Scientific advice on offshore Marine Conservation Zones proposed for designation in 2015/16

July 2015

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Purpose of the document

In this report, the Joint Nature Conservation Committee (**JNCC**) provides a scientific assessment of seven offshore proposed Marine Conservation Zones (**pMCZs**) and three offshore designated Marine Conservation Zones (**MCZs**) for which additional features have been proposed for designation by the Department of Environment, Food & Rural Affairs (**Defra**). These 10 sites together are the offshore component of what is subsequently referred to as 'Tranche Two MCZs'. A public consultation was held between 30th January 2015 and 24th April 2015, seeking views on the possible designation of these seven Tranche Two offshore recommended MCZs (**rMCZs**)[1], and additional features to three already designated offshore MCZs, by Defra in 2015/16. Additionally Defra proposed to designate 16 inshore recommended MCZs and additional features in seven already designated inshore MCZs in Tranche Two.

JNCC provided Defra with scientific advice on rMCZs in June 2014 to support Defra's selection of sites for public consultation. Defra has since asked JNCC to review its earlier scientific advice on those possible offshore rMCZs now being considered in Tranche Two. This latest review is necessary in order to consider any new data that may have become available since June 2014. These new data include information submitted to Defra through the Tranche Two public consultation (January to April 2015), and subsequently shared with JNCC. The assessments presented in this report were completed between April and July 2015 and encompass all new data made available since June 2014. Where no update to the 2014 advice was required, JNCC refers to the results provided in the 2014 advice *Scientific advice on possible offshore Marine Conservation Zones considered for consultation in 2015*. JNCC recommends that these reports are read alongside each other.

Twenty-three undesignated sites were put forward in Tranche Two, of which seven are located in offshore waters (beyond 12 nautical miles) and fall under JNCC's auspices for scientific advice and reporting; a further ten sites are already designated as MCZs but additional features are recommended for addition to the designation orders, three of which lie in offshore waters. The remaining sites lie in inshore waters and fall under Natural England's jurisdiction.

The ten offshore sites that are the focus of this present report are:

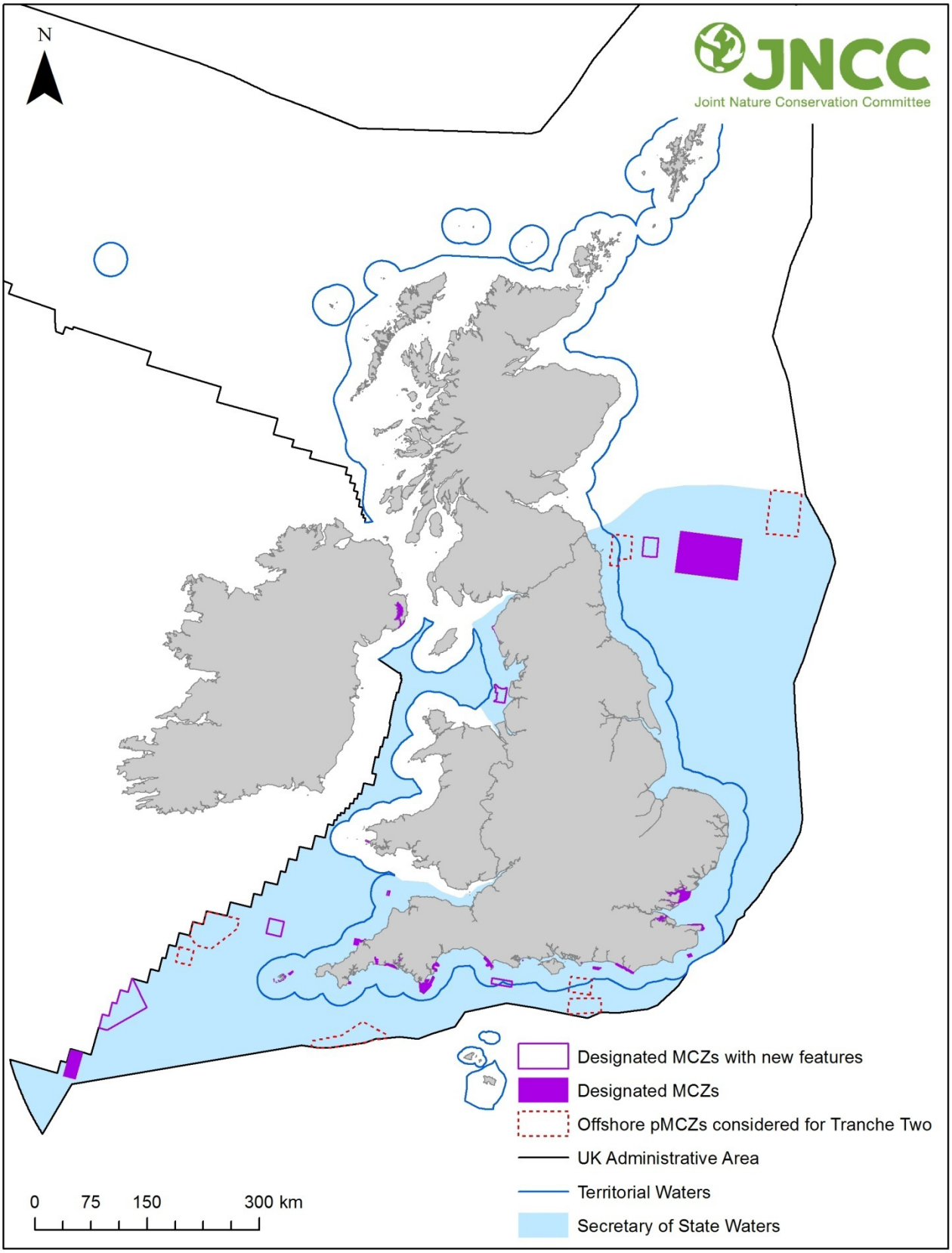
[1] Recommended MCZs refer to those sites that were recommended for designation to Defra by the regional MCZ projects in 2011. Proposed MCZs refer to those sites that Defra have indicated they are minded to designate in 2015/16 as part of Tranche Two.

The seven possible offshore MCZs included within the Tranche Two consultation:

1. Farnes East pMCZ – *Site Code: NG14*	**5. Offshore Brighton pMCZ –** *Site Code: BS14*
2. Fulmar pMCZ – *Site Code: NG17*	**6. Offshore Overfalls pMCZ –** Site Code: BS17
3. Greater Haig Fras pMCZ – *Site Code: FS05*	**7. Western Channel pMCZ –** *Site Code: FS12*
4. North-West of Jones Bank pMCZ – *Site Code: FS04*	

The three designated MCZs with further features for designation:

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



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 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, scientific review and public consultation. There were 27 sites designated in total, of which five are in the offshore environment. In 2014, JNCC provided further advice on recommended MCZs (**rMCZ**) to be considered by Defra as part of a second tranche of designations. In January 2015, Defra launched a twelve-week public consultation on 23 potential Tranche Two MCZs[1] (pMCZs), including seven in offshore waters, and also sought views on the proposed addition of new features to the designation orders of 10 of the already designated MCZs (seven in inshore and three in offshore waters).

MCZs proposed for designation in 2015/16:

	Inshore	Offshore	Total
Designated MCZs considered for additional features	7	3	10
Recommended MCZs	16	7	23
Total number of sites	**23**	**10**	**33**

This present report details JNCC's revised assessments for the seven offshore pMCZs and three MCZs for which additional features have been proposed for designation by the UK Government in 2015/16. Our assessments include new data and information collected since JNCC's 2014 advice, where it has become available, in order to use the best-available evidence in our advice to Defra. JNCC notes no new biophysical data were available for some of the sites or for many of the associated features in other sites, and as such, JNCC's June 2014 advice remains up-to-date for those sites or features. Even where new data have become available since June 2014, any requirement to revise our advice depends upon its type and/or location meaning that, in some situations, it was not necessary to revisit our previous advice. JNCC developed a decision-tree assessment process to identify those features for which new or updated advice was required. JNCC completed these assessments between March and May 2015.

The JNCC MCZ Evidence Quality Assurance Group reviewed the assessment process, and applied judgement where required to ensure that assessments in our degree of confidence in the presence and

extent of features were consistent and appropriate, using a clearly described rationale. More information on the QA process is provided in Annex 2.

JNCC assessed 64 features within the seven offshore pMCZs and three existing offshore MCZs. We have **High** confidence in the presence of 43 features, **Moderate** confidence for 11 features, **Low** confidence for four features, **No** confidence for three features and three 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 28 features, **Moderate** confidence in 18 features, **Low** confidence in 12 features, **No** confidence for three features and three features have not been assessed. There are 19 instances where confidence in feature presence is higher than confidence in feature extent.

Summary of confidence of feature presence and extent of features considered in present advice:

Confidence	**Feature presence**	**Feature extent**
High	43	28
Moderate	11	18
Low	4	12
None	3	3
Not assessed	3	3
Total	**64**	**64**

JNCC reviewed the proposed General Management Approach for all 64 features. We concluded that 36 features require a **Recover** objective, and another 16 features require a **Maintain** objective. The remaining 12 features were not assessed because it was not possible to assess the GMA of all features due to either unknown site fidelity of a species to a site, or in the instance of **Ross Worm (*Sabellaria spinulosa*) reefs**, there was no evidence of the habitat occurring within the site only its component species.

JNCC concluded there is sufficient evidence to designate the majority of features identified in the seven offshore pMCZs and three designated offshore MCZs. JNCC recommend that all the features covered in JNCC's 2015 advice within North-West of Jones Bank pMCZ have sufficient data to support their designation. The additional features within East of Haig Fras MCZ, North East of Farnes Deep MCZ and South-West Deeps (West) MCZ should also be added to the existing designation orders since there are sufficient data available. For Farnes East pMCZ, all features considered by Defra for designation in 2015/16 should be designated, with the exception of **Peat and clay exposures** for which there are no data to verify its presence in the site.

JNCC notes that Fulmar pMCZ, Greater Haig Fras pMCZ, Offshore Brighton pMCZ, Offshore Overfalls pMCZ and Western Channel pMCZ have at least one feature within each site with limited data currently available, but the features have high conservation interest. For these features, JNCC has considered outcomes from work to identify MCZ options that would fill big gaps in the existing MPA network, as well as

outcomes from assessment of the current and future risk to the features to inform the advice provided as to whether the conservation benefits support priority feature designation. An assessment at the site level has also been undertaken to determine the contribution to the wider network. JNCC recommends that Defra considers the balance between the need to be precautionary to reflect risk or whether a feature/site fills a gap in the network, and the data supporting each feature when deciding whether it is appropriate to designate these features.

JNCC further notes that continuing from our pre-consultation advice on the candidate Tranche Two sites in 2014 it has 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 default. JNCC continues to recommend that **Subtidal sands and gravels** should not go forward separately as a feature for possible designation[2].

As per JNCC's 2014 advice, we advise that the FOCI **Mud habitats in deep water** is not designated as a feature of a site that has **Subtidal mud** and **Sea-pen and burrowing megafauna communities** as proposed features, as these three mud habitats share the same spatial extent. JNCC considers 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, JNCC advises that **Mud habitats in deep water** is not designated as a feature of North-West Jones Bank rMCZ.

In summary, JNCC recommends that Defra considers all 'data sufficient' features for designation within their respective sites in 2015/16.

[2] 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

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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[3] 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 to create an ecologically coherent network in the UK's seas and contribute to wider European and global initiatives (illustrated in Figure 1).

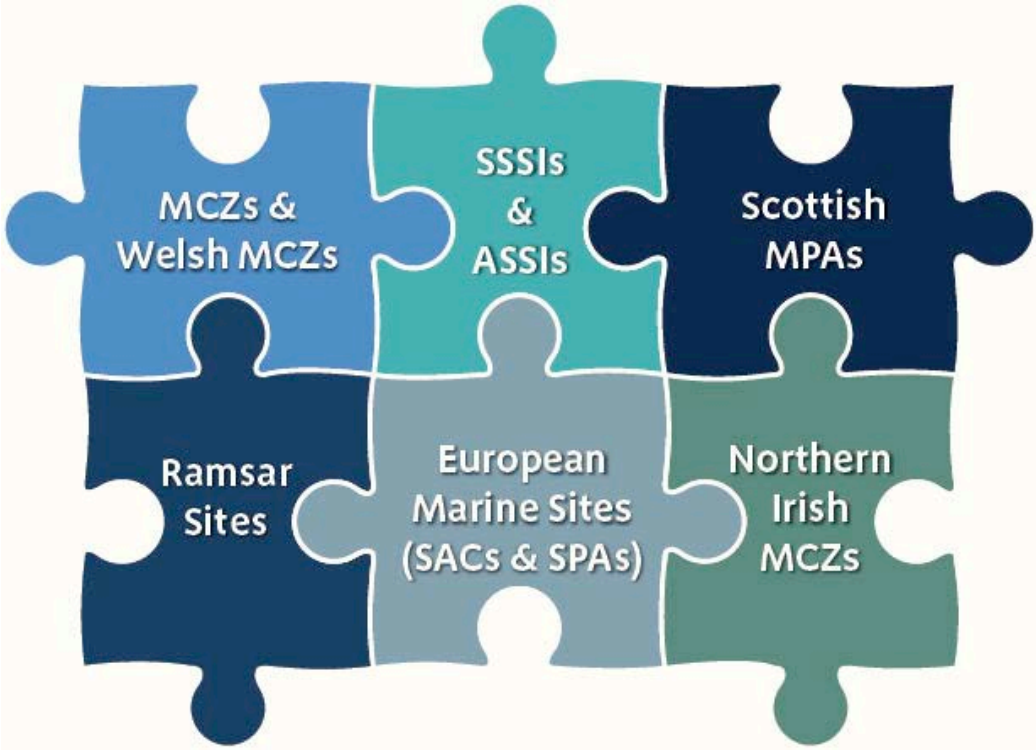

Figure 1: MPA Designations in the UK that contribute to MPA networks

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 (see 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 outputs from these 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 1.

[3] Marine and Coastal Access Act 2009. Available at: http://jncc.defra.gov.uk/page-5230

Figure 2: The UK Marine Area under jurisdiction of the Defra Secretary of State that comprise the MCZ Project Area

2 The MCZ selection and designation process

JNCC and Natural England **(NE)** set up a project in 2008 to give stakeholders (sea-users, public bodies and governments) with an interest in Secretary of State Waters (see Figure 2) the opportunity to recommend potential sites for the new category of MPA, called MCZs, to the UK Government. These four regional projects collectively recommended 127[4] areas from which 27 MCZs were formally designated in Tranche One in 2013 (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[3] received Royal Assent. Subsequently, Strangford Lough MNR in Northern Ireland converted to a MCZ when the Marine Act (Northern Ireland) 2013[5] achieved Royal Assent in September 2013, and Skomer Island MNR became a MCZ in 2014 when the Welsh Government formally adopted the Act.

