, as outlined by aggregated VMS data 2006-2009 and VMS pings 2009-2013, although the levels are so low it would it could equally be considered to be attributable to non-fishing activities e.g. paying out & hauling nets, waiting out bad weather. | High |
| NG 14 A5.3 | Subtidal mud | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M | High | UK 2006-2009 VMS indicates this activity is occurring over the feature, which is supported by UK 2009-2012 VMS Ping data indicating Nephrops ~150hrs effort over 4 yrs and Otter trawls identifying a maximum of ~515hrs effort over 4 yrs. Levels are High and occur across the extent of the feature located in the South East corner of the site.<br><br>EU fisheries demersal fisheries are present within the area, as outlined by aggregated VMS data 2006-2009 and VMS pings 2009-2013, although the levels are so low it would it could equally be considered to be attributable to non-fishing activities e.g. paying out & hauling nets, waiting out bad weather. | High |
| NG 14 A5.3 | Subtidal mud | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | L-M | High | UK 2006-2009 VMS indicates this activity is occurring over the feature, which is supported by UK 2009-2012 VMS Ping data indicating Nephrops ~150hrs effort over 4 yrs and Otter trawls identifying a maximum of ~515hrs effort over 4 yrs. Levels are High and occur across the extent of the feature located in the South East corner of the | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| | | | | | | site.<br><br>EU fisheries demersal fisheries are present within the area, as outlined by aggregated VMS data 2006-2009 and VMS pings 2009-2013, although the levels are so low it would it could equally be considered to be attributable to non-fishing activities e.g. paying out & hauling nets, waiting out bad weather. | |
| NG 14 HOCI 18 | Sea-pen and burrowing megafauna communities | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M | High | UK 2006-2009 VMS indicates this activity is occurring over the feature, which is supported by UK 2009-2012 VMS Ping data indicating Nephrops ~150hrs effort over 4 yrs and Otter trawls identifying a maximum of ~515hrs effort over 4 yrs. Levels are High and occur across the extent of the feature located in the South East corner of the site.<br><br>EU fisheries demersal fisheries are present within the area, as outlined by aggregated VMS data 2006-2009 and VMS pings 2009-2013, although the levels are so low it would it could equally be considered to be attributable to non-fishing activities e.g. paying out & hauling nets, waiting out bad weather. | High |
| NG 14 HOCI 18 | Sea-pen and burrowing megafauna communities | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | M | High | UK 2006-2009 VMS indicates this activity is occurring over the feature, which is supported by UK 2009-2012 VMS Ping data indicating Nephrops ~150hrs effort over 4 yrs and Otter trawls identifying a maximum of ~515hrs effort over 4 yrs. Levels are High and occur across the extent of the feature located in the South East corner of the site.<br><br>EU fisheries demersal fisheries are present within the area, as outlined by aggregated VMS data 2006-2009 and VMS pings 2009-2013, although the levels are so low it would it could equally be considered to be attributable to non-fishing activities e.g. paying out & hauling nets, waiting out bad weather. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| NG 14 HOCI 18 | Sea-pen and burrowing megafauna communities | Removal of target species (lethal) | Fishing - benthic trawling | M | High | UK 2006-2009 VMS indicates this activity is occurring over the feature, which is supported by UK 2009-2012 VMS Ping data indicating Nephrops ~150hrs effort over 4 yrs and Otter trawls identifying a maximum of ~515hrs effort over 4 yrs. Levels are High and occur across the extent of the feature located in the South East corner of the site.<br><br>EU fisheries demersal fisheries are present within the area, as outlined by aggregated VMS data 2006-2009 and VMS pings 2009-2013, although the levels are so low it would it could equally be considered to be attributable to non-fishing activities e.g. paying out & hauling nets, waiting out bad weather. | High |
| NG 14 HOCI 18 | Sea-pen and burrowing megafauna communities | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | UK 2006-2009 VMS indicates this activity is occurring over the feature, which is supported by UK 2009-2012 VMS Ping data indicating Nephrops ~150hrs effort over 4 yrs and Otter trawls identifying a maximum of ~515hrs effort over 4 yrs. Levels are High and occur across the extent of the feature located in the South East corner of the site.<br><br>EU fisheries demersal fisheries are present within the area, as outlined by aggregated VMS data 2006-2009 and VMS pings 2009-2013, although the levels are so low it would it could equally be considered to be attributable to non-fishing activities e.g. paying out & hauling nets, waiting out bad weather. | High |
| NG 14 SOCI 3 | Ocean quahog (*Arctica islandica*) | Removal of non-target species (lethal) | Fishing - benthic trawling | H | High | UK 2006-2009 VMS indicates this activity is occurring over the feature, which is supported by UK 2009-2012 VMS Ping data indicating Nephrops ~150hrs effort over 4 yrs and Otter trawls identifying a maximum of ~515hrs effort over 4 yrs. Levels are High and occur across the extent of the feature located in the South East corner of the site. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| | | | | | | EU fisheries demersal fisheries are present within the area, as outlined by aggregated VMS data 2006-2009 and VMS pings 2009-2013, although the levels are so low it would it could equally be considered to be attributable to non-fishing activities e.g. paying out & hauling nets, waiting out bad weather. | |
| NG 14 SOCI 3 | Ocean quahog (*Arctica islandica*) | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | UK 2006-2009 VMS indicates this activity is occurring over the feature, which is supported by UK 2009-2012 VMS Ping data indicating Nephrops ~150hrs effort over 4 yrs and Otter trawls identifying a maximum of ~515hrs effort over 4 yrs. Levels are High and occur across the extent of the feature located in the South East corner of the site.<br><br>EU fisheries demersal fisheries are present within the area, as outlined by aggregated VMS data 2006-2009 and VMS pings 2009-2013, although the levels are so low it would it could equally be considered to be attributable to non-fishing activities e.g. paying out & hauling nets, waiting out bad weather.. | High |
| NG 04 HOCI 13 | Mud habitats in deep water | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | UK 2006-2009 VMS indicates this activity is occurring over the feature, which is supported by UK 2009-2012 VMS Ping data indicating Nephrops ~150hrs effort over 4 yrs and Otter trawls identifying a maximum of ~515hrs effort over 4 yrs. Levels are High and occur across the extent of the feature located in the South East corner of the site.<br><br>EU fisheries demersal fisheries are present within the area, as outlined by aggregated VMS data 2006-2009 and VMS pings 2009-2013, although the levels are so low it would it could equally be considered to be attributable to non-fishing activities e.g. paying out & hauling nets, waiting out bad weather. | High |
| NG 04 | Mud habitats in deep water | Removal of non-target species (lethal) | Fishing - benthic trawling | H | High | UK 2006-2009 VMS indicates this activity is occurring over the feature, which is supported by UK 2009-2012 VMS Ping data indicating | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| HOCI 13 | | | | | | Nephrops ~150hrs effort over 4 yrs and Otter trawls identifying a maximum of ~515hrs effort over 4 yrs. Levels are High and occur across the extent of the feature located in the South East corner of the site.<br><br>EU fisheries demersal fisheries are present within the area, as outlined by aggregated VMS data 2006-2009 and VMS pings 2009-2013, although the levels are so low it would it could equally be considered to be attributable to non-fishing activities e.g. paying out & hauling nets, waiting out bad weather. | |
| NG 04 HOCI 13 | Mud habitats in deep water | Removal of target species (lethal) | Fishing - benthic trawling | L | High | UK 2006-2009 VMS indicates this activity is occurring over the feature, which is supported by UK 2009-2012 VMS Ping data indicating Nephrops ~150hrs effort over 4 yrs and Otter trawls identifying a maximum of ~515hrs effort over 4 yrs. Levels are High and occur across the extent of the feature located in the South East corner of the site.<br><br>EU fisheries demersal fisheries are present within the area, as outlined by aggregated VMS data 2006-2009 and VMS pings 2009-2013, although the levels are so low it would it could equally be considered to be attributable to non-fishing activities e.g. paying out & hauling nets, waiting out bad weather. | Moderate |