[4] Marine Conservation Zones Project. Available at: http://jncc.defra.gov.uk/page-2409
[5] The Marine Act (Northern Ireland) 2013. Available at: http://jncc.defra.gov.uk/page-6678

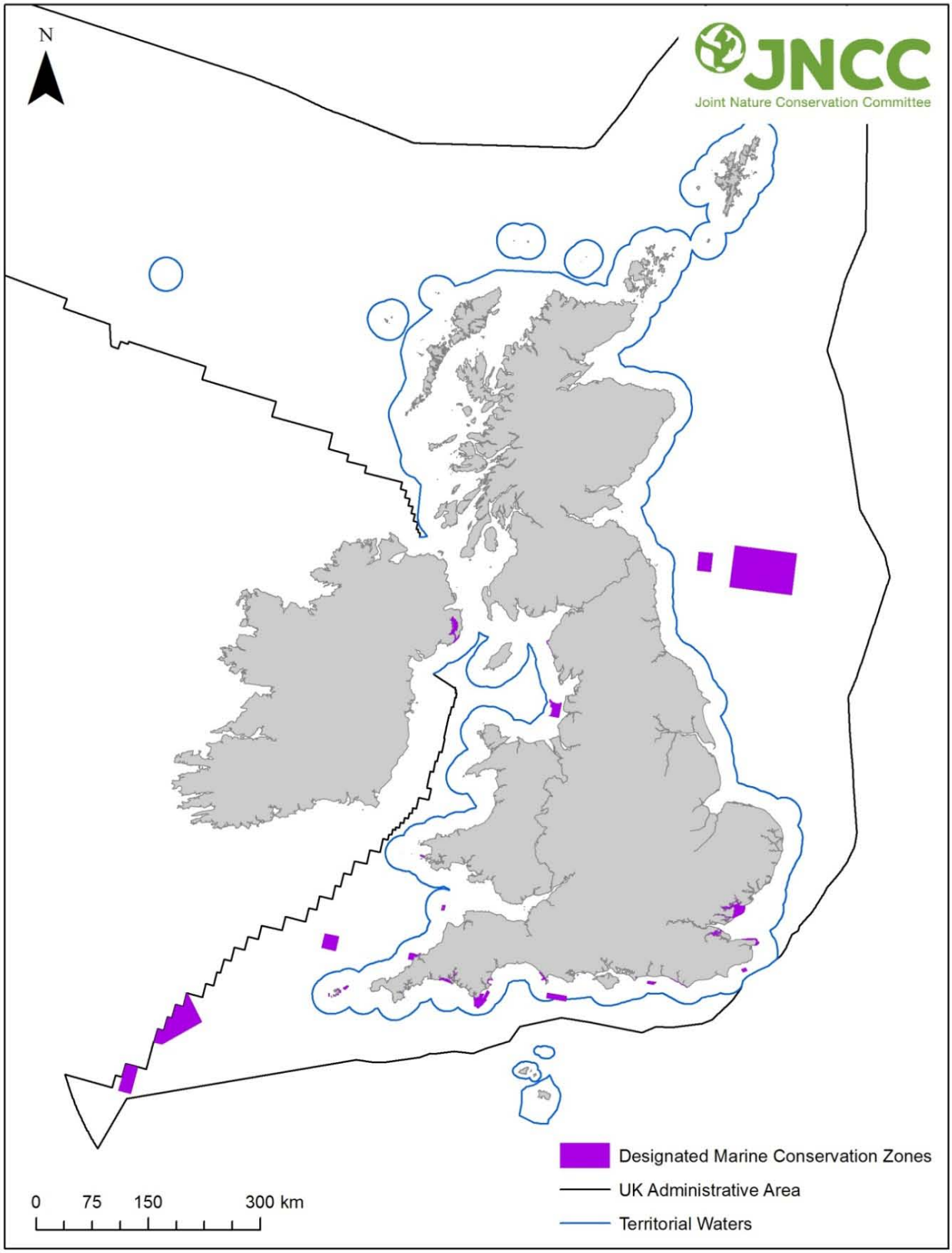

Figure 3: Designated MCZs as of July 2015

In November 2013, alongside announcing the designation of the 27 MCZs in Tranche One, Defra also announced their intention to designate two future tranches of MCZs. Candidate Tranche Two sites were selected by Defra[6] from the remaining original recommendations made by the regional MCZ projects in 2011[4], and were considered for designation in 2015/16. Defra derived the long list of candidate recommended MCZs (**rMCZs**) for the second tranche from JNCC advice on how the remaining rMCZ site options could help fill 'big gaps' in the existing network of MPAs in Secretary of State waters[7]; Defra also considered the socio-economic costs and benefits of these sites and the adequacy of their 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 1.

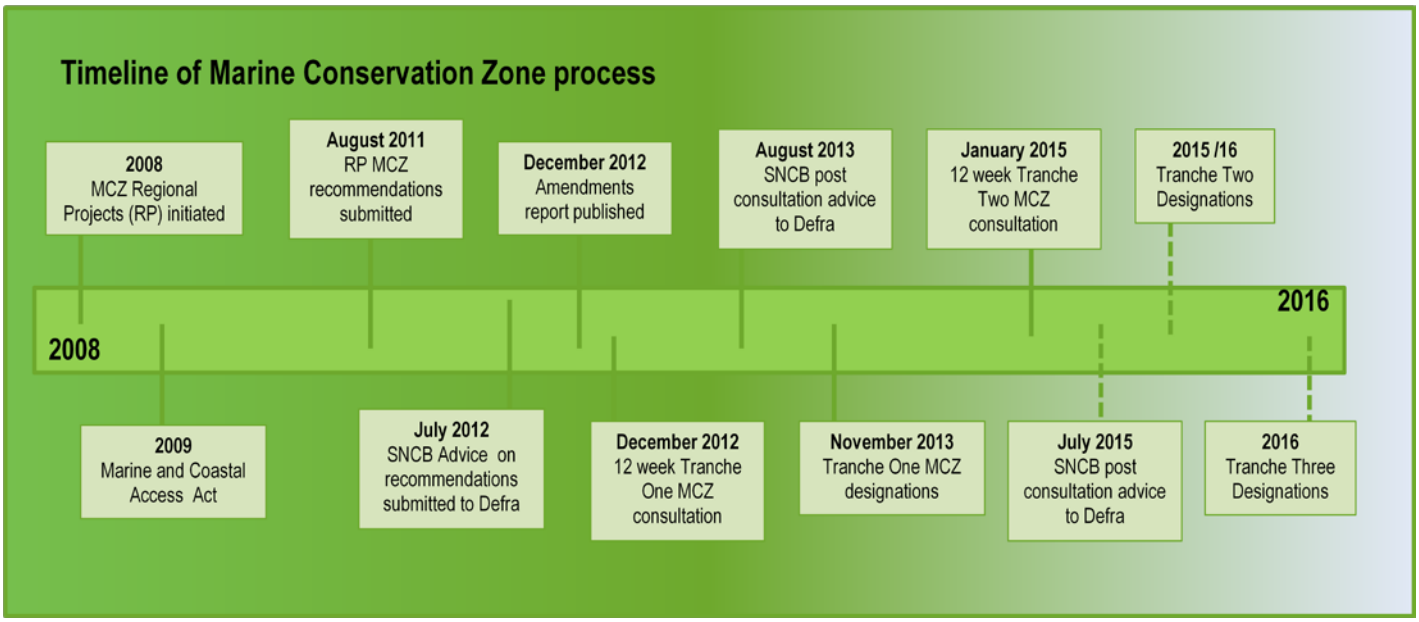

Figure 4: Historical and projected MCZ timeline of milestones and documents

Defra asked JNCC and Natural England to provide detailed scientific advice on a subset of sites from their long list. In June 2014, JNCC provided its scientific advice[8] on 16 candidate offshore Tranche Two sites. Furthermore, three previously designated sites; East of Haig Fras MCZ, North East of Farnes Deep MCZ and South-West Deeps (West) MCZ were considered for additional features to be included in the

[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
[7] 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
[8] JNCC's advice on possible offshore Marine Conservation Zones considered for consultation in 2015. Available at: http://jncc.defra.gov.uk/page-6658

Designation Orders[9], as new data became available since their designation in November 2013. The summer 2014 assessments took into account all available data and information collected since JNCC and Natural England's advice on the 127 rMCZs was published in July 2012[10], and JNCC's Tranche One post-consultation advice in August 2013[11], in order to use the best-available evidence in our advice to Defra.

In January 2015, Defra launched a twelve-week public consultation[12] on 23 possible MCZs (**pMCZs**) included in Tranche Two, and also sought views on the proposed addition of new features to 10 of the already designated MCZs (seven in inshore and three in offshore waters). The choice of sites put forward in Tranche Two was based on the data available to support the designations of sites along with socio-economic factors. Defra asked consultees to provide any new information on the Tranche Two pMCZs that would support or affect their designation. Defra asked JNCC and Natural England to review all scientific information available at the end of the consultation and provide updated advice in summer 2015.

This present report details the revised assessments for the seven offshore pMCZs and three MCZs for which additional features have been proposed for designation by the UK Government in 2015/16. The assessments include new data and information collected since JNCC's 2014 advice[8] (see Section 4), where is has become available, in order to use the best-available evidence in our advice to Defra. These new data include data or information submitted to Defra through the Tranche Two public consultation, where these data/information have been shared with JNCC.

JNCC notes no new biophysical data were available for some of the sites or for many of the associated features in other sites, and as such, JNCC's 2014 advice[8] remains up-to-date for those sites or features. Even where new data have become available since June 2014, any requirement to revise our advice depended upon its type and/or location meaning that, in some situations, it was not necessary to revisit our previous advice.

JNCC developed a decision-tree assessment process to identify those features for which new or updated advice was required in July 2015 (see Section 6.1). Following a structured decision process streamlined the production of JNCC's Tranche Two post-consultation advice by avoiding unnecessary revisions whilst ensuring that decisions remained scientifically robust and consistent. Where new advice is required, the

[9] 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

[10] JNCC and Natural England, 2012. JNCC and Natural England's Advice to Defra on recommended Marine Conservation Zones. Available at: http://jncc.defra.gov.uk/page-6229

[11] JNCC's advice on offshore Marine Conservation Zones proposed for designation in 2013. Available at: http://jncc.defra.gov.uk/page-6460

[12] Defra consultation on the Second Tranche of Marine Conservation Zones. Available at: https://consult.defra.gov.uk/marine/tranche2mczs

provision of advice follows the same assessment processes undertaken for the 2014 advice[8], in line with the relevant MCZ procedures[13].

When compiling our advice, JNCC has endeavoured to comply with the Government Chief Scientific Adviser's guidelines for preparing scientific advice[14], and the recommendations of the Graham-Bryce report[15] 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[16] 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 (for more information, see Annex 2). 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 in making decisions on the designation of MCZs. 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 the key documents produced throughout the MCZ process is given in Annex 1.

[13] MCZ Advice Protocols. Available at: http://jncc.defra.gov.uk/page-5999
[14] Guidelines for preparing scientific advice. Available at: http://www.bis.gov.uk/go-science/science-in-government/strategy-and-guidance
[15] Graham-Bryce Report. Available at: https://www.gov.uk/government/publications/independent-review-of-the-evidence-process-for-selecting-marine-special-areas-of-conservation
[16] JNCC Evidence Quality Policy. Available at: http://jncc.defra.gov.uk/page-6675

3 Offshore sites proposed for designation in 2015/16

Defra proposed 23 pMCZs, and 10 designated MCZs with additional features as part of the consultation on the designation of MCZ in Tranche Two[12]. Of these, seven offshore pMCZs, and three MCZs included for additional features are located in UK offshore waters and are illustrated below in Figure 5.

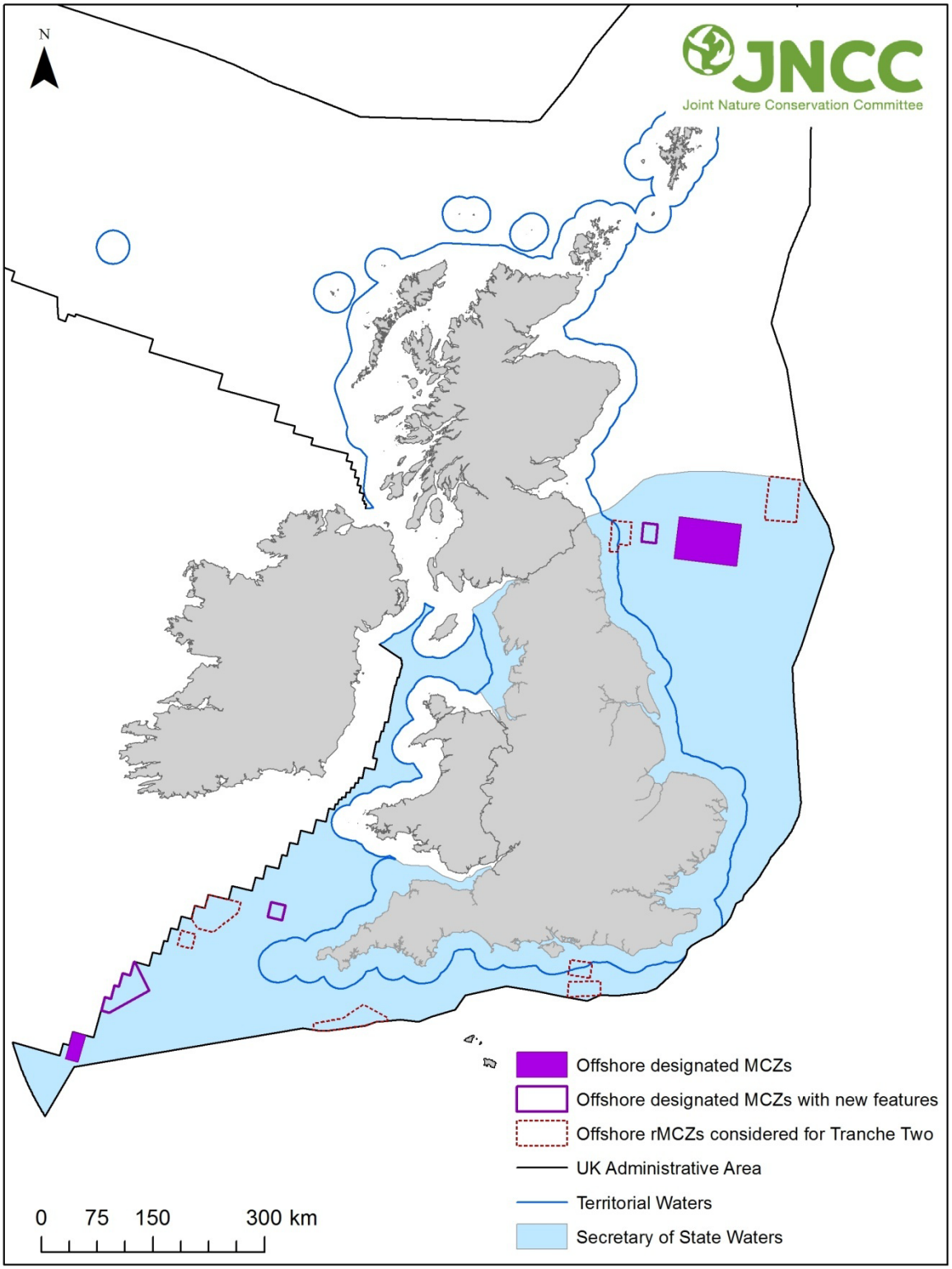

Figure 5: Designated MCZs in offshore waters, and the ten offshore pMCZs and three offshore designated MCZs with additional features proposed for designation in Tranche Two.