## Table 154: Fulmar rMCZ Vulnerability Assessment

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| NG 17 A5.1 | Subtidal coarse sediment | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | NS-H | Low | Fishing effort >15m:<br>EU beam and demersal 2006 -2009 overlaps with the east of the site max 87hrs .<br>EU pings 2009-2013 indentifies that bottom contacting gear is continuing at a low level within this area. It also shows that there is | Moderate |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| | | | | | | very limited activity down, the along the western edge of the site<br>UK 2006-2009 identifies minimal activity across the extent of the feature, which bottom contacting gears totalling 20-30hrs each.<br>UK VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site. | |
| NG 17 HOCI 13 | Mud habitats in deep water | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | Low | Fishing effort >15m:<br>EU beam and demersal 2006 -2009 overlaps the East of the site max 87hrs<br>EU pings 2009-2013 indentifies that bottom contacting gear is continuing at a low level within this area. It also shows the that there is very limited activity down, the along the western edge of the site<br>UK 2006-2009 identifies activity in the form of pair and otter trawls up to 68hrs in the east of the site, up to 55hrs in central areas and less than 10 hrs commonly recorded in the western areas of the site.<br>New VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site, negligible activity in the West and no activity in the central area. | Moderate |
| NG 17 HOCI 13 | Mud habitats in deep water | Removal of non-target species (lethal) | Fishing - benthic trawling | H | Low | Fishing effort >15m:<br>EU beam and demersal 2006 -2009 overlaps the East of the site max 87hrs<br>EU pings 2009-2013 indentifies that bottom contacting gear is continuing at a low level within this area. It also shows the that there is very limited activity down, the along the western edge of the site<br>UK 2006-2009 identifies activity in the form of pair and otter trawls up to 68hrs in the east of the site, up to 55hrs in central areas and less than 10 hrs commonly recorded in the western areas of the site.<br>New VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site, negligible activity in the West and no activity in the central area. | Moderate |

## Table 155: Greater Haig Fras rMCZ Vulnerability Assessment

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 05 A5.1 | Subtidal coarse sediment | Removal of non-target species (lethal) | Fishing - benthic trawling | NS-M | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data | High |
| FS 05 A5.1 | Subtidal coarse sediment | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | L-M | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data | High |
| FS 05 A5.1 | Subtidal coarse sediment | Structural abrasion/penetration: Structural damage to seabed >25mm | Fishing - benthic trawling | L-M | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data | High |
| FS 05 A5.1 | Subtidal coarse sediment | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | NS-H | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data | High |
| FS 05 A5.1 | Subtidal coarse sediment | Surface abrasion: damage to seabed surface features | Fishing - set netting | NS-H | Low | UK set gillnets and trammel net activity at a low level (unknown effort) primarily around Haig Fras and the north and west of site. Trammel net activity just in East of site over the edge of the Haig Fras rock complex on subtidal sand/coarse sediment, and could possibly be a very recent development. Some UK and EU hook line fishing occurring but at very | Moderate |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| | | | | | | low levels / insufficient data available to assess effort. | |
| FS 05 A5.2 | Subtidal sand | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | NS-M | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data | High |
| FS 05 A5.2 | Subtidal sand | Removal of non-target species (lethal) | Fishing - benthic trawling | NS-M | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data | High |
| FS 05 A5.2 | Subtidal sand | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | NS-M | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data | High |
| FS 05 A5.3 | Subtidal mud | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data | High |
| FS 05 A5.3 | Subtidal mud | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| | | | | | | yearly. UK effort also corroborated by VMS data | |
| FS 05 A5.3 | Subtidal mud | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | L-M | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data | High |
| FS 05 A5.4 | Subtidal mixed sediments | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data | High |
| FS 05 A5.4 | Subtidal mixed sediments | Water clarity changes | Fishing - benthic trawling | NS-M | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data | High |
| FS 05 A5.4 | Subtidal mixed sediments | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | M | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data | High |
| FS 05 A5.4 | Subtidal mixed sediments | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| | | | | | | yearly. UK effort also corroborated by VMS data | |
| FS 05 A5.4 | Subtidal mixed sediments | Removal of target species (lethal) | Fishing - benthic trawling | L | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates where Atrina fragilis is seen to occur (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data | Moderate |
| FS 05 HOCI 13 | Mud habitats in deep water | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data | FS 05 HOCI 13 |
| FS 05 HOCI 13 | Mud habitats in deep water | Removal of non-target species (lethal) | Fishing - benthic trawling | H | High | UK set gillnets and trammel net activity at a low level (unknown effort) primarily around Haig Fras and the north and west of site. Trammel net activity just in East of site over the edge of the Haig Fras rock complex on subtidal sand/coarse sediment, and could possibly be a very recent development. Some UK and EU hook line fishing occurring but at very low levels / insufficient data available to assess effort. | FS 05 HOCI 13 |
| FS 05 HOCI 13 | Mud habitats in deep water | Removal of non-target species (lethal) | Fishing - set netting | H | Low | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data | FS 05 HOCI 13 |
| FS 05 SOCI_05 | Fan mussel (*Atrina fragilis*) | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | UK set gillnets and trammel net activity at a low level (unknown effort) primarily around Haig Fras and the north and west of site. Trammel net activity just in East of site over the edge of the Haig Fras rock complex on subtidal sand/coarse sediment, and could possibly be a very recent | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| | | | | | | development. Some UK and EU hook line fishing occurring but at very low levels / insufficient data available to assess effort. | |
| FS 05 SOCI_05 | Fan mussel (*Atrina fragilis*) | Removal of non-target species (lethal) | Fishing - set netting | H | Low | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates where Atrina fragilis is seen to occur (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data. | Moderate |
| FS 05 SOCI_05 | Fan mussel (*Atrina fragilis*) | Removal of non-target species (lethal) | Fishing - benthic trawling | H | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates where *Atrina fragilis* is seen to occur (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data, | High |
| FS 05 SOCI_05 | Fan mussel (*Atrina fragilis*) | Water clarity changes | Fishing - benthic trawling | M | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates where Atrina fragilis is seen to occur (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data. | High |
| FS 05 SOCI_05 | Fan mussel (*Atrina fragilis*) | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | M | High | EU demersal trawling activity high across the site, primarily on subtidal mud or mixed sediment substrates (Values typically exceeding 1000 hrs over 3 years across site and maximum of 1472 hrs per grid). Recent (2009 – 2013) VMS ping data from non-UK vessels also shows high effort across the site with bottom mobile gear effort increasing yearly. UK effort also corroborated by VMS data | High |

## Table 156: Mid St Georges Channel rMCZ Vulnerability Assessment

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| ISCZ 04 A5.1 | Subtidal coarse sediment | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | NS-H | Low | There is very little if any UK benthic fishing in the site. Non-UK VMS data shows evidence of Low amounts (<100 hrs a year '06-'13) of EU (Belgian) beam trawling and bottom gear over this feature in the south east of the site. Occurrence of EU (Belgian) beam trawling and bottom gear activity over this feature is confirmed by VMS pings data ('09-'13). | Moderate |

## Table 157: Mud Hole rMCZ Vulnerability Assessment

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| ISCZ 01 A5.3 | Subtidal mud | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | VMS strongly supports this. Fishing effort >15m fleet is high: maximum of 2394 hrs UK Nephrops in a single VMS grid (max over '06-'09) & typically over 1400 hrs. Some low level otter, and very low dredges & EU demersal. Therefore assessed as highly vulnerable to the following pressures: removal of target & non-target species & shallow & surface abrasion. | High |
| ISCZ 01 A5.3 | Subtidal mud | Removal of target species (lethal) | Fishing - benthic trawling | NS-M | High | VMS strongly supports this. Fishing effort >15m fleet is high: 2394 hrs UK Nephrops (max over '06-'09) & typically over 1400 hrs. Therefore assessed as highly vulnerable to removal of target species | High |
| ISCZ 01 A5.3 | Subtidal mud | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M | High | VMS strongly supports this. Fishing effort >15m fleet is high: 2394 hrs UK Nephrops (max over '06-'09) & typically over 1400 hrs. Some low level otter, and very low dredges & EU demersal. Therefore assessed as mod-highly vulnerable to the following pressures: removal of target & non-target species & shallow & surface abrasion. | High |
| ISCZ 01 HOCI 13 | Mud habitats in deep water | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | VMS strongly supports this. Fishing effort >15m fleet is high: 2394 hrs UK Nephrops (max over '06-'09) & typically over 1400 hrs. Some low level otter, and very low dredges & EU demersal. Therefore assessed as mod-highly vulnerable to the following pressures: removal of target & non-target species & shallow & surface abrasion. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| ISCZ 01 HOCI 13 | Mud habitats in deep water | Removal of non-target species (lethal) | Fishing - benthic trawling | H | Low | VMS strongly supports this. Fishing effort >15m fleet is high: 2394 hrs UK Nephrops (max over '06-'09) & typically over 1400 hrs. Some low level otter, and very low dredges & EU demersal. Therefore assessed as moderately vulnerable to this pressure | Moderate |
| ISCZ 01 HOCI 13 | Mud habitats in deep water | Removal of target species (lethal) | Fishing - benthic trawling | L | High | VMS strongly supports this. Fishing effort >15m fleet is high: 2394 hrs UK Nephrops (max over '06-'09) & typically over 1400 hrs. Therefore assessed as highly vulnerable to removal of target species | Moderate |
| ISCZ 01 HOCI 18 | Sea-pen and burrowing megafauna communities | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M | High | VMS strongly supports this. Fishing effort >15m fleet is high: 2394 hrs UK Nephrops (max over '06-'09) & typically over 1400 hrs. Some low level otter, and very low dredges & EU demersal. Therefore assessed as mod-highly vulnerable to the following pressures: removal of target & non-target species & shallow & surface abrasion. | High |
| ISCZ 01 HOCI 18 | Sea-pen and burrowing megafauna communities | Removal of target species (lethal) | Fishing - benthic trawling | M | High | VMS strongly supports this. Fishing effort >15m fleet is high: 2394 hrs UK Nephrops (max over '06-'09) & typically over 1400 hrs. Some low level otter, and very low dredges & EU demersal. Therefore assessed as mod-highly vulnerable to the following pressures: removal of target & non-target species & shallow & surface abrasion. | High |
| ISCZ 01 HOCI 18 | Sea-pen and burrowing megafauna communities | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | VMS strongly supports this. Fishing effort >15m fleet is high: 2394 hrs UK Nephrops (max over '06-'09) & typically over 1400 hrs. Some low level otter, and very low dredges & EU demersal. Therefore assessed as mod-highly vulnerable to the following pressures: removal of target & non-target species & shallow & surface abrasion. | High |