4 New data for 2015 assessments

In 2012, Defra let two contracts (MB0116[17] and MB0120[18]) to support the MCZ designation process after submission of the recommendations from the regional projects. MB0116[17] was an in-depth review of the ecological MCZ evidence to build on 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. JNCC took into account any new data sources not previously used in the 2012 assessment[10] when undertaking the revised assessment of confidence in the presence and extent of features.

MB0120[18] is a data-gathering exercise led by the Centre for Environment, Fisheries and Aquaculture Science (**Cefas**), involving the collection of new survey data from within a selection of rMCZs. These MCZ surveys have enhanced our evidence base for many of the rMCZs, including all of the pMCZs put forward for designation by Defra in Tranche Two. Further mapping products received through MB0120[18] since JNCC's 2014 advice[8] have led to the re-assessment of features or sites to provide an accurate picture of features present, their vulnerability and the suitability for designation.

New data that have contributed to the 2015 Tranche Two post-consultation assessments are listed in Table 1 below. Note that JNCC used all data available to the 2012, 2013 and 2014 assessments in our 2015 assessments in conjunction with the new data listed below.

[17] 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

[18] 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 Annex 3 provides information on the survey dates and offshore sites visited through MB0120 since the MCZ site verification data gathering exercise began in 2012.

Table 1: New evidence available for pMCZ feature assessments in 2015

New Data
Cefas *Nephrops* Stock Assessment burrow counts and Particle Size Analysis (**PSA**) data points[19]
Defra contract MB0120[18]
Defra MCZ consultation 2015 public responses[20]
Marine Management Organisation (**MMO**) Vessel Monitoring System (**VMS**) aggregated data 2009- 2013
UK Oil and Gas database[21]
Marine Management Organisation Vessel Monitoring System UK and EU ping data 2010-2013
Crown Estates - energy and infrastructure GIS downloads[22]
Irish Marine Institute *Nephrops* Stock Assessment burrow counts and PSA data points[23]
Marine Recorder snapshot[24]

[19] 2007-2014 Farnes Deeps Underwater TV and Particle Size Analysis data, supplied by Cefas
[20] JNCC reviewed data provided in consultation responses that were shared with us by Defra
[21] UK Oil and Gas Data. Available at: www.ukoilandgasdata.com [Dated 07/01/2015]
[22] Crown Estate – Energy and Infrastructure GIS downloads. Available at: http://www.thecrownestate.co.uk/energy-and-infrastructure/downloads/maps-and-gis-data/ [Dated 12/01/2015]
[23] Doyle, J., Lordan, C., Hehir, I., Fitzgerald, R., O'Connor, S., Keith, M., and Sheridan, M. 2014. The Labadie, Jones and Cockburn Banks *Nephrops* Grounds (FU20-21) 2014 UWTV Survey Report and catch options for 2015. Marine Institute UWTV Survey report.
[24] Marine Recorder. Available at: http://jncc.defra.gov.uk/page-1599 [Dated 23/02/2015]

5 Summary of assessments

JNCC assessed 54 features within the seven offshore pMCZs in 2015:

- Farnes East pMCZ;
- Fulmar pMCZ;
- Greater Haig Fras pMCZ;
- North-West of Jones Bank pMCZ;
- Offshore Brighton pMCZ;
- Offshore Overfalls pMCZ;
- Western Channel pMCZ.

Furthermore, 10 additional features were considered for three designated MCZs:

- East of Haig Fras MCZ;
- North East of Farnes Deep MCZ;
- South-West Deeps (West) MCZ.

Table 2: Site assessment summary table from JNCC's 2015 assessments of features in Tranche Two

The following table summarises the outcomes of JNCC's 2015 Tranche Two feature assessments using evidence available up to May 2015. The score from JNCC's 2014 assessment[8] is shown in *blue italic text*. An asterisk (*) indicates no previous assessment because the feature has not previously been proposed for that site.

NB: This table is only a summary and it should be used alongside 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[27] and guidance[28]) *(2014 Assessment)*	**Confidence in feature extent/distribution**[25] (MCZ Technical Protocol E[27] and guidance[28]) *(2014 Assessment)*	**Confidence in feature condition** (MCZ Technical Protocol F[29]) *(2014 Assessment)*	**General Management Approach advised** (MCZ Conservation Objective Guidance[34]) *(2014 Assessment)*
East of Haig Fras MCZ	**High energy circalittoral rock**	**High** *(*)*	**Moderate** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Subtidal mud	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
	Mud habitats in deep water	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
Farnes East pMCZ (NG14)	**Moderate energy circalittoral rock**	**High** *(High)*	**Moderate** *(Low)*	**Low** *(Low)*	**Maintain** *(Maintain)*
	Subtidal coarse sediment	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Maintain** *(Maintain)*
	Subtidal sand	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Maintain** *(Maintain)*
	Subtidal mud	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mixed sediments	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Maintain** *(Maintain)*
	Mud habitats in deep water	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
	Sea-pen & burrowing megafauna communities	**Moderate** *(Moderate)*	**Moderate** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Ocean quahog (*Arctica islandica*)	**High** *(High)*	**High** *(High)*	**Moderate** *(Moderate)*	**Recover** *(Recover)*
	Peat and clay exposures	**No confidence** *(Low)*	**No confidence** *(Low)*	**Not assessed** *(Low)*	**Not assessed** *(Maintain)*

[25] 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[27] and guidance[28]) *(2014 Assessment)*	**Confidence in feature extent/distribution**[25] (MCZ Technical Protocol E[27] and guidance[28]) *(2014 Assessment)*	**Confidence in feature condition** (MCZ Technical Protocol F[29]) *(2014 Assessment)*	**General Management Approach advised** (MCZ Conservation Objective Guidance[34]) *(2014 Assessment)*
	Smelt (*Osmerus eperlanus*)	**Moderate** *(Moderate)*	**Moderate** *(Moderate)*	**Not assessed** *(Not assessed)*	**Not assessed** *(Not assessed)*
Fulmar pMCZ (NG17)	**Subtidal coarse sediment**	**Moderate** *(Moderate)*	**Low** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal sand	**High** *(High)*	**Low** *(Low)*	**Low** *(Low)*	**Maintain** *(Maintain)*
	Subtidal mud	**High** *(High)*	**Moderate** *(Moderate)*	**Low** *(Low)*	**Maintain** *(Maintain)*
	Subtidal mixed sediments	**High** *(High)*	**Moderate** *(Low)*	**Low** *(Low)*	**Maintain** *(Maintain)*
	Mud habitats in deep water	**High** *(High)*	**Moderate** *(Moderate)*	**Low** *(Low)*	**Maintain** *(Maintain)*
	Ocean quahog (*Arctica islandica*)	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Maintain** *(Maintain)*
	Smelt (*Osmerus eperlanus*)	**High** *(High)*	**High** *(High)*	**Not assessed** *(Not assessed)*	**Not assessed** *(Not assessed)*
	Native oyster (*Ostrea edulis*)	**Not assessed** *(Not assessed)*	**Not assessed** *(Not assessed)*	**Not assessed** *(Not assessed)*	**Not assessed** *(Not assessed)*
	Amphipod shrimp (*Gitanopsis bispinosa*)	**Not assessed** *(Not Assessed)*	**Not assessed** *(Not Assessed)*	**Not assessed** *(Not assessed)*	**Not assessed** *(Not assessed)*
	Undulate ray (*Raja undulata*)	**Not assessed** *(Not assessed)*	**Not assessed** *(Not assessed)*	**Not assessed** *(Not assessed)*	**Not assessed** *(Not assessed)*
Greater Haig Fras pMCZ (FS05)	**Subtidal coarse sediment**	**High** *(High)*	**Low** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal sand	**High** *(High)*	**Moderate** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mud	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mixed sediments	**High** *(High)*	**Low** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Mud habitats in deep water	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
	Sea-pen and burrowing megafauna communities	**High** *(*)*	**Moderate** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Fan mussel (*Atrina fragilis*)	**No confidence** *(Moderate)*	**No confidence** *(Low)*	**Not assessed** *(Low)*	**Not assessed** *(Recover)*
	Haig Fras Rock	**High** *(High)*	**High** *(High)*	**High** *(High)*	**Maintain** *(Maintain)*

Site Name (Code)	**Ecological Network Guidance (ENG) feature**	**Confidence in feature presence** (MCZ Technical Protocol E[27] and guidance[28]) *(2014 Assessment)*	**Confidence in feature extent/distribution**[25] (MCZ Technical Protocol E[27] and guidance[28]) *(2014 Assessment)*	**Confidence in feature condition** (MCZ Technical Protocol F[29]) *(2014 Assessment)*	**General Management Approach advised** (MCZ Conservation Objective Guidance[34]) *(2014 Assessment)*
	Complex				
	Subtidal coarse sediment / Subtidal mixed sediments mosaic	**High** *(*)*	**Moderate** *(*)*	**Low** *(*)*	**Recover** *(*)*
North East of Farnes Deep MCZ	**Subtidal mud**	**Moderate** *(Moderate)*	**Moderate** *(Moderate)*	**Low** *(Low)*	**Maintain** *(Maintain)*
	Subtidal mixed sediments	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Maintain** *(Maintain)*
	Mud habitats in deep water	**Moderate** *(Moderate)*	**Moderate** *(Moderate)*	**Low** *(Low)*	**Maintain** *(Maintain)*
	Ocean quahog (*Arctica islandica*)	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Maintain** *(Maintain)*
North-West of Jones Bank pMCZ (FS04)	**Subtidal coarse sediment**	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal sand	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mud	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mixed sediments	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
	Mud habitats in deep water	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
	Sea-pen and burrowing megafauna communities	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
Offshore Brighton pMCZ (BS14)	**High energy circalittoral rock**	**High** *(Moderate)*	**Moderate** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Moderate energy circalittoral rock	**No confidence** *(Moderate)*	**No confidence** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal coarse sediment	**High** *(High)*	**High** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mixed sediments	**High** *(High)*	**High** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Ross worm (*Sabellaria spinulosa*) reefs	**Low** *(Low)*	**Low** *(Low)*	**Not assessed** *(Not assessed)*	**Not assessed** *(Not assessed)*
	Undulate ray (*Raja undulata*)*	**Moderate** *(Moderate)*	**Moderate** *(Moderate)*	**Not assessed** *(Not assessed)*	**Not assessed** *(Not assessed)*
Offshore Overfalls	**Moderate energy**	**High** *(*)*	**Low** *(*)*	**Low** *(*)*	**Recover** *(*)*

Site Name (Code)	**Ecological Network Guidance (ENG) feature**	**Confidence in feature presence** (MCZ Technical Protocol E[27] and guidance[28]) *(2014 Assessment)*	**Confidence in feature extent/distribution**[25] (MCZ Technical Protocol E[27] and guidance[28]) *(2014 Assessment)*	**Confidence in feature condition** (MCZ Technical Protocol F[29]) *(2014 Assessment)*	**General Management Approach advised** (MCZ Conservation Objective Guidance[34]) *(2014 Assessment)*
pMCZ (BS17)	**circalittoral rock**				
	Subtidal coarse sediment	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal sand	**Moderate** *(Moderate)*	**Low** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mixed sediments	**High** *(High)*	**Moderate** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal chalk	**Moderate** *(*)*	**Low** *(*)*	**Low** *(*)*	**Maintain** *(*)*
	Ross worm (*Sabellaria spinulosa*) reefs	**Low** *(Low)*	**Low** *(Low)*	**Not assessed** *(Not assessed)*	**Not assessed** *(Not Assessed)*
	European eel (*Anguilla anguilla*)	**Low** *(Low)*	**Low** *(Low)*	**Not assessed** *(Not assessed)*	**Not assessed** *(Not Assessed)*
	Undulate ray (*Raja undulata*)	**Moderate** *(Moderate)*	**Moderate** *(Moderate)*	**Not assessed** *(Not assessed)*	**Not assessed** *(Not assessed)*
	English Channel outburst flood features	**High** *(High)*	**High** *(High)*	**High** *(High)*	**Maintain** *(Maintain)*
South-West Deeps (West) MCZ	**Subtidal mud**	**High** *(High)*	**High** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Mud habitats in deep water	**High** *(High)*	**High** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Fan mussel (*Atrina fragilis*)*	**High** *(Low)*	**Moderate** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
Western Channel pMCZ (FS12)	**Moderate energy circalittoral rock**	**Low** *(Low)*	**Low** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal coarse sediment	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal sand	**Moderate** *(Moderate)*	**Moderate** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mixed sediments	**Moderate** *(Moderate)*	**Low** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*

JNCC assessed 64 features within the seven offshore pMCZs and three existing offshore MCZs. We have **High** confidence in the presence of 43 features, **Moderate** confidence for 11 features, **Low** confidence for four features, **No** confidence for three features and three 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 28 features, **Moderate** confidence in 18 features, **Low** confidence in 12 features, **No** confidence for three features and three features have not been assessed. There are 19 instances where confidence in feature presence is higher than confidence in feature extent.

JNCC reviewed the proposed General Management Approach for all 64 features. We concluded that 36 features require a **Recover** objective, and another 16 features require a **Maintain** objective. The remaining 12 features were not assessed, because it was not possible to assess the GMA of all features due to either unknown site fidelity of a species to a site, or in the instance of **Ross Worm (*Sabellaria spinulosa*) reefs**, there was no evidence of the habitat occurring within the site only its component species.

JNCC concluded there is sufficient evidence to designate the majority of features identified in the seven offshore pMCZs and the three designated offshore MCZs. JNCC recommends that all the features covered in JNCC's 2015 advice within North-West of Jones Bank pMCZ have sufficient data to support their designation. The additional features within East of Haig Fras MCZ, North East of Farnes Deep MCZ and South-West Deeps (West) MCZ should also be added to the existing designation orders since there are sufficient data available. For Farnes East pMCZ, all features considered by Defra for designation in 2015/16 should be designated, with the exception of Peat and clay exposures for which there are no data to verify its presence in the site.

JNCC notes that Fulmar pMCZ, Greater Haig Fras pMCZ, Offshore Brighton pMCZ, Offshore Overfalls pMCZ and Western Channel pMCZ have at least one feature within each site with limited data currently available, but the features have high conservation interest. JNCC recommends that Defra considers the balance between the application of the precautionary principle and the data supporting each feature to assess whether it is appropriate to designate.

In summary, JNCC recommends that Defra considers all 'data sufficient' features for designation within their respective sites in 2015/16.

6 Method of assessment

6.1 Assessment of new data

Further to the assessments undertaken in JNCC's 2014 advice[8], this present report provides JNCC's updated scientific advice to Defra on offshore pMCZs, and additional features in three designated MCZs, which are being put forward for designation in 2015/16. However, the scope of the current advice depended on whether any new data became available – either biophysical or on human activities – that would change our previously submitted scientific advice for a site/feature. Where new data became available, the requirement to revise advice depended upon its type and/or location. New biophysical data for an existing feature may not have changed our confidence in feature presence and/or feature extent and therefore did not require full advice to be developed further. Likewise, new data on human activities may not have changed our existing knowledge about the activities present within a site and therefore would not have changed the General Management Approach (**GMA**) assigned to the features in JNCC's 2014 advice[8]. It was therefore unnecessary to revisit previous advice where there was a high degree of certainty that the outcomes would not have changed.

JNCC developed a 'decision-tree process' (Figure 6) to determine the nature of any likely revision to JNCC's existing advice if new data became available. Following a structured decision process streamlined the production of JNCC's Tranche Two post-consultation advice by avoiding unnecessary revisions whilst ensuring that decisions remained scientifically robust and consistent. Note that for each site/feature, both branches of the decision tree (Figure 6) were followed to ensure the scientific advice was provided where required.

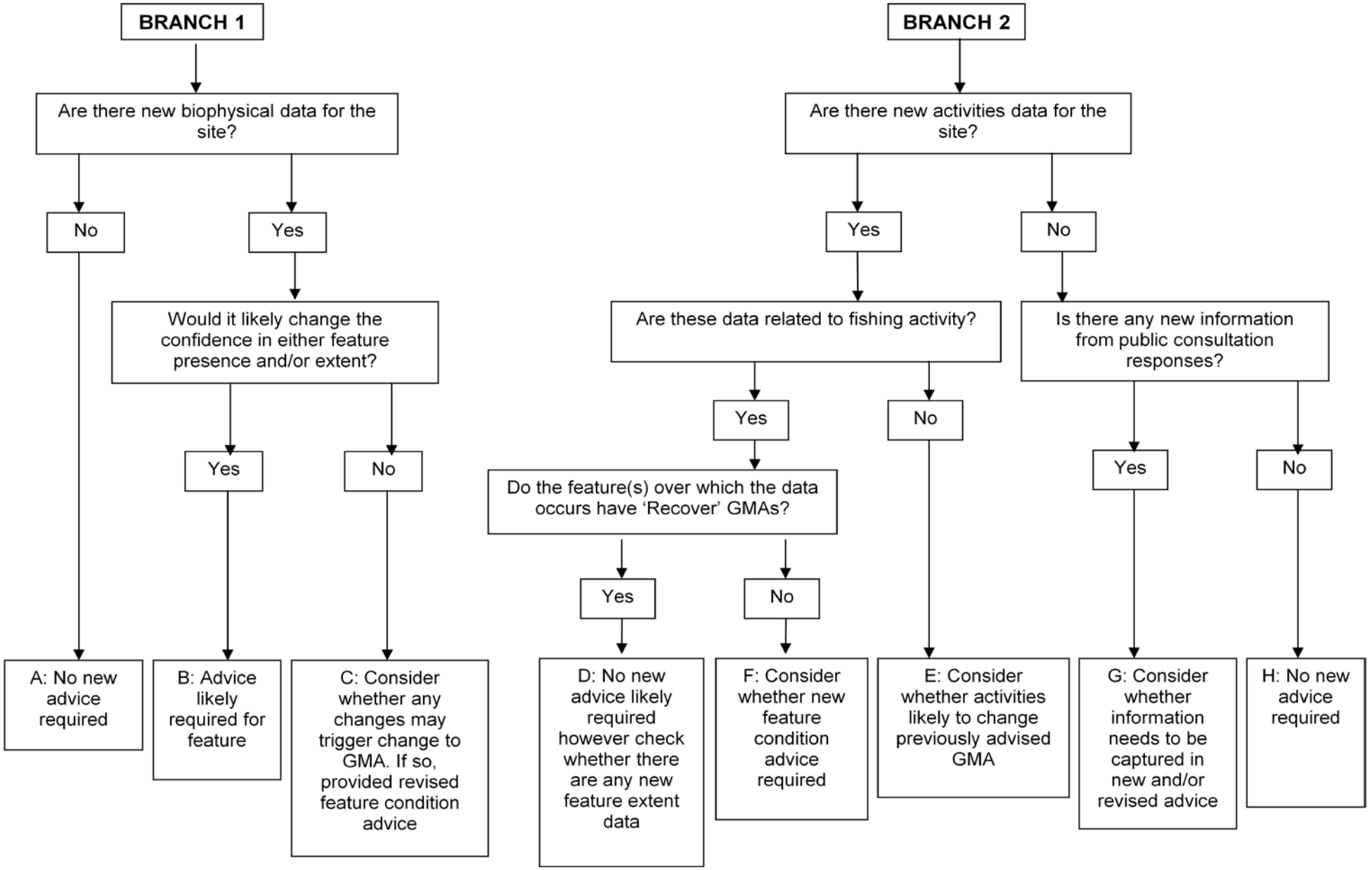

Figure 6: MCZ Tranche Two post-consultation advice decision tree.

6.1.1 Explanation of MCZ decision tree outcomes

Note that Figure 6 requires expert judgement to be applied to any new information, where previously JNCC would have analysed such information through the established MCZ Protocols[13]. Any use of expert judgement made through this decision tree was reviewed in line with the JNCC Evidence Quality Assurance policy[16]. In most cases this was through the JNCC MCZ Evidence Quality Assurance Group. Outcomes from the application of the decision tree may mean that revised confidence assessment scores through application of the MCZ Protocols may not be necessary. The following paragraphs explain the different outcomes and give examples of how new information may lead to each outcome.

Outcome A:

No new advice is required for a site or feature as there are no new biophysical data and available data will have been considered in JNCC's 2014 advice[8].

Outcome B:

New biophysical data exist that may change previous advice on our confidence in feature presence and extent (as judged in answering the question leading to this outcome). Revised advice on both feature presence/extent and feature condition may be required depending on the nature of the new data. For example, data that decreases confidence in feature presence may mean no assessment of feature condition can now be carried out (i.e. a change to 'No confidence' in feature presence). Alternatively, a new habitat map may suggest a potential change in our confidence of feature extent but may not require a complete examination of the confidence in feature condition if the new spatial configuration continues to interact with data on human activities. Consequently, there would not be any change to the previously advised GMA.

Outcome C:

New biophysical data exist, but these data are judged not to change the confidence in feature presence or extent. For example, data that changes the spatial configuration of a habitat may still have the same confidence in feature extent as previously advised and therefore require no new advice. However, akin to the example provided in Outcome B, that change in spatial configuration may not change the previously advised GMA and thus not require any new advice on confidence in feature condition.

Outcome D:

A feature had previously been assigned a 'Recover' GMA due to its vulnerability to pressures to which it was exposed. New fisheries data may either provide further evidence to indicate that feature is still exposed to a pressure, or may indicate a change in fishing activities that reduce exposure levels to a pressure. Assuming the feature was assigned a 'Recover' GMA based on being exposed to pressures caused by fishing activities, then the new fisheries data are unlikely to have any impact on the previously assigned

'Recover' GMA. Further evidence to support bottom-contacting fishing activity in the site would continue to support the 'Recover' GMA. Evidence suggesting a reduction in current fishing activity compared with past fishing data (which extends from 2006) would possibly indicate a change in the incident pressure, it is likely the feature would still need to 'Recover' to favourable condition based on its previous exposure to damaging activities; many features have a 'recoverability' that extends over periods >5 years[26]. Therefore in both instances, no new assessment of feature condition would be required. New advice may still be required where the feature extent changed because the known fishing activity (past and current) no longer occurred over the feature. Therefore any application of Outcome D requires a further check on the corresponding outcome from Branch 1 before confirming that no additional advice is required on the GMA.

Where the 'Recover' GMA was a consequence of non-fishing derived pressures to which the feature was exposed, the change in fishing activity may still cause a change in GMA if our knowledge of other activities has changed within the site. This would need to be considered on a case-by-case basis depending on the type of change in fishing activity (i.e. increase/decrease, change in gear type use over feature, etc) and whether the existing activities are still ongoing. It is anticipated that in most cases, a 'Recover' GMA was assigned due to a feature's exposure to bottom-contacting fishing gears and as such, the case-by-case approach will not be necessary. This needs to be factored against the outcome determined from Branch 1 as mentioned in the previous paragraph.

Outcome E:

New data on human activities have been gathered in a site that may change previous interpretations of whether features are exposed to a pressure. A case-by-case approach should be applied depending on the type of change in activity (i.e. increase/decrease, new consented activity, where activity occurs, etc.) and whether the existing activities within the site remain ongoing. It is anticipated that in most cases, a 'Recover' GMA has been previously advised due to a feature's exposure to bottom-contacting fishing gears and as such the case-by-case approach will probably not be necessary.

Outcome F:

New fishing data have been gathered in a site where a feature has previously been assigned a 'Maintain' GMA. These data may change or improve our understanding of the fishing activity occurring over a feature and change our previous assessment of the feature's exposure to a pressure. Therefore a new assessment in the confidence of feature condition is probably required, although a common-sense approach should be applied here where new data are unlikely to change the previously advised 'Maintain' GMA (i.e. expert judgement used if new data are a very minor change to previous information, or potentially do not occur over the feature etc.)

[26] MarLIn defined 'Recoverability' as 'the ability of a habitat, community or individual (or individual colony) of species to redress damage sustained as a result of an external factor' - see http://www.marlin.ac.uk/recoverabilityranking.php

Outcome G:

New information has been provided for a feature or site through the public consultation. New information refers to qualitative, contextual text provided by a stakeholder within a public consultation response, where said text provides no spatially specific information i.e. any information more specific than referring to the site as a whole. Such information needs to be considered and may provide contextual information about the biophysical data supporting a feature or site, or about the human activities occurring on the site. This new information may result in the need to revisit previous advice for a feature. However as no new data are provided, the information may either provide useful context, but not require any changes to the advice, or may provide reference to data that could change our advice but were not available or may not be useable. In these instances, JNCC will consider the relevant information presented in consultation responses and judge whether it would require previous advice to be amended.

Outcome H:

No new advice is required for the feature or site as there are no new data or contextual information provided through the public consultation. Therefore JNCC's 2014 advice[8] for that feature or site remains up to date.

6.2 Assessment methodologies

Where the decision-tree process outlined in Section 6.1 has identified that revisions to JNCC's 2014 advice[8] are, or may be, required for a feature, JNCC has followed the assessment processes undertaken for the 2014 advice[8], to either provide new advice on new features, or to update the advice previously given. The methodology used in carrying out these assessments is detailed in Section 5 of the 2014 advice[8]. JNCC has undertaken revised assessments only where a need was identified through the decision-tree process explained in Section 6.1, or where new data have indicated the presence of a feature not previously recommended within a site. A summary of the assessment methodologies is provided below, with further details in the references provided or the 2014 advice[8].

6.2.1. Confidence in feature presence and extent

JNCC completed confidence assessments for the presence and extent of the proposed features in line with the criteria outlined in Technical Protocol E[27], and the supporting guidance on its application[28]. The results are provided in the site specific sections below with the full assessment in Annex 4.

The identification of rocky habitats and biogenic reefs were considered in JNCC's 2014 advice[8] (Page 45). Following the identification of Subtidal chalk as an additional feature within Offshore Overfalls pMCZ (see

[27] MCZ Technical Protocol E. Available at: http://jncc.defra.gov.uk/pdf/120111_SNCB%20MCZ%20Advice_Protocol_Feature%20Evidence%20V5.0.pdf

[28] 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

Section 7.8), JNCC considered how data indicating the presence of Subtidal chalk are analysed to provide ground-truth records of the feature in a site. We concluded that the same approach taken for the identification of rocky habitats should equally be used for Subtidal chalk, i.e. individual still images would not be considered as ground-truth point data to verify the presence of rocky/chalky habitats within sites. Instead, a valid ground-truth point would be one minute of video displaying continuous rock/chalk habitat. Such an approach is required because Subtidal chalk features are contained within wider rocky habitats and require sufficient data to demonstrate a real extent to verify its presence; a single still image only shows a small area of the seabed that would not constitute a viable patch of the chalk habitat. Such an approach has been endorsed by the JNCC MCZ Evidence QA Group and will continue to be used in future JNCC scientific advice on the designation of offshore MCZs.

6.2.2 Confidence in feature condition

Where required, JNCC assessed the confidence in a feature's condition in line with MCZ Technical Protocol F[29]. The protocol outlines different approaches, depending on whether the feature's condition was assessed using direct evidence, or by way of the vulnerability assessment process. 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[29] for details). The assessment results are provided in the site-specific sections below with the full assessment in Annex 5.