## Table 158: North St Georges Channel rMCZ Vulnerability Assessment

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| ISCZ 03 A5.1 | Subtidal coarse sediment | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | NS-H | Low | UK bottom Otter trawl activity achieving a maximum of 20 hrs over 4 years in aggregated grid data. UK beam trawl activity at 14 hrs over 4 years with slightly increased effort over recent years in south. EU aggregated demersal trawling activity reaches a maximum of 125 hrs over 3 years, primarily in the southern region of the site. EU beam trawling reaches a maximum of 136 hrs over 3 years on the coarse sediment feature, and 345 hours over sand. | Moderate |
| ISCZ 03 A5.4 | Subtidal mixed sediments | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | Low | UK bottom Otter trawl activity achieving a maximum of 20 hrs over 4 years in aggregated grid data. UK beam trawl activity at 14 hrs over 4 years with slightly increased effort over recent years in south. EU aggregated demersal trawling activity reaches a maximum of 125 hrs over 3 years, primarily in the southern region of the site. EU beam trawling reaches a maximum of 345 hours over 3 year in the site, however the activity does not appear to occur directly over this feature. | Moderate |

## Table 159: North-West of Jones Bank rMCZ Vulnerability Assessment

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 04 A5.1 | Subtidal coarse sediment | Removal of non-target species (lethal) | Fishing - benthic trawling | NS-M | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs per VMS grid over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |
| FS 04 A5.1 | Subtidal coarse sediment | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | L-M | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs per VMS grid over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 04 A5.1 | Subtidal coarse sediment | Structural abrasion/penetration: Structural damage to seabed >25mm | Fishing - benthic trawling | L-M | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs per VMS grid over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |
| FS 04 A5.1 | Subtidal coarse sediment | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | NS-H | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |
| FS 04 A5.1 | Subtidal coarse sediment | Surface abrasion: damage to seabed surface features | Fishing - set netting | NS-H | Low | Extremely low UK net fishery activity at a maximum of 4 hrs over 4years, likely indicating just transit of vessels. No apparent EU fishery activity. | Moderate |
| FS 04 A5.2 | Subtidal sand | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | NS-M | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |
| FS 04 A5.2 | Subtidal sand | Removal of non-target species (lethal) | Fishing - benthic trawling | NS-M | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |
| FS 04 A5.2 | Subtidal sand | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | NS-M | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |
| FS 04 A5.3 | Subtidal mud | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |
| FS 04 A5.3 | Subtidal mud | Removal of target species (lethal) | Fishing - benthic trawling | NS-M | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Nephrops fishery likely in the area. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 04 A5.3 | Subtidal mud | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |
| FS 04 A5.3 | Subtidal mud | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | L-M | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |
| FS 04 A5.4 | Subtidal mixed sediments | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |
| FS 04 A5.4 | Subtidal mixed sediments | Water clarity changes | Fishing - benthic trawling | NS-M | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |
| FS 04 A5.4 | Subtidal mixed sediments | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | M | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |
| FS 04 A5.4 | Subtidal mixed sediments | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |
| FS 04 HOCI 13 | Mud habitats in deep water | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |
| FS 04 HOCI 13 | Mud habitats in deep water | Removal of non-target species (lethal) | Fishing - benthic trawling | H | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 04 HOCI 13 | Mud habitats in deep water | Removal of non-target species (lethal) | Fishing - set netting | H | Low | Extremely low UK net fishery activity at a maximum of 4 hrs over 4 years, likely indicating just transit of vessels. No apparent EU fishery activity. | Moderate |
| FS 04 HOCI 13 | Mud habitats in deep water | Removal of target species (lethal) | Fishing - benthic trawling | L | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Nephrops fishery likely in the area | Moderate |
| FS 04 HOCI 18 | Sea-pen and burrowing megafauna communities | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |
| FS 04 HOCI 18 | Sea-pen and burrowing megafauna communities | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | M | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |
| FS 04 HOCI 18 | Sea-pen and burrowing megafauna communities | Removal of target species (lethal) | Fishing - benthic trawling | M | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Nephrops fishery likely in the area. | High |
| FS 04 HOCI 18 | Sea-pen and burrowing megafauna communities | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | EU aggregated demersal trawling activity reaches a maximum of 1642 hrs over 4 years, across the site. Likely Otter trawling and Nephrops fisheries. | High |