6.2.3 Advice on the General Management Approach required to achieve conservation objectives

The conservation objective for each feature is to achieve *favourable condition*[30]. 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). Updated advice on a feature's General Management Approach (**GMA**) was only required for a small number of the features. For newly recommended features, a vulnerability assessment was undertaken which, for completeness, used both information gathered since 2012, and the original data that informed the assessments in 2012. In addition, the existing vulnerability assessments were reviewed in light of new VMS fisheries data from 2009-13[31], and updated where required. Any changes from our 2014 advice[8] are highlighted in the site-specific sections below. However, JNCC reserves the right to further amend our advice should new information that informs feature condition become available.

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[29] 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

[30] 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.

[31] Vessel monitoring system (VMS) identity, position, speed, and heading data from vessels fishing in offshore waters are transmitted to the Marine Management Organisation of the UK Department of Environment, Food and Rural Affairs. For this analysis, we used all available VMS records for vessels active in the areas under consideration for the period 2009-2013.

6.2.4 Feature risk

The methodology for assessing feature risk is contained within the annex to the paper '*MCZ Levels of Evidence – Advice on when data supports a feature/site for designation from a scientific, evidence-based perspective*'[32]. For each site, two risk scores are advised for each feature that consider the current and future risk for each feature. Risk has been categorised as High (Red), Moderate (Amber), or Low (Green) depending on how sensitive a feature is to pressures. There are a number of caveats associated with this assessment as set out in the methodology[32].

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

The process for establishing 'data sufficiency' or scientific justification for designation of a feature or site is outlined in '*MCZ Levels of Evidence – Advice on when data supports a feature/site for designation from a scientific, evidence-based perspective*'[32]. Firstly, JNCC's advice determines whether a feature has enough data to support its designation, using outputs of the application of Technical Protocol E[27] and its supplementary guidance[28]. Where there are inadequate data to support confidence in feature presence or extent, additional conservation/ecological considerations that may support priority designation of the feature are considered. This additional consideration uses information from JNCC's 'Big Gaps' work[7] along with expert judgement[33] taking into account new data and any changes in our knowledge of the sites since JNCC's 2014 advice[8]. The assessment considers risk, and whether a precautionary approach should be taken to protect the feature. The advice also provides information about the site as a whole in order for Defra to take decisions about potential site designation. Where features are no longer being proposed for designation by Defra or where additional features have been included in this present advice, JNCC used expert judgement and the JNCC 'Big Gaps' work[7] to provide a brief update to our 2014 advice[8] on site sufficiency.

6.2.6 Quality assurance process

Once JNCC's MCZ staff completed the 2015 updated assessments, the JNCC MCZ Evidence QA Group (See Annex 5 of the 2014 advice[8] for Terms of Reference) reviewed and quality assured the results and conclusions. The QA review considered the consistency of application of the technical protocols to verify that the data sources used in the assessment were appropriate, and any use of expert judgement that determined a confidence score through Technical Protocol E[27] (and supplementary guidance[28]). The QA group signed off the assessments once it was satisfied that all technical protocols had been followed.

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[32] 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

[33] Barnard, S and Boyes, S.J. (2013) Review of Case Studies and Recommendations for the Inclusion of Expert Judgement in Marine Biodiversity Status Assessments. JNCC Report 490. Available at: http://jncc.defra.gov.uk/page-6513

7 Site Assessment

7.1 East of Haig Fras MCZ

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

In July 2013, JNCC provided advice on the features **Subtidal mud** and **Mud habitats in deep water** as additional features to be included for designation, however, the data to support these features was received too late for their inclusion within the public consultation, and so the features were not designated in Tranche One. Instead, the features have been proposed for designation as part of Tranche Two, and were included within the 2014 public consultation. **High energy circalittoral rock**, which has not been included in any of JNCC's previous advice on this site, is also recommended for consideration at this site for designation in Tranche Two or possibly through a subsequent Tranche.

7.1.1 Assessment of new data

JNCC assessed any requirement for revisions to its 2014 advice[8] in light of any new data available for the MCZ. The assessment followed the JNCC MCZ decision-tree process (see Section 6.1). The outcomes of the assessment are provided in Table 3, whereby the letters provided under the first and second branches relate to the outcome of the decision tree (see Figure 6). Where the application of the decision tree identified that no new advice was required, the 'Revised advice needed' cell in the table is highlighted in green. Cells highlighted in red indicate where new advice may be required for the feature, as summarised within the cell.

Table 3: Outcomes of decision-tree process for features in East of Haig Fras MCZ

Feature	Previously assessed?	New data available?	Decision tree outcome	Revised advice needed?
High energy circalittoral rock	No	Yes	**Branch 1 – Outcome B** Advice required for feature **Branch 2 – N/A**	Yes - Feature has not been assessed previously and therefore requires advice against the MCZ Protocols[13]. See Section 7.1.2.
Subtidal mud	Yes	Yes	**Branch 1 – Outcome A** No revised advice required **Branch 2 – Outcome D** No revised advice likely to be required, however check whether there are any new feature extent data.	No – Updated VMS data consistent with the level of exposure presented in gridded 2006-09 VMS data for bottom-contacting gears coincident with the feature. Therefore no new advice is required on General Management Approach or feature condition.
Mud habitats in deep water	Yes	Yes	**Branch 1 – Outcome A** No revised advice required **Branch 2 – Outcome D** No revised advice likely to be required, however check whether there are any new feature extent data.	

Since JNCC's 2014 advice[8] proposing the addition of **Subtidal mud** and **Mud habitats in deep water** to the designated site, there have been no new data to provide any further biophysical evidence to support

these features. Following the JNCC MCZ decision-tree process (see Section 6.1), no new advice is required and JNCC continues to advise that both **Subtidal mud** and **Mud habitats in deep water** have data to support a **High** confidence in both feature presence and extent (for more information see JNCC's 2014 advice[8]).

JNCC received updated fisheries VMS data for fishing activity between 2009 and 2013[31]. These data identify a continued moderate exposure of the seabed to the pressures associated with benthic trawling, as advised previously. Consequently, **Subtidal mud** and **Mud habitats in deep water** have been assessed as not requiring any revised advice related to their condition due to their continued exposure to pressures to which the features are sensitive. On this basis, JNCC reiterates its previous advice that a **Recover** GMA is appropriate for both of these features.

JNCC has not considered **High energy circalittoral rock** in East of Haig Fras MCZ in previous MCZ scientific advice to Defra. The feature's presence was confirmed by a MB0120[18] survey in 2013 and therefore JNCC is required to provide full advice on this feature.

JNCC has updated the vulnerability assessment tables that were presented in our JNCC's 2014 advice[8] – see Annex 5 of the current document.

7.1.2 Assessment of Feature Presence and Extent

Table 4: East of Haig Fras MCZ Evidence Assessment Summary

Site (Code)	Feature	Evidence Assessment Results			
		Confidence in presence	Rationale for confidence in feature presence	Confidence in extent	Rationale for confidence in feature extent
East of Haig Fras MCZ (FS07)	**High energy circalittoral rock**	**High** (*)	Presence of the feature is supported by multiple (>5) one minute sections of video displaying continuous occurrence of high energy circalittoral rock.	**Moderate** (*)	A full-coverage habitat map from survey shows patches of the parent circalittoral rock habitat throughout the site. Ground-truth records for the feature are restricted to two transects in the east of the site, resulting in a moderate confidence score because ground-truth data have not been gathered over the whole of the parent habitat.

*This feature is recently identified and therefore has no score from a past assessment.

Two MB0120[18] surveys were completed in East of Haig Fras MCZ during 2012 and 2013, which informed JNCC's advice in 2013 and 2014 on features confirmed within the site. During the 2013 MB0120[18] survey, camera tows along two intersecting transects, located in the east of the site, specifically targeted potential circalittoral rock features. **High energy circalittoral rock** was determined from the 2013 ground-truth data. As a result, the extent of **Moderate energy circalittoral rock** as previously outlined from the MB0120[18] habitat map (see Figure 12 on page 86 of 2014 advice[8]), is now categorised as the parent feature **Circalittoral rock** (see Figure 7).

Given that **Moderate energy circalittoral rock** is a designated feature of East of Haig Fras MCZ, advice to take into account our improved understanding of the different rock habitats in the site is only required for **High energy circalittoral rock**. Technical Protocol E[27] and associated guidance document[28] were applied to this feature to produce a confidence assessment in feature presence and extent, utilising data available for the feature.

Six records of **High energy circalittoral rock** meeting the minimum patch size of 25m^2 were identified in video tows gathered through MB0120[18] surveys. Under Technical Protocol E[27] and accompanying guidance[28], this is sufficient for a **High** confidence in presence to be assigned. For more information on how ground-truth records of rocky habitats are determined, see JNCC's 2014 advice[8] (see Section 5.1 on page 45). The MB0120[18] survey produced a full coverage habitat map that shows the extent of the parent habitat **Circalittoral rock**. As appropriate ground-truth data were not gathered across the full extent of the rock, it is not possible to know whether all of the rock is **High energy circalittoral rock** or the already designated **Moderate energy circalittoral rock**. Therefore, expert judgement has been applied to the extent assessment for **High energy circalittoral rock**. Given that the data demonstrate the extent of rock in the site and that six sections of video tows have been identified as **High energy circalittoral rock**, JNCC has **Moderate** confidence in feature extent (see Table 4).

As it is not currently possible to distinguish between discrete areas of **High energy circalittoral rock** and **Moderate energy circalittoral rock** based on available data, JNCC advises that the existing Designation Order[9] for East of Haig Fras MCZ is amended so that the designated feature of the site is a mosaic of **High energy circalittoral rock** and **Moderate energy circalittoral rock**. This would ensure the various rock habitats present in the site are protected and appropriate management sought that is informed by knowledge of the biological communities present within the site. JNCC considers that it would not be practical to delineate the two features throughout the site.

7.1.3 Advice on the General Management Approach for MCZ features

A summary of JNCC's assessments of confidence in feature condition and the GMA proposed is presented below in Table 5 (see Section 6.2.3 for the approach). Further information on the vulnerability assessments is provided in Annex 5.

Table 5: Summary of JNCC's conservation advice for features in East of Haig Fras MCZ

Site (code)	**Feature**	**Confidence in feature condition** (MCZ Technical Protocol F)[29]	**General Management Approach advised** (MCZ Conservation Objective Guidance)[34]
East of Haig Fras MCZ (FS07)	**High energy circalittoral rock**	**Low** (*)	**Recover** (*)

*This feature is recently identified and therefore has no score from a past assessment.

[34] MCZ Conservation Objective Guidance. Available at: http://jncc.defra.gov.uk/page-4881

High energy circalittoral rock is scored as highly or moderately sensitive to pressures associated with benthic trawling. Aggregated VMS data for 2009–2013[31] suggest that moderate levels of benthic trawling are occurring over the feature, verified by viewing the VMS ping data from 2009-2013 showing the precise fishing tracks. Therefore, a **Recover** objective is advised for the **High energy circalittoral rock**.

7.1.4 Confidence in feature condition

Technical Protocol F[29], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. No additional information is available to support any change from the default judgement. JNCC have **Low** confidence in feature condition.

7.1.5 Feature Risk

Section 6.2.4 provides information on the data and method used for the assessment of risk. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable, the 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 presented in Table 167 on page 530 of the 2014 advice[8].

JNCC's 2014 advice[8] for East of Haig Fras MCZ (see Section 6.4.4 on page 83) assessed the **Subtidal mud** and **Mud habitats in deep water** features and there are no changes to either the current or future risk of damage in this advice. An assessment of feature risk for **High energy circalittoral rock** is provided in Table 6.

Table 6: East of Haig Fras MCZ feature risk assessment

Site (code)	Feature	Current risk	Future risk
East of Haig Fras MCZ (FS 07)	**High energy circalittoral rock**	**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.

7.1.6. Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site have appropriate data to support their designation following the method outlined in Section 6.2.5 of this advice. The results of our assessment in 2015 are presented in Table 7 and Table 8 below.

Feature assessment

Table 7: East of Haig Fras MCZ feature data sufficiency assessment

Site (code)	Feature	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 Haig Fras MCZ (FS 07)	**High energy circalittoral rock**	**Yes** (High confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**
	Subtidal mud	**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 support designation of feature**

Site level assessment

Table 8: 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** – High energy circalittoral rock should not be designated as we cannot widely distinguish between the designated **Moderate energy circalittoral rock** and **High energy circalittoral rock**. The existing Designation Order[9] for East of Haig Fras MCZ should be amended so that High energy circalittoral rock and Moderate energy circalittoral rock are a mosaic feature of the site.
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%** (noting other features in the site are already designated)
Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?	**<u>JNCC 2014 Advice</u>** ***"Do the additional features within the site contribute to filling a big gap in the network?*** ***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 recognises 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.* ***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 Charting Progress 2 region):* - *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 pMCZ, North-West of Jones Bank pMCZ, 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).* - *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 pMCZ, North-West of Jones Bank pMCZ, South of Celtic Deep rMCZ. ***Adequacy** (seeking protection of at least 10% area of each EUNIS Level 3 habitat within each CP2 region):* *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".* **JNCC 2015 Updated Advice** Since advice was provided in 2014[8], an additional feature '**High energy circalittoral rock**' was identified in this site. High energy circalittoral rock would not contribute to filling any of the 'big gaps' previously identified in the Western Channel and Celtic Seas region. The analysis of 'big gaps' in the existing MPA network in early 2014 found more than two examples of this habitat are afforded protection and 32% of the known area of this habitat are afforded protection in this region.