## Table 160: Offshore Brighton rMCZ Vulnerability Assessment

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| BS 14 A4.1 | High energy circalittoral rock | Water clarity changes | Fishing - benthic trawling | H* | Moderate | Fishing effort >15m: EU demersal 2006 -2009 the recorded over the presence of the feature identified in the 2012 surveys, max 275hrs. Continued activity confirmed by EU ping data 2009-2013.<br><br>UK 2006-2009 and VMS data 2009-2012 does not identify the activity as occurring over the feature. | High |
| BS 14 A4.1 | High energy circalittoral rock | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H* | Moderate | Fishing effort >15m: EU demersal 2006 -2009 the recorded over the presence of the feature identified in the 2012 surveys, max 275hrs. Continued activity confirmed by EU ping data 2009-2013.<br><br>UK 2006-2009 and VMS data 2009-2012 does not identify the activity as occurring over the feature. | High |
| BS 14 A4.1 | High energy circalittoral rock | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | H* | Moderate | Fishing effort >15m: EU demersal 2006 -2009 the recorded over the presence of the feature identified in the 2012 surveys, max 275hrs. Continued activity confirmed by EU ping data 2009-2013.<br><br>UK 2006-2009 and VMS data 2009-2012 does not identify the activity as occurring over the feature. | High |
| BS 14 A4.1 | High energy circalittoral rock | Removal of target species (lethal) | Fishing - benthic trawling | H* | Moderate | Fishing effort >15m: EU demersal 2006 -2009 the recorded over the presence of the feature identified in the 2012 surveys, max 275hrs. Continued activity confirmed by EU ping data 2009-2013.<br><br>UK 2006-2009 and VMS data 2009-2012 does not identify the activity as occurring over the feature. | Moderate |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| BS 14 A4.1 | High energy circalittoral rock | Removal of non-target species (lethal) | Fishing - benthic trawling | H* | Moderate | Fishing effort >15m: EU demersal 2006 -2009 the recorded over the presence of the feature identified in the 2012 surveys, max 275hrs. Continued activity confirmed by EU ping data 2009-2013.<br><br>UK 2006-2009 and VMS data 2009-2012 does not identify the activity as occurring over the feature. | Moderate |
| BS 14 A4.2 | Moderate energy circalittoral rock | Physical change (to another seabed type) | Fishing - hydraulic dredging | M-H | Low | Fishing effort >15m: EU dredge and UK Boat & Mechanised dredges 2006 -2009 are recorded across the site, with the highest levels located in the East of the site ~110hrs.<br>New VMS data 2009-2012 identifies the presence of Mechanised dredges, in very low abundance in the centre of the site, with greater density being located in the North East of the site. | Moderate |
| BS 14 A4.2 | Moderate energy circalittoral rock | Removal of non-target species (lethal) | Fishing - benthic trawling | M-H | High | Fishing effort >15m:<br>EU beam and demersal 2006 -2009 overlaps the areas where the presence was identified the presence of this feature, in the modelled extent of the feature outlined in the South Coast synthesis map. Activity is predominately demersal, with peak values in excess of 500hrs.<br>UK 2006-2009 identifies beam and otter trawling activity in the east and central areas of the site, although the levels are so low ~2hrs, it should be considered that there is insufficient information to confirm the activity of this fleet within the site.<br>New VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site and negligible activity in the West. | High |
| BS 14 A4.2 | Moderate energy circalittoral rock | Removal of non-target species (lethal) | Fishing – Hydraulic dredging | M-H | Low | Fishing effort >15m:<br>EU dredge and UK Boat & Mechanised dredges 2006 -2009 are recorded across the site, with the highest levels located in the East of the site ~110hrs.<br>New VMS data 2009-2012 identifies the presence of Mechanised dredges, in very low abundance in the centre of the site, with greater density being located in the North East of the site. | Moderate |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| BS 14 A4.2 | Moderate energy circalittoral rock | Removal of target species (lethal) | Fishing - benthic trawling | NS-M | High | Fishing effort >15m: EU beam and demersal 2006 -2009 overlaps the areas where the presence was identified the presence of this feature, in the modelled extent of the feature outlined in the South Coast synthesis map. Activity is predominately demersal, with peak values in excess of 500hrs. UK 2006-2009 identifies beam and otter trawling activity in the east and central areas of the site, although the levels are so low ~2hrs, it should be considered that there is insufficient information to confirm the activity of this fleet within the site. New VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site and negligible activity in the West. | High |
| BS 14 A4.2 | Moderate energy circalittoral rock | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M-H | High | Fishing effort >15m: EU beam and demersal 2006 -2009 overlaps the areas where the presence was identified the presence of this feature, in the modelled extent of the feature outlined in the South Coast synthesis map. Activity is predominately demersal, with peak values in excess of 500hrs. UK 2006-2009 identifies beam and otter trawling activity in the east and central areas of the site, although the levels are so low ~2hrs, it should be considered that there is insufficient information to confirm the activity of this fleet within the site. New VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site and negligible activity in the West. | High |
| BS 14 A4.2 | Moderate energy circalittoral rock | Siltation rate changes (high) | Fishing - hydraulic dredging | M-H | Low | Fishing effort >15m: EU dredge and UK Boat & Mechanised dredges 2006 -2009 are recorded across the site, with the highest levels located in the East of the site ~110hrs. New VMS data 2009-2012 identifies the presence of Mechanised dredges, in very low abundance in the centre of the site, with greater density being located in the North East of the site. | Moderate |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| BS 14 A4.2 | Moderate energy circalittoral rock | Siltation rate changes (high) | Fishing - hydraulic dredging | NS-H | Low | Fishing effort >15m: EU dredge and UK Boat & Mechanised dredges 2006 -2009 are recorded across the site, with the highest levels located in the East of the site ~110hrs. New VMS data 2009-2012 identifies the presence of Mechanised dredges, in very low abundance in the centre of the site, with greater density being located in the North East of the site. | Moderate |
| BS 14 A4.2 | Moderate energy circalittoral rock | Structural abrasion/penetration: Structural damage to seabed >25mm | Fishing - hydraulic dredging | M-H | Low | Fishing effort >15m: EU dredge and UK Boat & Mechanised dredges 2006 -2009 are recorded across the site, with the highest levels located in the East of the site ~110hrs. New VMS data 2009-2012 identifies the presence of Mechanised dredges, in very low abundance in the centre of the site, with greater density being located in the North East of the site. | Moderate |
| BS 14 A4.2 | Moderate energy circalittoral rock | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | L-H | High | Fishing effort >15m: EU beam and demersal 2006 -2009 overlaps the areas where the presence was identified the presence of this feature, in the modelled extent of the feature outlined in the South Coast synthesis map. Activity is predominately demersal, with peak values in excess of 500hrs. UK 2006-2009 identifies beam and otter trawling activity in the east and central areas of the site, although the levels are so low ~2hrs, it should be considered that there is insufficient information to confirm the activity of this fleet within the site. New VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site and negligible activity in the West. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| BS 14 A4.2 | Moderate energy circalittoral rock | Water clarity changes | Fishing - benthic trawling | NS-H | High | Fishing effort >15m:<br>EU beam and demersal 2006 -2009 overlaps the areas where the presence was identified the presence of this feature, in the modelled extent of the feature outlined in the South Coast synthesis map. Activity is predominately demersal, with peak values in excess of 500hrs.<br>UK 2006-2009 identifies beam and otter trawling activity in the east and central areas of the site, although the levels are so low ~2hrs, it should be considered that there is insufficient information to confirm the activity of this fleet within the site.<br>New VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site and negligible activity in the West. | High |
| BS 14 A4.2 | Moderate energy circalittoral rock | Water clarity changes | Fishing - hydraulic dredging | NS-H | Low | Fishing effort >15m:<br>EU dredge and UK Boat & Mechanised dredges 2006 -2009 are recorded across the site, with the highest levels located in the East of the site ~110hrs.<br>New VMS data 2009-2012 identifies the presence of Mechanised dredges, in very low abundance in the centre of the site, with greater density being located in the North East of the site. | Moderate |
| BS 14 A5.1 | Subtidal coarse sediment | Removal of non-target species (lethal) | Fishing - benthic trawling | NS-M | High | Fishing effort >15m:<br>EU beam and demersal 2006 -2009 overlaps the areas where the presence was identified the presence of this feature. Activity is predominately demersal, with peak values in excess of 500hrs.<br>UK 2006-2009 identifies beam and otter trawling activity in the east and central areas of the site, although the levels are so low ~2hrs, it should be considered that there is insufficient information to confirm the activity of this fleet within the site.<br>New VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site and negligible activity in the West. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| BS 14 A5.1 | Subtidal coarse sediment | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | L-M | High | Fishing effort >15m: EU beam and demersal 2006 -2009 overlaps the areas where the presence was identified the presence of this feature. Activity is predominately demersal, with peak values in excess of 500hrs. UK 2006-2009 identifies beam and otter trawling activity in the east and central areas of the site, although the levels are so low ~2hrs, it should be considered that there is insufficient information to confirm the activity of this fleet within the site. New VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site and negligible activity in the West. | High |
| BS 14 A5.1 | Subtidal coarse sediment | Structural abrasion/penetration: Structural damage to seabed >25mm | Fishing - benthic trawling | L-M | High | Fishing effort >15m: EU beam and demersal 2006 -2009 overlaps the areas where the presence was identified the presence of this feature. Activity is predominately demersal, with peak values in excess of 500hrs. UK 2006-2009 identifies beam and otter trawling activity in the east and central areas of the site, although the levels are so low ~2hrs, it should be considered that there is insufficient information to confirm the activity of this fleet within the site. New VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site and negligible activity in the West. | High |
| BS 14 A5.1 | Subtidal coarse sediment | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | NS-H | High | Fishing effort >15m: EU beam and demersal 2006 -2009 overlaps the areas where the presence was identified the presence of this feature. Activity is predominately demersal, with peak values in excess of 500hrs. UK 2006-2009 identifies beam and otter trawling activity in the east and central areas of the site, although the levels are so low ~2hrs, it should be considered that there is insufficient information to confirm the activity of this fleet within the site. New VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site and negligible activity in the West. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| BS 14 A5.4 | Subtidal mixed sediments | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | Fishing effort >15m:<br>EU beam and demersal 2006 -2009 overlaps the areas where the presence was identified the presence of this feature. Activity is predominately demersal, with peak values in excess of 500hrs.<br>UK 2006-2009 identifies beam and otter trawling activity in the east and central areas of the site, although the levels are so low ~2hrs, it should be considered that there is insufficient information to confirm the activity of this fleet within the site.<br>New VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site and negligible activity in the West. | High |
| BS 14 A5.4 | Subtidal mixed sediments | Structural abrasion/penetration: Structural damage to seabed >25mm | Fishing - hydraulic dredging | H | Low | Fishing effort >15m:<br>EU dredge and UK Boat & Mechanised dredges 2006 -2009 are recorded across the site, with the highest levels located in the East of the site ~110hrs.<br>New VMS data 2009-2012 identifies the presence of Mechanised dredges, in very low abundance in the centre of the site, with greater density being located in the North East of the site. | Moderate |
| BS 14 A5.4 | Subtidal mixed sediments | Physical change (to another seabed type) | Fishing - hydraulic dredging | H | Low | Fishing effort >15m:<br>EU dredge and UK Boat & Mechanised dredges 2006 -2009 are recorded across the site, with the highest levels located in the East of the site ~110hrs.<br>New VMS data 2009-2012 identifies the presence of Mechanised dredges, in very low abundance in the centre of the site, with greater density being located in the North East of the site. | Moderate |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| BS 14 A5.4 | Subtidal mixed sediments | Water clarity changes | Fishing - benthic trawling | NS-M | High | Fishing effort >15m: EU beam and demersal 2006 -2009 overlaps the areas where the presence was identified the presence of this feature. Activity is predominately demersal, with peak values in excess of 500hrs. UK 2006-2009 identifies beam and otter trawling activity in the east and central areas of the site, although the levels are so low ~2hrs, it should be considered that there is insufficient information to confirm the activity of this fleet within the site. New VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site and negligible activity in the West. | High |
| BS 14 A5.4 | Subtidal mixed sediments | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | M | High | Fishing effort >15m: EU beam and demersal 2006 -2009 overlaps the areas where the presence was identified the presence of this feature. Activity is predominately demersal, with peak values in excess of 500hrs. UK 2006-2009 identifies beam and otter trawling activity in the east and central areas of the site, although the levels are so low ~2hrs, it should be considered that there is insufficient information to confirm the activity of this fleet within the site. New VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site and negligible activity in the West. | High |
| BS 14 A5.4 | Subtidal mixed sediments | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | Fishing effort >15m: EU beam and demersal 2006 -2009 overlaps the areas where the presence was identified the presence of this feature. Activity is predominately demersal, with peak values in excess of 500hrs. UK 2006-2009 identifies beam and otter trawling activity in the east and central areas of the site, although the levels are so low ~2hrs, it should be considered that there is insufficient information to confirm the activity of this fleet within the site. New VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site and negligible activity in the West. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| BS 14 A5.4 | Subtidal mixed sediments | Removal of target species (lethal) | Fishing - benthic trawling | L | High | Fishing effort >15m:<br>EU beam and demersal 2006 -2009 overlaps the areas where the presence was identified the presence of this feature. Activity is predominately demersal, with peak values in excess of 500hrs.<br>UK 2006-2009 identifies beam and otter trawling activity in the east and central areas of the site, although the levels are so low ~2hrs, it should be considered that there is insufficient information to confirm the activity of this fleet within the site.<br>New VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site and negligible activity in the West. | Moderate |

## Table 161: Offshore Overfalls rMCZ Vulnerability Assessment

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| BS 17 A5.1 | Subtidal coarse sediment | Removal of non-target species (lethal) | Fishing - benthic trawling | NS-M | High | VMS indicates moderate levels of mechanised dredging (max 198 hrs, per VMS grid typically over 100hrs '06-'09) and moderate levels of beam trawling (max 143 hrs '06-'09) in the north east of the site by the UK >15m Fleet.<br>Aggregated VMS data shows high levels of demersal fishing (max 755 hrs, typically over 400 hrs '06-09) and moderate levels of beam trawling (max 168 hrs, typically over 50 hrs '06-'09)and dredging (max 136 hrs typically over 50 hrs '06-'09) from the EU >15m Fleet.<br>Ping data ('09-'13) confirms this activity is happening in the vicinity of the feature. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| BS 17 A5.1 | Subtidal coarse sediment | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | L-M | High | VMS indicates moderate levels of mechanised dredging (max 198 hrs, typically over 100hrs '06-'09) and moderate levels of beam trawling (max 143 hrs '06-'09) in the north east of the site by the UK >15m Fleet. Aggregated VMS data shows high levels of demersal fishing (max 755 hrs, typically over 400 hrs '06-09) and moderate levels of beam trawling (max 168 hrs, typically over 50 hrs '06-'09)and dredging (max 136 hrs typically over 50 hrs '06-'09) from the EU >15m Fleet. Ping data ('09-'13) confirms this activity is happening in the vicinity of the feature. | High |
| BS 17 A5.1 | Subtidal coarse sediment | Structural abrasion/penetration: Structural damage to seabed >25mm | Fishing - benthic trawling | L-M | High | VMS indicates moderate levels of mechanised dredging (max 198 hrs, typically over 100hrs '06-'09) and moderate levels of beam trawling (max 143 hrs '06-'09) in the north east of the site by the UK >15m Fleet. Aggregated VMS data shows high levels of demersal fishing (max 755 hrs, typically over 400 hrs '06-09) and moderate levels of beam trawling (max 168 hrs, typically over 50 hrs '06-'09)and dredging (max 136 hrs typically over 50 hrs '06-'09) from the EU >15m Fleet. Ping data ('09-'13) confirms this activity is happening in the vicinity of the feature. | High |
| BS 17 A5.1 | Subtidal coarse sediment | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | NS-H | High | VMS indicates moderate levels of mechanised dredging (max 198 hrs, typically over 100hrs '06-'09) and moderate levels of beam trawling (max 143 hrs '06-'09) in the north east of the site by the UK >15m Fleet. Aggregated VMS data shows high levels of demersal fishing (max 755 hrs, typically over 400 hrs '06-09) and moderate levels of beam trawling (max 168 hrs, typically over 50 hrs '06-'09)and dredging (max 136 hrs typically over 50 hrs '06-'09) from the EU >15m Fleet. Ping data ('09-'13) confirms this activity is happening in the vicinity of the feature. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| BS 17 A5.2 | Subtidal sand | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | NS-M | Moderate | VMS indicates moderate to high levels of mechanised dredging (max 325 hrs, typically over 100hrs '06-'09) and low levels of beam trawling (max 46 hrs '06-'09) in the north east of the site by the UK >15m Fleet. Aggregated VMS data shows moderate to high levels of demersal fishing (max 350 hrs, typically over 100 hrs '06-09) and low levels of beam trawling (typically over 50 hrs '06-'09)and dredging (typically over 50 hrs '06-'09) from the EU >15m Fleet. Ping data ('09-'13) confirms this activity is happening in the vicinity of the feature. | Moderate |
| BS 17 A5.2 | Subtidal sand | Removal of non-target species (lethal) | Fishing - benthic trawling | NS-M | Moderate | VMS indicates moderate to high levels of mechanised dredging (max 325 hrs, typically over 100hrs '06-'09) and low levels of beam trawling (max 46 hrs '06-'09) in the north east of the site by the UK >15m Fleet. Aggregated VMS data shows moderate to high levels of demersal fishing (max 350 hrs, typically over 100 hrs '06-09) and low levels of beam trawling (typically over 50 hrs '06-'09)and dredging (typically over 50 hrs '06-'09) from the EU >15m Fleet. | Moderate |
| BS 17 A5.2 | Subtidal sand | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | NS-M | Moderate | VMS indicates moderate to high levels of mechanised dredging (max 325 hrs, typically over 100hrs '06-'09) and low levels of beam trawling (max 46 hrs '06-'09) in the north east of the site by the UK >15m Fleet. Aggregated VMS data shows moderate to high levels of demersal fishing (max 350 hrs, typically over 100 hrs '06-09) and low levels of beam trawling (typically over 50 hrs '06-'09)and dredging (typically over 50 hrs '06-'09) from the EU >15m Fleet. Ping data ('09-'13) confirms this activity is happening in the vicinity of the feature. | Moderate |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| BS 17 A5.4 | Subtidal mixed sediments | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | VMS indicates moderate to high levels of mechanised dredging (max 325 hrs, typically over 100hrs '06-'09) and moderate levels of beam trawling (max 143 hrs '06-'09) in the north east of the site by the UK >15m Fleet. Aggregated VMS data shows moderate to high levels of demersal fishing (max 666 hrs, typically over 300 hrs '06-09) and low levels of beam trawling (max 136 hrs, typically over 50 hrs '06-'09)and dredging (typically over 50 hrs '06-'09) from the EU >15m Fleet. Ping data ('09-'13) confirms this activity is happening in the vicinity of the feature. | High |
| BS 17 A5.4 | Subtidal mixed sediments | Water clarity changes | Fishing - benthic trawling | NS-M | High | VMS indicates moderate to high levels of mechanised dredging (max 325 hrs, typically over 100hrs '06-'09) and moderate levels of beam trawling (max 143 hrs '06-'09) in the north east of the site by the UK >15m Fleet. Aggregated VMS data shows moderate to high levels of demersal fishing (max 666 hrs, typically over 300 hrs '06-09) and low levels of beam trawling (max 136 hrs, typically over 50 hrs '06-'09)and dredging (typically over 50 hrs '06-'09) from the EU >15m Fleet. Ping data ('09-'13) confirms this activity is happening in the vicinity of the feature. | High |
| BS 17 A5.4 | Subtidal mixed sediments | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | M | High | VMS indicates moderate to high levels of mechanised dredging (max 325 hrs, typically over 100hrs '06-'09) and moderate levels of beam trawling (max 143 hrs '06-'09) in the north east of the site by the UK >15m Fleet. Aggregated VMS data shows moderate to high levels of demersal fishing (max 666 hrs, typically over 300 hrs '06-09) and low levels of beam trawling (max 136 hrs, typically over 50 hrs '06-'09)and dredging (typically over 50 hrs '06-'09) from the EU >15m Fleet. Ping data ('09-'13) confirms this activity is happening in the vicinity of the feature. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| BS 17 A5.4 | Subtidal mixed sediments | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | VMS indicates moderate to high levels of mechanised dredging (max 325 hrs, typically over 100hrs '06-'09) and moderate levels of beam trawling (max 143 hrs '06-'09) in the north east of the site by the UK >15m Fleet. Aggregated VMS data shows moderate to high levels of demersal fishing (max 666 hrs, typically over 300 hrs '06-09) and low levels of beam trawling (max 136 hrs, typically over 50 hrs '06-'09)and dredging (typically over 50 hrs '06-'09) from the EU >15m Fleet. Ping data ('09-'13) confirms this activity is happening in the vicinity of the feature. | High |
| BS 17 A5.4 | Subtidal mixed sediments | Removal of target species (lethal) | Fishing - benthic trawling | L | High | VMS indicates moderate to high levels of mechanised dredging (max 325 hrs, typically over 100hrs '06-'09) and moderate levels of beam trawling (max 143 hrs '06-'09) in the north east of the site by the UK >15m Fleet. Aggregated VMS data shows moderate to high levels of demersal fishing (max 666 hrs, typically over 300 hrs '06-09) and low levels of beam trawling (max 136 hrs, typically over 50 hrs '06-'09)and dredging (typically over 50 hrs '06-'09) from the EU >15m Fleet. Ping data ('09-'13) confirms this activity is happening in the vicinity of the feature. | Moderate |