7.1.6 Feature maps

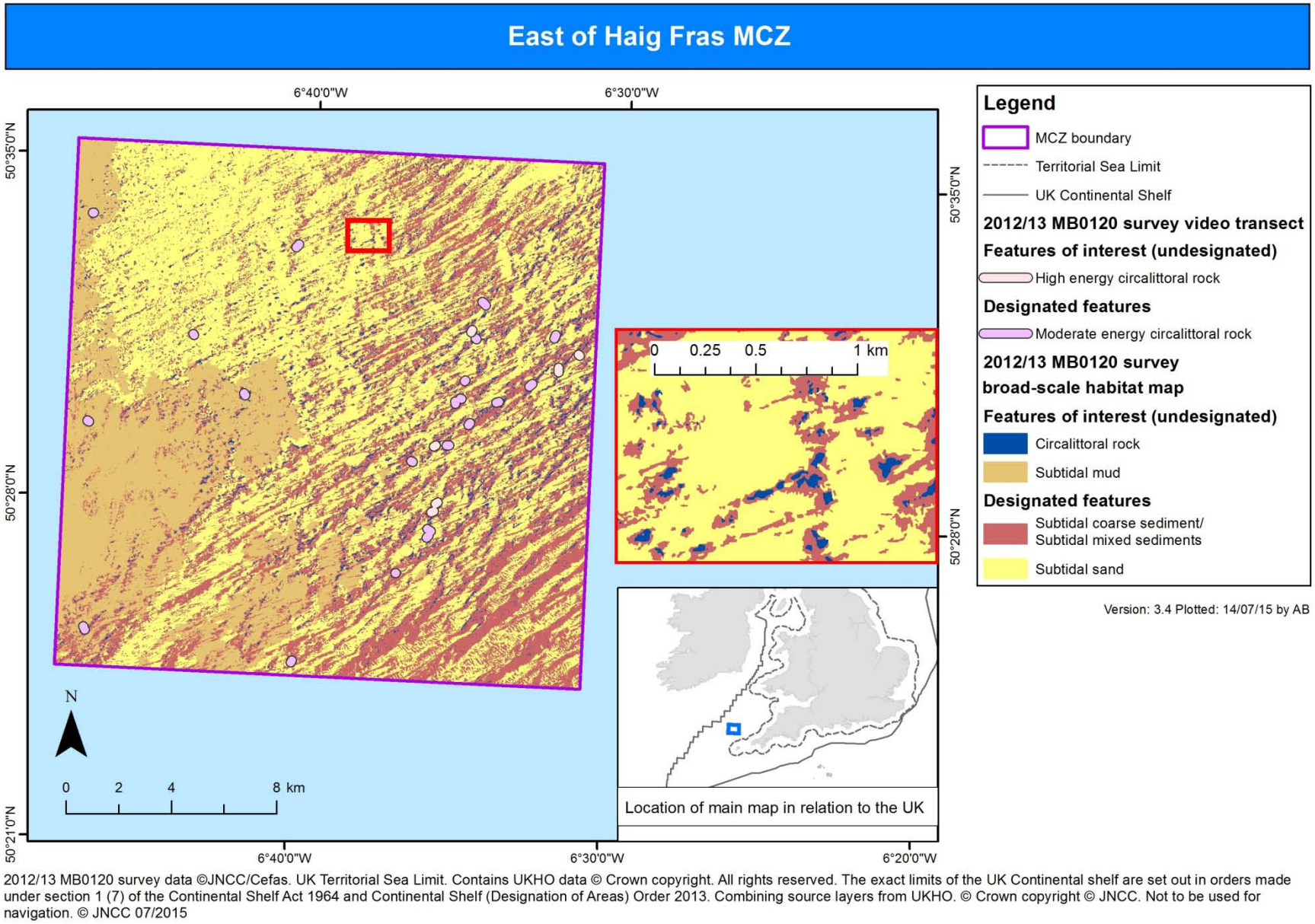


Figure 7: Distribution of broad-scale habitats in East of Haig Fras MCZ

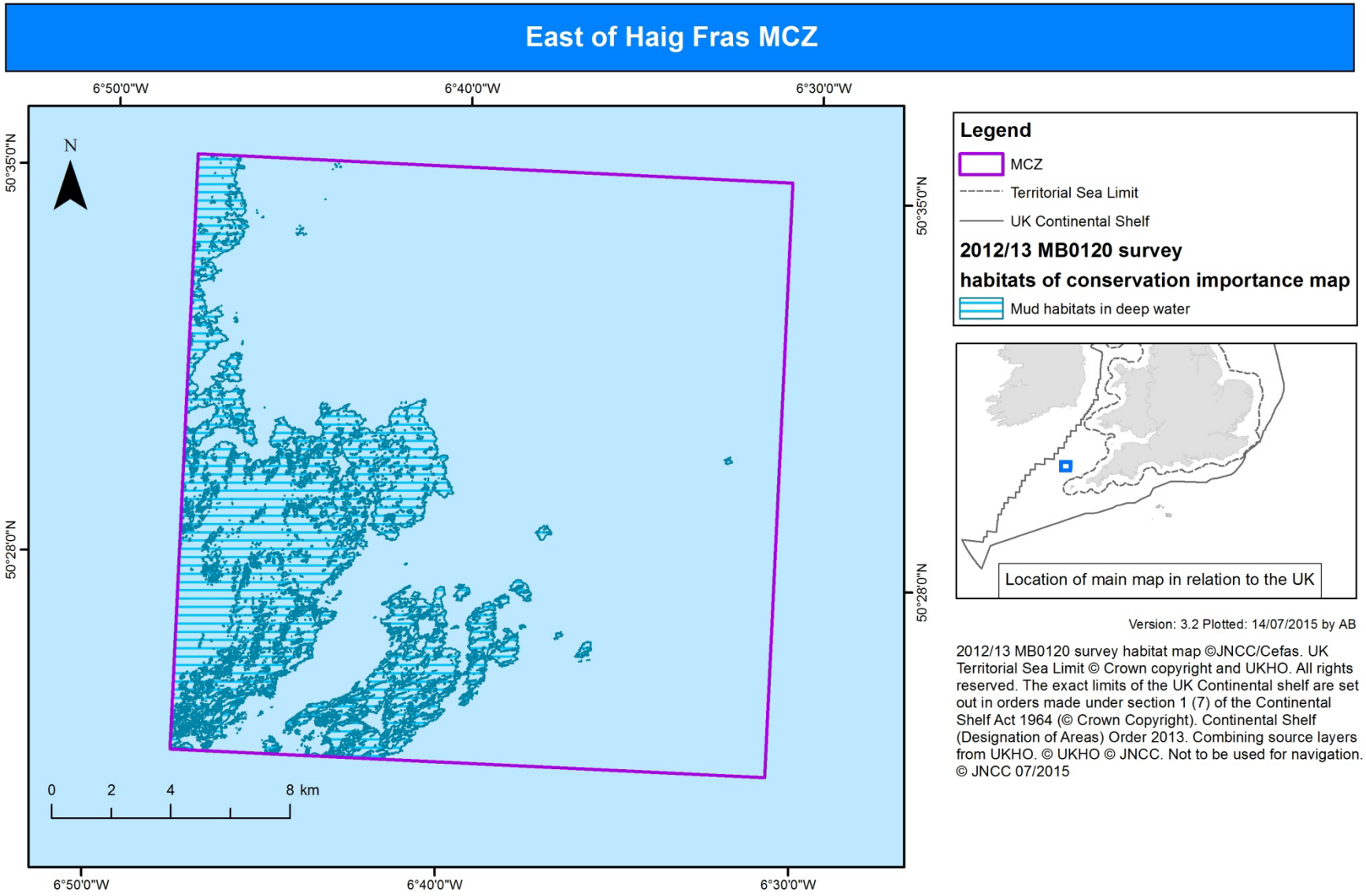


Figure 8: Distribution of the Features of Conservation Importance in East of Haig Fras MCZ

7.2 Farnes East pMCZ

Farnes East pMCZ was recommended by the Net Gain regional MCZ project[35] 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**. These features were recommended on the basis of maps derived from habitat models and information from stakeholders.

A new habitat map was produced in 2013 following an MB0120[18] survey that verified the presence of **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mud** and **Subtidal mixed sediments**, but did not identify any **Peat and clay exposures** in the site. The new habitat map also delineated areas of circalittoral rock, the parent habitat of **Moderate energy circalittoral rock**.

The habitat FOCI **Sea-pen and burrowing megafauna communities** was identified in the southern portion of the site, based on three ground-truth 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 species FOCI **Ocean quahog (*Arctica islandica*)** was 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[17] contract; however, there is no evidence to support fidelity of this species to the site (see Section 5.3 in JNCC's 2014 advice[8]).

7.2.1. Assessment of new data

JNCC assessed any requirement for revisions to its 2014 advice[8] in light of any new data available for the MCZ. The assessment followed the JNCC MCZ decision-tree process (see Section 6.1). The outcomes of the assessment are provided in Table 9, whereby the letters provided under the first and second branches relate to the outcome of the decision tree (see Figure 6). Where the application of the decision tree identified that no new advice was required, the 'Revised advice needed' cell in the table is highlighted in green. Cells highlighted in red indicate where new advice may be required for the feature, as summarised within the cell.

[35] Net Gain regional MCZ project website. Available at: http://webarchive.nationalarchives.gov.uk/20120502152849/http:/www.netgainmcz.org/index.php

Table 9: Outcomes of decision-tree process for features in Farnes East pMCZ

Feature	Previously assessed?	New data available?	Decision tree outcome	Revised advice needed?
Moderate energy circalittoral rock	Yes	Yes	**Branch 1 – Outcome B** Advice likely required for feature **Branch 2 – Outcome F** Consider whether revised feature condition advice required	Yes - Owing to new data gathered, there has been a significant change in feature extent and thus revised advice on confidence in feature extent is required. Further advice is provided on the condition of the feature given its change in extent and possible change in exposure to pressures.
Subtidal coarse sediment	Yes	Yes	**Branch 1 – Outcome C** Consider whether any changes may trigger change to GMA. If so, provided revised feature condition advice **Branch 2 – Outcome F** Consider whether revised feature condition advice required	No - Revised habitat extent following new data; however change in feature extent is minor and would not require modified advice from June 2014[8]. Updated VMS data (2009 – 2013) are consistent with the level of exposure presented in gridded 2006-09 VMS data for bottom contacting gears coincident with the feature. Minor extent change does not change exposure to abrasion/penetration pressures. Feature should remain as a Maintain GMA.
Subtidal sand	Yes	Yes		
Subtidal mud	Yes	Yes	**Branch 1 – Outcome C** Consider whether any changes may trigger change to GMA. If so, provided revised feature condition advice **Branch 2 – Outcome D** No revised advice likely required however check whether any new feature extent data	No - Revised habitat extent following new data; however change in feature extent is minor and would not require modified advice from June 2014[8]. Updated VMS data (2009–2013) are consistent with the level of exposure presented in 2006-09 VMS data for bottom contacting gears coincident with the feature. Minor extent change does not change exposure to abrasion/penetration pressures. Feature should remain as a Recover GMA.
Subtidal mixed sediments	Yes	Yes	**Branch 1 – Outcome C** Consider whether any changes may trigger change to GMA. If so, provided revised feature condition advice **Branch 2 – Outcome F** Consider whether revised feature condition advice required	No - Revised habitat extent following new data; however change in feature extent is minor and would not require modified advice from June 2014[8]. Updated VMS data (2009–2013) are consistent with the level of exposure presented in gridded 2006-09 VMS data for bottom contacting gears coincident with the feature. Minor extent change does not change exposure to abrasion/penetration pressures. Feature should remain as a Maintain GMA.
Mud habitats in deep water	Yes	Yes	**Branch 1 – Outcome C** Consider whether any changes may trigger change to GMA. If so, provided revised feature condition advice **Branch 2 – Outcome D** No revised advice likely required however check whether any new feature extent data	No - Revised habitat extent following new data; however change in feature extent is minor and would not require modified advice from June 2014[8]. Updated VMS data (2009 – 2013) are consistent with the level of exposure presented in 2006-09 VMS data for bottom contacting gears coincident with the feature. Minor extent change does not change exposure to abrasion/penetration pressures. Feature should remain as a Recover GMA.
Sea-pen & burrowing megafauna communities	Yes	Yes	**Branch 1 – Outcome A** No revised advice required **Branch 2 – Outcome D** No revised advice likely to be required, however check whether any new feature extent data	No - Updated VMS data (2009 - 2013) are consistent with the level of exposure presented in 2006-09 VMS data for bottom contacting gears coincident with the feature. Feature should remain as a Recover GMA.

Feature	Previously assessed?	New data available?	Decision tree outcome	Revised advice needed?
Ocean quahog (*Arctica islandica*)	Yes	Yes		No - There are no new biophysical data available for this feature since JNCC's 2014 advice[8], so no review of existing advice on feature presence or distribution is required. Updated VMS data (2009 - 2013) are consistent with the level of exposure presented in 2006-09 VMS data for bottom contacting gears coincident with the feature. Feature should remain as a Recover GMA.
Peat and clay exposures	Yes	Yes	**Branch 1 – Outcome B** Revised advice likely required for feature **Branch 2 – Outcome F** Consider whether revised feature condition advice required	Yes - Owing to new data gathered, revised advice is required for this habitat. These data do not support anecdotal reports of feature presence within the site.
Smelt (*Osmerus eperlanus*)	Yes	N/A	N/A	No - Not considered further following JNCC's 2014 advice[8] where this site does not demonstrate any evidence of site fidelity for this species

Following JNCC's 2014 advice[8], additional data were delivered to improve the knowledge of features found within Farnes East pMCZ. An MB0120[18] survey was undertaken in 2014 that aimed to gather data to support the presence of **Moderate energy circalittoral rock** within the site. Additionally the survey sought to confirm the feature **Peat and clay exposures** that had been indicated as being present in the site by a stakeholder during the Net Gain Regional MCZ project[35].

The outputs from the survey were used to produce an updated habitat map for the site, which has resulted in a change to the mapped extent of **Moderate energy circalittoral rock**, along with the extent of other features found in the site. Under the first branch of the JNCC MCZ decision-tree process, a revised assessment of the confidence in feature presence and extent is required for **Moderate energy circalittoral rock.**

Both the new habitat map and the one available during JNCC's 2014 advice[8] indicate areas of **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mud**, **Subtidal mixed sediments** and **Mud habitats in deep water** in the site. The location of these habitats on the new habitat map and ground-truth data correspond with the previous habitat map, with just minor changes in the habitat boundaries. These changes were not sufficient to require revised advice on their presence or extent, therefore JNCC's confidence in the presence and extent of **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mud**, **Subtidal mixed sediments** and **Mud habitats in deep water** remains **High**.

No new biophysical data are available for the habitat FOCI **Sea-pen and burrowing megafauna communities** or the species FOCI **Ocean quahog (*Arctica islandica*)** within the site. Therefore, following the JNCC MCZ decision-tree process a new assessment of confidence in feature presence and extent or feature condition is not required. Similarly, no new data have become available for the highly mobile species FOCI **Smelt (*Osmerus eperlanus*)** and JNCC's 2014 advice[8] remains unchanged, i.e. that there

is no evidence to support site fidelity for this species and therefore it should not be a designated feature of Farnes East pMCZ.

JNCC received updated fisheries data[31] (VMS aggregated 2009-2013) since its 2014 advice[8] for Farnes East pMCZ. These data were reviewed alongside the revised habitat map. Questionnaire-based information (Fishermap[36]) collected by the Net Gain regional project indicated potting activity within the site, which is likely to be conducted by vessels under 12m that are not captured in VMS data. The information does not contain any data on the location of the activity in the site or its intensity and therefore cannot be considered within a revised vulnerability analysis for the features of the site. Furthermore, it is likely that the activity would not cause a change in confidence in feature condition or advised GMA for the features of the site because exposure to the pressures associated with the activity are likely to be low. A comparison between the habitat map and new fisheries products alongside JNCC's 2014 advice[8], identified a continued **High** exposure to bottom contacting fishing gear within the south-east corner of the site within the mapped extent of **Subtidal mud** and **Mud habitats in deep water**. These features along with **Sea-pen and burrowing megafauna communities** and **Ocean quahog (*Arctica islandica*)** were all recommended a **Recover** GMA in JNCC's 2014 advice[8]. The new fisheries data do not indicate a significant change in activity levels over these features and following the decision-tree process, no further advice on feature condition is required for these features as it would not lead to a change in their GMA.

The broad-scale habitats **Subtidal coarse sediment**, **Subtidal sand** and **Subtidal mixed sediments**, were recommended a **Maintain** GMA in JNCC's 2014 advice[8]. Following the decision-tree process, JNCC needed to consider whether new feature-condition advice would be required for these features. The updated fisheries data were studied against the extent of these features to establish whether there was any increase in exposure to relevant pressures that may alter the recommended GMA. The data indicated an overlap between bottom-trawling activity and broad-scale habitats in the south-east of the site, and this includes features other than **Subtidal mud**. Having viewed the detailed VMS ping data[31] (indicating the actual vessel tracks) for 2009-2013, JNCC concluded these fishing activities were focused over the mapped extent of **Subtidal mud** feature only and that any suggested overlap with other features is most likely due to the coarse scale of the VMS grid.

A VMS grid cell in the west of the site indicated low levels of dredging activity over **Subtidal mixed sediments**. Due to the feature's high sensitivity to some pressures associated with this activity, low exposure could result in a moderate vulnerability suggesting a 'recover' GMA. However, the activity was a single fishing event in the five year period, and only occurred over a small proportion of the feature. This low level of exposure is therefore not considered sufficient to justify a change in the previous GMA. Consequently, JNCC reiterates its 2014 advice[8] that a **Maintain** GMA is appropriate for the broad-scale habitat features **Subtidal coarse sediment**, **Subtidal sand** and **Subtidal mixed sediments**.

[36] The English regional MCZ projects undertook structured interviews including a participatory mapping exercise whereby willing fishermen mapped the areas of sea where they had fished during the preceding five years (circa 2004-09) to provide a snapshot of the footprint of their activity.

JNCC have updated the vulnerability assessment tables presented our 2014 advice[8] - see Annex 5 of the current document.

7.2.2. Assessment of Feature Presence and Extent

Table 10: Farnes East pMCZ Evidence Assessment Summary

Site (Code)	Feature	Evidence Assessment Results			
		Confidence in presence	Rationale for confidence in feature presence	Confidence in extent	Rationale for confidence in feature extent
Farnes East pMCZ (NG 14)	**Moderate energy circalittoral rock**	**High** (High)	The presence of the feature is supported by a habitat map from survey, along with 12 sections of video on 12 separate tows displaying a continuous occurrence of rock.	**Moderate** (Low)	Habitat map from survey covers 100% of the site with ground-truth samples well-distributed across the site. However, due to the presence of polygons mapped as Moderate energy circalittoral rock without any supporting ground-truth points, Moderate confidence has been assigned.
	Peat and clay exposures	**No confidence** (Low)	No survey data available to support the presence of Peat and clay exposures. Ground-truth data collected in areas anecdotally reported as Peat and clay exposures indicates the presence of other habitats.	**No confidence** (Low)	No survey data available to determine the presence and extent of the feature within the site, and conflicting data where the feature was thought to occur.

The blue text represents the previous assessment score

Only a preliminary analysis of the ground-truth data from the MB0120[18] 2014 survey was available for JNCC's 2014 advice[8]. The video footage, still images and sediment samples have now been processed and used, along with the acoustic and ground-truth data from the previous 2012 MB0120[18] survey, to create an updated habitat map. The previous habitat map produced from the 2012 survey data did not have any ground-truth data supporting the presence of **Moderate energy circalittoral rock**; therefore all predicted areas of rock could not be given a more detailed classification than its parent feature **Circalittoral rock**. The revised habitat map indicates a smaller area of rock; however the additional ground-truth data means that it can be classified with greater confidence as **Moderate energy circalittoral rock** (see Figure 9). There are also minor differences in the mapped extent of **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mud**, **Subtidal mixed sediments** and **Mud habitats in deep water** in the revised habitat map.

JNCC advised our confidence in the presence of **Moderate energy circalittoral rock** within Farnes East pMCZ was **High** in 2014 advice[8]. This judgement was based on the preliminary analysis of ground-truth data collected during the MB0120[18] 2014 survey. Final analysis of these data identified 12 patches of **Moderate energy circalittoral rock** larger than 25m^2 from video tows. JNCC continues to have **High** confidence in feature presence (the methodology used for identifying the presence of rock is provided in Section 5.1 on page 45 of JNCC's 2014 advice[8]). Due to the absence of processed ground-truth data, a **Low** confidence score was previously given for the extent of **Moderate energy circalittoral rock** in Farnes East pMCZ. JNCC's confidence in the extent of the **Moderate energy circalittoral rock** has increased based on the updated habitat map with supporting ground-truth data (see Table 10). However,

the new habitat map includes areas of **Moderate energy circalittoral rock** that do not overlap with the survey video tows. Therefore, expert judgement has been used to reduce the confidence score in feature extent from **High**, as would be allowed under Technical Protocol E[27], to **Moderate**.

Previously in our 2014 advice[8], JNCC had **Low** confidence in the presence and extent of the **Peat and clay exposures** feature owing to it having only anecdotal evidence to support it within the site. Following targeted survey effort in 2014 through MB0120[18], no additional data were gathered that verified the presence of the feature within the site. Effort was made to locate the feature in areas where it could be expected to be found (i.e. based on the anecdotal evidence and/or within certain geological and physiological conditions) however; data supporting the presence of other habitat features were recorded. Therefore, JNCC has **No confidence** in the presence and extent of **Peat and clay exposures** within Farnes East pMCZ. This does not rule out that the feature may yet be present within the site, but does conclude that there is currently no substantial and verified presence in the site. It is possible that there are isolated pockets of the habitat within suitable areas of the site. The **No confidence** score in feature presence and extent is based on the conflicting data showing other habitats being present within areas identified anecdotally as **Peat and clay exposures**.

7.2.3. Advice on the General Management Approach for MCZ features

A summary of JNCC's assessments of confidence in feature condition and the GMA proposed is presented below in Table 11 (see Section 6.2.3 for the approach). Further information on the vulnerability assessments is provided in Annex 5. Details on those pressures to which features are currently **Moderately** or **Highly** vulnerable are presented in Table 167 on page 530 of our 2014 advice[8]. This includes updated information alongside features that did not require further analysis following the JNCC MCZ decision-tree process.

Table 11: Summary of JNCC's conservation advice for features in Farnes East pMCZ

Site (Code)	Feature	Confidence in feature condition (MCZ Technical Protocol F)[29]	General Management Approach advised (MCZ Conservation Objective Guidance)[34]
Farnes East pMCZ (NG 14)	**Moderate energy circalittoral rock**	**Low** (Low)	**Maintain** (Maintain)
	Peat and clay exposures	**Not assessed** (Low)	**Not assessed** (Maintain)

The blue text represents the previous assessment score

As there is **No confidence** in the presence or extent of **Peat and clay exposures** within Farnes East pMCZ, an assessment of the confidence in feature condition for this feature is not possible.

Considering the revised mapped extent for **Moderate energy circalittoral rock** with the gridded 2009-13 VMS data[31], it appears that some small areas of the feature are potentially exposed to low levels of bottom-contact fishing activity in the south-east of the site. However, cross-referencing with the more detailed VMS ping data showing actual vessel position for the same time period together with additional information

provided during the public consultation, it is unlikely that the moderate energy circalittoral rock feature overlaps with the prevailing demersal fishing activity; it appears the fishers are targeting mud habitats. Any perceived overlap is probably due to the aggregation of the fishing effort data to the coarser grid-scale used in the standard assessment. Therefore JNCC continues to advise a **Maintain** GMA for **Moderate energy circalittoral rock**.

7.2.4. Confidence in Feature condition

Technical Protocol F[29], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to low unless further criteria are satisfied. No additional information is available to support any change from the default judgement. JNCC have **Low** confidence in feature condition for **Moderate energy circalittoral rock**. An assessment cannot be made for **Peat and clay exposures**.

7.2.5. Feature Risk

Feature risk remains unchanged since JNCC's advice in 2014[8] for all features other than **Peat and clay exposures** proposed for designation in this site. **Peat and clay exposures** are no longer considered as a feature of the site as there are no data to support its presence, and therefore cannot be considered at risk of damage.

7.2.6. Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site have appropriate data to support their designation following the method outlined in Section 6.2.5 of this advice. The assessment and results are presented in Table 12 and Table 13 below.

Feature assessment

Table 12: Farnes East pMCZ feature data sufficiency assessment

Site (Code)	Feature	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 pMCZ (NG 14)	**Moderate energy circalittoral rock**	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**
	Subtidal coarse sediment	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**
	Subtidal sand	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**
	Subtidal mud	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**
	Subtidal mixed sediments	**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 support designation of feature**

Site (Code)	Feature	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
	Sea-pen and burrowing megafauna communities	**Yes** (Moderate confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**
	Ocean quahog (*Arctica islandica*)	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**

Site level assessment

Table 13: Farnes East pMCZ 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?	**JNCC 2014 Advice** ***"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 do not 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 pMCZ means that it is a good option to fill multiple big gaps within the region.* ***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 Charting Progress 2 region):* - *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 do not have any data to prove the 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, which is the Pobie Bank Reef SAC.* - *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 pMCZ and North East of Farnes Deep MCZ.*

	- *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 pMCZ and Runswick Bay pMCZ.* - *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 pMCZ and North East of Farnes Deep MCZ.* - *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.* - *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 pMCZ and North-East of Farnes Deep MCZ.* - *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.* ***Adequacy** (seeking protection of at least 10% area of each EUNIS Level 3 habitat within each CP2 region):* - *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 do not have any data to prove the presence of this feature in Compass Rose rMCZ.* - *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).* - *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).* - *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.* ***Connectivity** (ensuring that sites affording protection to the same habitat at EUNIS Level 2 are not further than 80km apart):* - *It is the only option to fill a spatial gap in the region for **Circalittoral rock**."* **JNCC 2015 Updated Advice** Since advice was provided in 2014[8], **Peat and clay exposures** does not have sufficient data to be considered as a feature of the site and therefore the site would no longer contribute to filling any gaps for Peat and clay exposures.