## Table 162: Slieve Na Griddle rMCZ Vulnerability Assessment

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| ISCZ 07 A5.3 | Subtidal mud | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | Data shows a maximum of 2424 hours of Nephrops trawls per VMS grid over 4 years across the feature from 2006 - 2009 UK VMS data. 2009 - 2012 VMS ping data supports this showing widespread, high density effort. There is no evidence of non UK effort | High |
| ISCZ 07 A5.3 | Subtidal mud | Removal of target species (lethal) | Fishing - benthic trawling | NS-M | High | Data shows a maximum of 2424 hours of Nephrops trawls (i.e. targeted removal of mud burrowing species) over 4 years across the feature from 2006 - 2009 UK VMS data. 2009 - 2012 VMS ping data supports this showing widespread, high density effort. There is no evidence of non UK effort | High |
| ISCZ 07 A5.3 | Subtidal mud | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M | High | Data shows a maximum of 2424 hours of Nephrops trawls over 4 years across the feature from 2006 - 2009 UK VMS data. 2009 - 2012 VMS ping data supports this showing widespread, high density effort. There is no evidence of non UK effort | High |
| ISCZ 07 A5.3 | Subtidal mud | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | L-M | High | Data shows a maximum of 2424 hours of Nephrops trawls over 4 years across the feature from 2006 - 2009 UK VMS data. 2009 - 2012 VMS ping data supports this showing widespread, high density effort. There is no evidence of non UK effort | High |
| ISCZ 07 HOCI 13 | Mud habitats in deep water | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | Data shows a maximum of 2424 hours of Nephrops trawls over 4 years across the feature from 2006 - 2009 UK VMS data. 2009 - 2012 VMS ping data supports this showing widespread, high density effort. There is no evidence of non UK effort | High |
| ISCZ 07 HOCI 13 | Mud habitats in deep water | Removal of non-target species (lethal) | Fishing - benthic trawling | H | High | Data shows a maximum of 2424 hours of Nephrops trawls over 4 years across the feature from 2006 - 2009 UK VMS data. 2009 - 2012 VMS ping data supports this showing widespread, high density effort. There is no evidence of non UK effort | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| ISCZ 07 HOCI 18 | Sea-pen and burrowing megafauna communities | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M | High | Data shows a maximum of 2424 hours of Nephrops trawls over 4 years across the feature from 2006 - 2009 UK VMS data. 2009 - 2012 VMS ping data supports this showing widespread, high density effort. There is no evidence of non UK effort | High |
| ISCZ 07 HOCI 18 | Sea-pen and burrowing megafauna communities | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | M | High | Data shows a maximum of 2424 hours of Nephrops trawls over 4 years across the feature from 2006 - 2009 UK VMS data. 2009 - 2012 VMS ping data supports this showing widespread, high density effort. There is no evidence of non UK effort | High |
| ISCZ 07 HOCI 18 | Sea-pen and burrowing megafauna communities | Removal of target species (lethal) | Fishing - benthic trawling | M | High | Data shows a maximum of 2424 hours of Nephrops trawls over 4 years across the feature from 2006 - 2009 UK VMS data. 2009 - 2012 VMS ping data supports this showing widespread, high density effort. There is no evidence of non UK effort | High |
| ISCZ 07 HOCI 18 | Sea-pen and burrowing megafauna communities | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | Data shows a maximum of 2424 hours of Nephrops trawls over 4 years across the feature from 2006 - 2009 UK VMS data. 2009 - 2012 VMS ping data supports this showing widespread, high density effort. There is no evidence of non UK effort | High |

## Table 163: South of Celtic Deep rMCZ Vulnerability Assessment

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 12 A5.1 | Subtidal coarse sediment | Removal of non-target species (lethal) | Fishing - benthic trawling | NS-M | Moderate | There is very little if any UK benthic fishing in the site. VMS indicates moderate to high EU fishing effort by the >15 demersal fleet (based on >248 hrs demersal fishing and 115 hrs beam trawling 06-09) over the Feature. | Moderate |
| FS 12 A5.1 | Subtidal coarse sediment | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | L-M | Moderate | There is very little if any UK benthic fishing in the site. VMS indicates moderate to high EU fishing effort by the >15 demersal fleet (based on >248 hrs demersal fishing and 115 hrs beam trawling per VMS grid 06-09) over the feature. | Moderate |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 12 A5.1 | Subtidal coarse sediment | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | NS-H | Moderate | EU demersal moderate coverage, and moderate effort. EU and UK beam high coverage of feature, but very low effort. VMS data EU demersal effort (200-400 hrs 06-09) over feature | Moderate |
| FS 12 A5.2 | Subtidal sand | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | NS-M | Moderate | There is very little if any UK benthic fishing in the site. VMS data indicates moderate to high levels EU demersal fishing effort (<235 hrs demersal (otter) trawling and 122 hrs beam trawling 06-09) by the >15 demersal fleet over the feature. | Moderate |
| FS 12 A5.2 | Subtidal sand | Removal of non-target species (lethal) | Fishing - benthic trawling | NS-M | Moderate | There is very little if any UK benthic fishing in the site. VMS data indicates moderate to high levels EU demersal fishing effort (<235 hrs demersal (otter) trawling and 122 hrs beam trawling 06-09) by the >15 demersal fleet over the feature. | Moderate |
| FS 12 A5.2 | Subtidal sand | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | NS-M | Moderate | There is very little if any UK benthic fishing in the site. VMS data indicates moderate to high levels EU demersal fishing effort (<235 hrs demersal (otter) trawling and 122 hrs beam trawling 06-09) by the >15 demersal fleet over the feature. | Moderate |
| FS 12 A5.4 | Subtidal mixed sediments | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | There is very little if any UK benthic fishing in the site. VMS data indicates high levels EU demersal fishing effort (up to 574 hrs demersal (otter) trawling and over 100 hrs of beam trawling occurring 06-09) by the >15 demersal fleet over the feature. | High |
| FS 12 A5.4 | Subtidal mixed sediments | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | M | High | There is very little if any UK benthic fishing in the site. VMS data indicates high levels EU demersal fishing effort ( up to 574 hrs demersal (otter) trawling and over 100 hrs of beam trawling occurring 06-09) by the <15 demersal fleet over the feature. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 12 A5.4 | Subtidal mixed sediments | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | There is very little if any UK benthic fishing in the site. VMS data indicates high levels EU demersal fishing effort ( up to 574 hrs demersal (otter) trawling and over 100 hrs of beam trawling occurring 06-09) by the >15 demersal fleet over the Feature. | High |
| FS 12 SOCI 3 | Ocean quahog (*Arctica islandica*) | Removal of non-target species (lethal) | Fishing - benthic trawling | H | Low | There is very little if any UK benthic fishing in the site. VMS data indicates low levels EU demersal fishing (up to 20 hrs '06-'09) and Beam trawling (up to 72hrs '06-'09) by the >15 demersal fleet in the vicinity of the Feature. | Moderate |
| FS 12 SOCI 3 | Ocean quahog (*Arctica islandica*) | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | Low | There is very little if any UK benthic fishing in the site. VMS data indicates low levels EU demersal fishing (up to 20 hrs '06-'09) and Beam trawling (up to 72hrs '06-'09) by the >15 demersal fleet in the vicinity of the Feature. | Moderate |

## Table 164: South Rigg rMCZ Vulnerability Assessment

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| ISCZ 06 A5.2 | Subtidal sand | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | NS-M | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |
| ISCZ 06 A5.2 | Subtidal sand | Removal of non-target species (lethal) | Fishing - benthic trawling | NS-M | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |
| ISCZ 06 A5.2 | Subtidal sand | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | NS-M | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| ISCZ 06 A5.3 | Subtidal mud | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | L-M | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |
| ISCZ 06 A5.3 | Subtidal mud | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |
| ISCZ 06 A5.3 | Subtidal mud | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |
| ISCZ 06 A5.3 | Subtidal mud | Removal of target species (lethal) | Fishing - benthic trawling | NS-M | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |
| ISCZ 06 A5.4 | Subtidal mixed sediments | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |
| ISCZ 06 A5.4 | Subtidal mixed sediments | Removal of target species (lethal) | Fishing - benthic trawling | L | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | Moderate |
| ISCZ 06 A5.4 | Subtidal mixed sediments | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | M | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |
| ISCZ 06 A5.4 | Subtidal mixed sediments | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| ISCZ 06 A5.4 | Subtidal mixed sediments | Water clarity changes | Fishing - benthic trawling | NS-M | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |
| ISCZ 06 HOCI 13 | Mud habitats in deep water | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |
| ISCZ 06 HOCI 13 | Mud habitats in deep water | Removal of non-target species (lethal) | Fishing - benthic trawling | H | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |
| ISCZ 06 HOCI 13 | Mud habitats in deep water | Removal of target species (lethal) | Fishing - benthic trawling | L | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | Moderate |
| ISCZ 06 HOCI 18 | Sea-pen and burrowing megafauna communities | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |
| ISCZ 06 HOCI 18 | Sea-pen and burrowing megafauna communities | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | M | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |
| ISCZ 06 HOCI 18 | Sea-pen and burrowing megafauna communities | Removal of target species (lethal) | Fishing - benthic trawling | M | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| ISCZ 06 HOCI 18 | Sea-pen and burrowing megafauna communities | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |
| ISCZ 06 SOCI 3 | Ocean quahog (*Arctica islandica)* | Removal of non-target species (lethal) | Fishing - benthic trawling | H | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |
| ISCZ 06 SOCI 3 | Ocean quahog (*Arctica islandica)* | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | UK aggregated VMS data shows a maximum of 2924 hours of benthic trawling in a single VMS grid between 2006 - 2009, supported by 2009 - 2012 ping data confirming widespread, high density effort. | High |

## Table 165: South-West Deeps (West) MCZ Vulnerability Assessment

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| NG 14 A5.3 | Subtidal mud | Removal of non-target species (lethal) | Fishing - benthic trawling | M | Moderate | EU and UK 2006-2009 aggregated VMS indicates the presence of this activity occurring over the feature, which is supported by VMS Ping data from the EU 2009-2013 in the form of bottom contacting gears and UK 2009-2012 indicating the presence of Otter trawls. Levels are Moderate, with effort across the feature in excess of 200hrs, with a maximum value of ~280hrs over a 4 year period, for the combined EU and UK fisheries. | Moderate |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| NG 14 A5.3 | Subtidal mud | Removal of target species (lethal) | Fishing - benthic trawling | NS-M | Moderate | EU and UK 2006-2009 aggregated VMS indicates the presence of this activity occurring over the feature, which is supported by VMS Ping data from the EU 2009-2013 in the form of bottom contacting gears and UK 2009-2012 indicating the presence of Otter trawls. Levels are Moderate, with effort across the feature in excess of 200hrs, with a maximum value of ~280hrs over a 4 year period, for the combined EU and UK fisheries. | Moderate |
| NG 14 A5.3 | Subtidal mud | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M | Moderate | EU and UK 2006-2009 aggregated VMS indicates the presence of this activity occurring over the feature, which is supported by VMS Ping data from the EU 2009-2013 in the form of bottom contacting gears and UK 2009-2012 indicating the presence of Otter trawls. Levels are Moderate, with effort across the feature in excess of 200hrs, with a maximum value of ~280hrs over a 4 year period, for the combined EU and UK fisheries. | Moderate |
| NG 14 A5.3 | Subtidal mud | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | L-M | Moderate | EU and UK 2006-2009 aggregated VMS indicates the presence of this activity occurring over the feature, which is supported by VMS Ping data from the EU 2009-2013 in the form of bottom contacting gears and UK 2009-2012 indicating the presence of Otter trawls. Levels are Moderate, with effort across the feature in excess of 200hrs, with a maximum value of ~280hrs over a 4 year period, for the combined EU and UK fisheries. | Moderate |
| NG 04 HOCI 13 | Mud habitats in deep water | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | Moderate | EU and UK 2006-2009 aggregated VMS indicates the presence of this activity occurring over the feature, which is supported by VMS Ping data from the EU 2009-2013 in the form of bottom contacting gears and UK 2009-2012 indicating the presence of Otter trawls. Levels are Moderate, with effort across the feature in excess of 200hrs, with a maximum value of ~280hrs over a 4 year period, for the combined EU and UK fisheries. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| NG 04 HOCI 13 | Mud habitats in deep water | Removal of non-target species (lethal) | Fishing - benthic trawling | H | Moderate | EU and UK 2006-2009 aggregated VMS indicates the presence of this activity occurring over the feature, which is supported by VMS Ping data from the EU 2009-2013 in the form of bottom contacting gears and UK 2009-2012 indicating the presence of Otter trawls. Levels are Moderate, with effort across the feature in excess of 200hrs, with a maximum value of ~280hrs over a 4 year period, for the combined EU and UK fisheries. | High |
| NG 04 SOCI_5 | Fan mussel (*Atrina fragilis*) | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | High | Low | EU and UK 2006-2009 VMS indicates the presence of this activity within the site, which is supported by VMS Ping data from the EU 2009-2013 in the form of bottom contacting gears and UK 2009-2012 indicating the presence of Otter trawls. Levels are Low, typically around 50 hrs of effort over a 4 year period, with a maximum of ~100hrs within the vicinity of where the feature has been identified. | Moderate |
| NG 04 SOCI_5 | Fan mussel (*Atrina fragilis*) | Removal of non-target species (lethal) | Fishing - benthic trawling | High | Low | EU and UK 2006-2009 VMS indicates the presence of this activity within the site, which is supported by VMS Ping data from the EU 2009-2013 in the form of bottom contacting gears and UK 2009-2012 indicating the presence of Otter trawls. Levels are Low, typically around 50 hrs of effort over a 4 year period, with a maximum of ~100hrs within the vicinity of where the feature has been identified. | Moderate |

## Table 166: Western Channel rMCZ Vulnerability Assessment

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 12 A4.2 | Moderate energy circalittoral rock | Removal of non-target species (lethal) | Fishing - benthic trawling | M-H | High | VMS strongly supports this. Fishing effort >15m EU fleet is high: with up to 1190 hrs EU demersal trawling (max over '06-'09). Moderate levels of >15m UK Beam trawling (typically over 150 hrs '06-'09). Some low level UK mechanised dredging and low EU beam trawl. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 12 A4.2 | Moderate energy circalittoral rock | Removal of target species (lethal) | Fishing - benthic trawling | NS-M | High | VMS strongly supports this. Fishing effort >15m EU fleet is high: with up to 1190 hrs EU demersal trawling (max over '06-'09). Moderate levels of >15m UK Beam trawling (typically over 150 hrs '06-'09). Some low level UK mechanised dredging and low EU beam trawl. | High |
| FS 12 A4.2 | Moderate energy circalittoral rock | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | M-H | High | Unlikely that benthic trawling activity would reach benchmark for this pressure (<25mm penetration), but more likely than structural abrasion, as such low exposure. Benthic gear will not penetrate as far in rock compared to sediment but some benthic gear can abrade rock & effort & coverage is high. Moderate to high activity levels and large footprint for EU demersal and EU beam, and UK dredges (mechanised) and UK beam. | High |
| FS 12 A4.2 | Moderate energy circalittoral rock | Surface abrasion: damage to seabed surface features | Fishing - potting/creeling | L-H | Low | VMS records activity of combined static EU and UK gear types, including set gill nets, set longlines, trammel nets and potting. Up to 500hrs Potting activity recorded ('06-'09), however, there is insufficient information to be able to undertake any assessment of the contribution static gear makes to the overall exposure to this pressures because the VMS data provides no indication as to how much static gear is deployed or how long it soaks for. It is an unknown and a potentially significant exposure | Moderate |
| FS 12 A4.2 | Moderate energy circalittoral rock | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | L-H | High | VMS strongly supports this. Fishing effort >15m EU fleet is high: with up to 1190 hrs EU demersal trawling (max over '06-'09). Moderate levels of >15m UK Beam trawling (typically over 150 hrs '06-'09). Some low level UK mechanised dredging and low EU beam trawl. | High |
| FS 12 A5.1 | Subtidal coarse sediment | Removal of non-target species (lethal) | Fishing - benthic trawling | NS-M | High | VMS strongly supports this. Fishing effort >15m EU fleet is high: with up to 1190 hrs EU demersal trawling (max over '06-'09). Moderate levels of >15m UK Beam trawling (typically over 150 hrs '06-'09). Some low level UK mechanised dredging and low EU beam trawl. | High |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 12 A5.1 | Subtidal coarse sediment | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | L-M | High | VMS strongly supports this. Fishing effort >15m EU fleet is high: with up to 1190 hrs EU demersal trawling (max over '06-'09). Moderate levels of >15m UK Beam trawling (typically over 150 hrs '06-'09). Some low level UK mechanised dredging and low EU beam trawl. | High |
| FS 12 A5.1 | Subtidal coarse sediment | Structural abrasion/penetration: Structural damage to seabed >25mm | Fishing - benthic trawling | L-M | Moderate | Benthic trawling activity would reach benchmark for this pressure (>25mm penetration). Moderate to high activity levels and large footprint for EU demersal and EU beam, and UK dredges (mechanised) and UK beam. Heavier gear types have resulted in a moderate vulnerability score. Heavier gear types have resulted in a moderate vulnerability score. VMS strongly supports this. Fishing effort >15m EU fleet is high: with up to 1190 hrs EU demersal trawling (max over '06-'09). Moderate levels of >15m UK Beam trawling (typically over 150 hrs '06-'09). Some low level UK mechanised dredging and low EU beam trawl. | Moderate |
| FS 12 A5.1 | Subtidal coarse sediment | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | NS-H | High | Heavier gear types have resulted in a moderate vulnerability score. Moderate to high activity levels and large footprint for EU demersal and EU beam, and UK dredges (mechanised) and UK beam. VMS strongly supports this. Fishing effort >15m EU fleet is high: with up to 1190 hrs EU demersal trawling (max over '06-'09). Moderate levels of >15m UK Beam trawling (typically over 150 hrs '06-'09). Some low level UK mechanised dredging and low EU beam trawl. Moderate activity for static EU and UK gear types, including set gill nets, set longlines, trammel nets and potting. | High |
| FS 12 A5.1 | Subtidal coarse sediment | Surface abrasion: damage to seabed surface features | Fishing - potting/creeling | NS-H | Low | VMS records activity of combined static EU and UK gear types, including set gill nets, set longlines, trammel nets and potting. Up to 500hrs Potting activity recorded ('06-'09), however, there is insufficient information to be able to undertake any assessment of the contribution static gear makes to the overall exposure to this pressures because the VMS data provides no indication as to how much static gear is deployed or how long it soaks for. It is an unknown and a potentially significant exposure | Moderate |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 12 A5.2 | Subtidal sand | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | NS-M | High | VMS strongly supports this. Fishing effort >15m EU fleet is high: with up to 1190 hrs EU demersal trawling (max over '06-'09). Moderate levels of >15m UK Beam trawling (typically over 150 hrs '06-'09). Some low level UK mechanised dredging and low EU beam trawl. | High |
| FS 12 A5.2 | Subtidal sand | Removal of non-target species (lethal) | Fishing - benthic trawling | NS-M | High | VMS strongly supports this. Fishing effort >15m EU fleet is high: with up to 1190 hrs EU demersal trawling (max over '06-'09). Moderate levels of >15m UK Beam trawling (typically over 150 hrs '06-'09). Some low level UK mechanised dredging and low EU beam trawl. | High |
| FS 12 A5.2 | Subtidal sand | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | NS-M | High | Heavier gear types have resulted in a moderate vulnerability score. Moderate to high activity levels and large footprint for EU demersal and EU beam, and UK dredges (mechanised) and UK beam. VMS strongly supports this. Fishing effort >15m EU fleet is high: with up to 1190 hrs EU demersal trawling (max over '06-'09). Moderate levels of >15m UK Beam trawling (typically over 150 hrs '06-'09). Some low level UK mechanised dredging and low EU beam trawl. Moderate activity for static EU and UK gear types, including set gill nets, set longlines, trammel nets and potting. | High |
| FS 12 A5.4 | Subtidal mixed sediments | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Fishing - benthic trawling | H | High | VMS strongly supports this. Fishing effort >15m EU fleet is high: with up to 1190 hrs EU demersal trawling (max over '06-'09). Moderate levels of >15m UK Beam trawling (typically over 150 hrs '06-'09). Some low level UK mechanised dredging and low EU beam trawl. | High |
| FS 12 A5.4 | Subtidal mixed sediments | Surface abrasion: damage to seabed surface features | Fishing - potting/creeling | M | Low | VMS records activity of combined static EU and UK gear types, including set gill nets, set longlines, trammel nets and potting. Up to 500hrs Potting activity recorded ('06-'09), however, there is insufficient information to be able to undertake any assessment of the contribution static gear makes to the overall exposure to this pressures because the VMS data provides no indication as to how much static gear is deployed or how long it soaks for. It is an unknown and a potentially significant exposure. | Moderate |

| Site Code | Feature | Pressure | Activity | Sensitivity | Exposure | Comment | Vulnerability |
|---|---|---|---|---|---|---|---|
| FS 12 A5.4 | Subtidal mixed sediments | Surface abrasion: damage to seabed surface features | Fishing - benthic trawling | M | High | Moderate to high activity levels and large footprint for EU demersal and EU beam, and UK dredges (mechanised) and UK beam. Heavier gear types have resulted in a high vulnerability score. VMS indicates >1100 hrs 06-09 in places | High |
| FS 12 A5.4 | Subtidal mixed sediments | Removal of non-target species (lethal) | Fishing - benthic trawling | M | High | VMS strongly supports this. Fishing effort >15m EU fleet is high: with up to 1190 hrs EU demersal trawling (max over '06-'09). Moderate levels of >15m UK Beam trawling (typically over 150 hrs '06-'09). Some low level UK mechanised dredging and low EU beam trawl. | High |
| FS 12 A5.4 | Subtidal mixed sediments | Removal of target species (lethal) | Fishing - benthic trawling | L | High | VMS strongly supports this. Fishing effort >15m EU fleet is high: with up to 1190 hrs EU demersal trawling (max over '06-'09). Moderate levels of >15m UK Beam trawling (typically over 150 hrs '06-'09). Some low level UK mechanised dredging and low EU beam trawl. | Moderate |

### Future risk

The table below displays those features considered to be at High future risk i.e. the feature is highly sensitive (with moderate/high confidence) to one/more pressures. Future risk has been assessed based on feature sensitivity to pressures, which is extracted from the MB0102 sensitivity matrix[64]. The assessment of future risk will not incorporate any consideration of exposure of features to pressures from ongoing activities or any judgement of the likelihood of activities occurring in the future (for further information see Section 5.4 on the method for Feature Risk). Note that for the habitat FOCI Mud habitats in deep water an amendment has been made to the sensitivity scores provided in the MB0102 sensitivity matrix[64] so these align with the parent feature broad-scale habitat Subtidal mud (for further information see Section 5.3).

**Table 167: Features considered to be at High future risk i.e. the feature is highly sensitive (with moderate/high confidence) to one/more pressures.**

| ENG Feature | Pressure(s) | Confidence |
|---|---|---|
| Moderate energy circalittoral rock | Removal of non-target species (lethal) | (M-H sensitivity) Moderate |
| Subtidal biogenic reefs | Removal of target species (lethal) | (NS-H sensitivity) Moderate |
| Subtidal sand | Physical removal (extraction of substratum) | (L-H sensitivity) Moderate |
| Horse mussel (*Modiolus modiolus*) beds | Physical change (to another seabed type) | High |
| | Siltation rate changes (high) | Moderate |
| | Structural abrasion/penetration: Structural damage to seabed >25mm | Moderate |
| | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Moderate |
| | Physical removal (extraction of substratum) | Moderate |
| | Removal of target species (lethal) | High |

| ENG Feature | Pressure(s) | Confidence |
|---|---|---|
| Peat and clay exposures | Physical change (to another seabed type) | High |
| | Physical loss (to land or freshwater habitat) | High |
| Ross worm (*Sabellaria spinulosa*) reefs | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | Moderate |
| | Removal of non-target species (lethal) | Moderate |
| Sea-pen and burrowing megafauna communities | Organic enrichment | Moderate |
| Ocean quahog (*Arctica islandica*) | Structural abrasion/penetration: Structural damage to seabed >25mm | High |
| | Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm | High |
| | Physical removal (extraction of substratum) | Moderate |
| Native oyster (*Ostrea edulis*) | Physical change (to another seabed type) | High |
| | Introduction of microbial pathogens (disease) | Medium |
| | Removal of target species (lethal) | High |