7.2.7. Feature maps

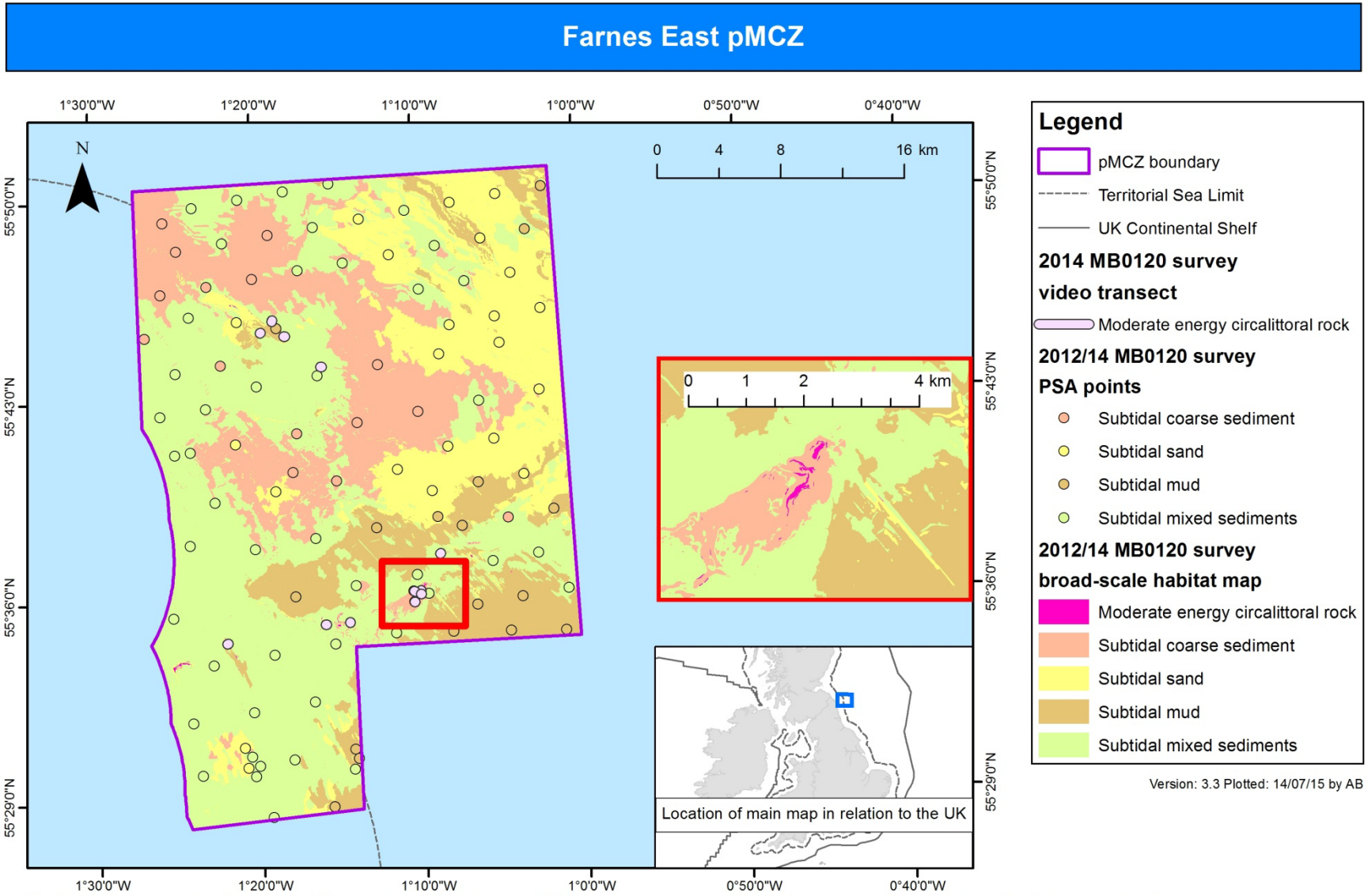


Figure 9: **Distribution of broad-scale habitats in Farnes East pMCZ**

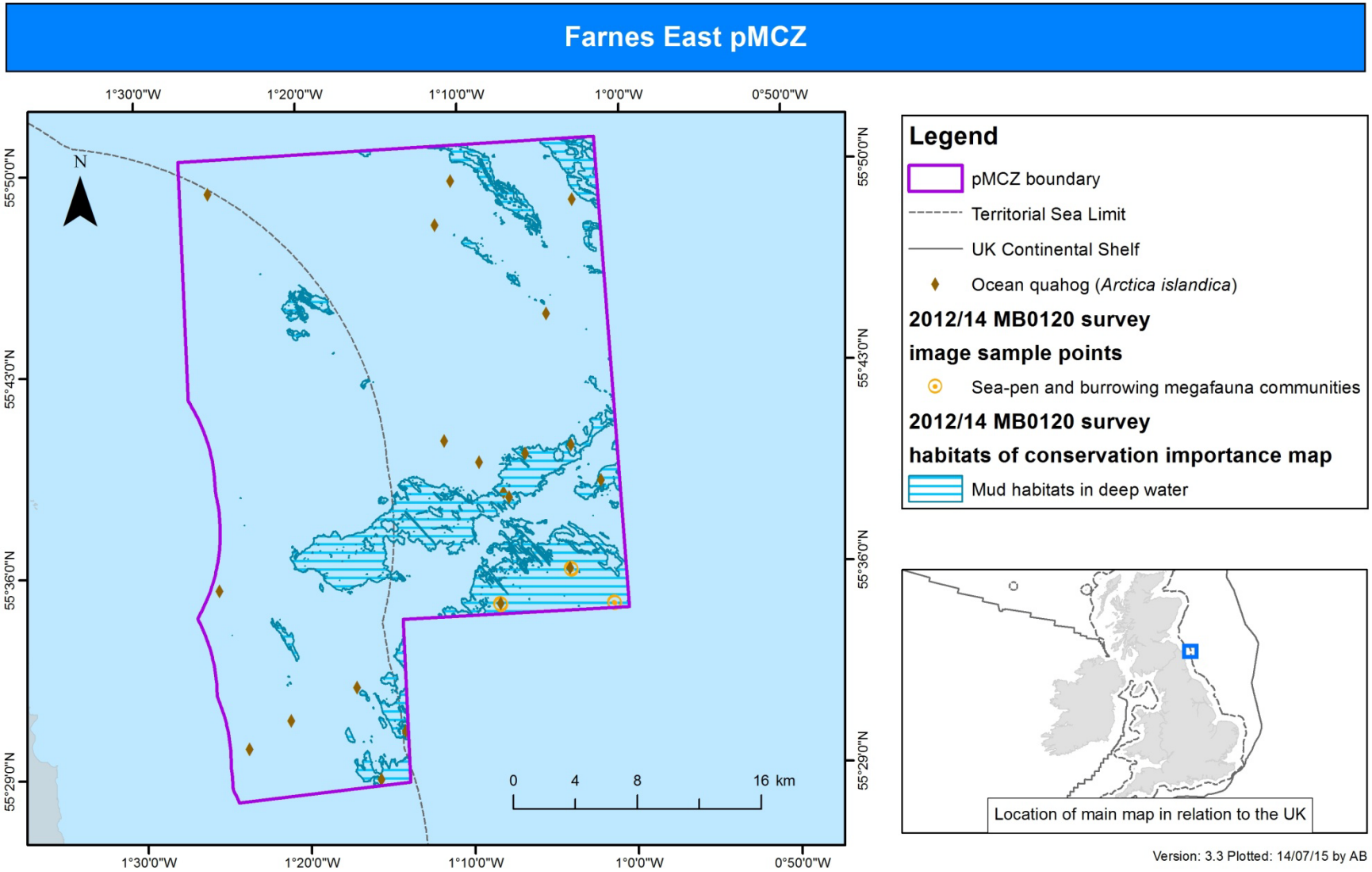


Figure 10: Distribution of the Features of Conservation Importance in Farnes East pMCZ

7.3. Fulmar pMCZ

JNCC provided advice on Fulmar pMCZ in 2014[8] as part of the package of offshore rMCZs being considered for designation by Defra in Tranche Two. Our advice considered the following features: **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mud**, **Subtidal mixed sediments**, **Mud habitats in deep water**, **Ocean quahog** (***Arctica islandica***), **Smelt** (***Osmerus eperlanus***), **Native oyster** (***Ostrea edulis***), **Amphipod shrimp** (***Gitanopsis bispinosa***) and **Undulate ray** (***Raja undulata***).

7.3.1. Assessment of new data

JNCC assessed any requirement for revisions to its 2014 advice[8] in light of any new data available for the MCZ. The assessment followed the JNCC MCZ decision-tree process (see Section 6.1). The outcomes of the assessment are provided in Table 14, whereby the letters provided under the first and second branches relate to the outcome of the decision tree (see Figure 6). Where the application of the decision tree identified that no new advice was required, the 'Revised advice needed' cell in the table is highlighted in green. Cells highlighted in red indicate where new advice may be required for the feature, as summarised within the cell.

Table 14: Outcomes of decision-tree process for features in Fulmar pMCZ

Feature	Previously assessed?	New data available?	Decision tree outcome	Revised advice needed?
Subtidal coarse sediment	Yes	Yes	**Branch 1 – Outcome A** No revised advice required **Branch 2 – Outcome D** No revised advice likely required however check whether any new feature extent data	No - No new biophysical data to support the presence and extent of this habitat. No revised advice on the confidence in feature presence and extent required. Updated VMS data (2009–2013) are consistent with the level of exposure presented in 2006-09 VMS data for bottom contacting gears coincident with the feature.
Subtidal sand	Yes	Yes	**Branch 1 – Outcome B** Revised advice likely required for feature **Branch 2 – Outcome F** Consider whether revised feature condition advice required	Yes - Owing to new data gathered, there is potential for a change to JNCC's 2014 advice[8] on the confidence of feature extent. Therefore revised advice is required on the confidence in feature extent. Additionally, due to updated 2009-13 VMS data and new information about feature extent, an updated assessment in the confidence of feature condition is required.
Subtidal mud	Yes	Yes		
Subtidal mixed sediments	Yes	Yes		
Mud habitats in deep water	Yes	Yes		
Ocean quahog (*Arctica islandica*)	Yes	Yes	**Branch 1 – Outcome A** No revised advice required **Branch 2 – Outcome F** Consider whether revised feature condition advice required	Yes - Since JNCC's 2014 advice[8], no new biophysical data have been received that support the presence and extent of this species within the site, and therefore no revised advice is required. Updated VMS data (2009 – 2013) broadly agrees with the level of exposure presented in 2006-09 VMS data for bottom contacting gears coincident with the feature. Therefore a change in GMA is unlikely however as feature was advised with a Maintain GMA, this needs to be reviewed further.
Smelt (*Osmerus eperlanus*)	Yes	N/A	N/A	No - Not considered further following JNCC's 2014 advice[8] where this site does not demonstrate any evidence of site fidelity for this species

Native oyster (***Ostrea edulis***), **Amphipod shrimp** (***Gitanopsis bispinosa***) and **Undulate ray** (***Raja undulata***) had been identified as potentially occurring within the site, but were not assessed in JNCC's 2014 advice for the site[8]; as the data do not confirm their presence as a feature of the site. No new data have become available for these features and therefore no further advice is required.

JNCC have not received any new data for **Subtidal coarse sediment** or **Ocean quahog** (***Arctica islandica***) since our 2014 advice[8]. Therefore under the first branch of the JNCC MCZ decision-tree process the features have been assigned an 'A' category (see Figure 6), indicating no revised advice is required. JNCC note that while there are no new data to provide an improved understanding of the extent of **Subtidal coarse sediment**, a new map derived from a habitat model has been produced by British Geological Survey (**BGS**) that updates the predicted distribution of habitats across Fulmar pMCZ. However, this recent map does not trigger any change to JNCC's 2014 advice[8] on the confidence in feature extent of **Subtidal coarse** sediment because the habitat is not present in the revised map and therefore would retain a Low confidence in feature extent as the only knowledge of extent are the four ground-truthing data points. **Subtidal coarse sediment** is not present because the revised model uses data gathered from Particle Size Analysis (**PSA**) samples taken during MB0120[18] only and no **Subtidal coarse sediment** samples were gathered during that survey[37]. This continues to mean JNCC can only determine the feature extent based on four ground-truthing data points. **Subtidal coarse sediment** was advised with a **Recover** GMA in JNCC's 2014 advice[8] and with no new information in the extent of the feature; no revised advice is required on feature condition in line with the second branch of the JNCC MCZ decision tree and a category 'D' assignment.

There is new biophysical information available for the **Subtidal sand**, **Subtidal mud**, **Subtidal mixed sediments** and **Mud habitats in deep water** features since JNCC's 2014 advice[8]. This new information may alter the confidence in the extent of these features and as a result they have been assigned a 'B' category under the first branch of the JNCC MCZ decision-tree process indicating revised advice is necessary.

The broad-scale habitat **Subtidal sand**, **Subtidal mud**, **Subtidal mixed sediments**, **Mud habitats in deep water** and **Ocean quahog** (***Arctica islandica***) were all advised with a **Maintain** GMA in JNCC's 2014 advice[8]. JNCC received updated fisheries data[3131] (2009-2013) since its 2014 advice[8] for Fulmar pMCZ. These features also have new information about their extent and therefore they were assigned an 'F' category under the JNCC MCZ decision-tree process. Revised advice on confidence in feature condition is required.

No new data on the fidelity of **Smelt (*Osmerus eperlanus*)** to Fulmar pMCZ have been received since JNCC's 2014 advice[8]. Therefore no further advice is required for this species.

[37] BGS 2015. Mapping seabed sediments of the Fulmar rMCZ Marine Geological Mapping Programme Open Report OR/15/015 Available: http://nora.nerc.ac.uk/510587/1/OR15015.pdf

JNCC have updated the vulnerability assessment tables presented in our 2014 advice[8] - see Annex 5 of the current document.

7.3.2. Assessment of Feature Presence and Extent

Table 15: Fulmar pMCZ Evidence Assessment Summary

Site (Code)	Feature	Evidence Assessment Results			
		Confidence in presence	Rationale for confidence in feature presence	Confidence in extent	Rationale for confidence in feature extent
Fulmar pMCZ (NG 17)	**Subtidal sand**	**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** (Low)	Expert judgement applied to assign a Low confidence in extent due to low level of agreement between ground –truth data and modelled maps.
	Subtidal mud	**High** (High)	There are 49 ground-truth data points (from two surveys) which demonstrate the presence of Subtidal mud in the site.	**Moderate** (Moderate)	The feature is modelled to occur across most of the site, with MB0120[18] data supporting its widespread occurrence. JNCC analysis also indicates the widespread occurrence of muddy biotopes across the site. A Moderate confidence in the extent of Subtidal mud is advised due to conflicting data indicating the presence of Subtidal sand within the modelled extent of the feature.
	Subtidal mixed sediments	**High** (High)	There are six ground-truth samples which demonstrate the presence of Subtidal mixed sediments in the site.	**Moderate** (Low)	Habitat is mapped within the MB0120[18] habitat map and supported by four ground-truth points. Moderate confidence is assigned as there are areas of the feature not supported by ground-truth data and as the feature likely extends beyond the areas mapped by MB0120[18].
	Mud habitats in deep water	**High** (High)	There are 48 ground-truth data points which demonstrate the presence of Mud habitats in deep water in the site.	**Moderate** (Moderate)	The feature is also modelled to occur across most of the site, with MB0120[18] data supporting its widespread occurrence. JNCC analysis also indicates the widespread occurrence of muddy biotopes across the site. A Moderate confidence in the extent of Mud habitats in deep water is advised due to conflicting data indicating the presence of Subtidal sand within the mapped extent of the feature.
	Ocean quahog (*Arctica islandica*)	**High** (High)	There are nine records found within the last six years which demonstrate the presence of the species in the site.	**High** (High)	Nine records within the last six years identify the species in multiple locations, which demonstrate the distribution of the species in the site.

The blue text represents the previous assessment score

The site was surveyed as part of an MB0120[18] survey in 2012, which collected sediment PSA samples, video transects, still images and transit multibeam coverage between stations. Additional information collated by MB0116[17] identified datasets that 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-truth samples available from BGS and their agreement with the habitat map derived from habitat models developed by the UKSeaMap[38] project.

Since JNCC's 2014 advice[8] on Fulmar pMCZ, a partial coverage habitat map from MB0120[18] has been developed. This habitat map covers two blocks in the site where acoustic data were gathered – one in the south-west and one in the south-east. In addition to this, JNCC commissioned BGS to produce a revised modelled map for the site to update the existing EUSeaMap[39] modelled map. This model used data gathered only from MB0120[18] and not data collected by BGS between 1975 and 1980.

As explained in JNCC's 2014 advice[8], there appeared to be a significant contradiction between the MB0120[18] and BGS data where their respective samples fell 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. It was therefore felt an updated habitat model based solely on the most recent MB0120[18] data would be logical in order to determine the likely extent of features found in the site. This does not mean that the older BGS data are disregarded in JNCC's scientific advice for the site – they still provide important information about the features likely to be found in the site and these data continue to be used accordingly in JNCC's 2015 advice for Fulmar pMCZ.

Considering the new MB0120[18] habitat map alongside the revised modelled map for the site, JNCC's MCZ decision-tree process indicates revised advice for the extent of most features within the site is required.

Subtidal sand has been found within Fulmar pMCZ on multiple surveys by both BGS and MB0120[18]. JNCC's 2014 advice[8] on the presence and extent of the feature was verified by 75 seabed samples from a variety of surveys including BGS, MB0120[18] and other Cefas studies. With multiple ground-truth data identifying the presence of **Subtidal sand** within the site, JNCC continues to advise a **High** confidence in the presence of the feature (see Table 15). In JNCC's 2014 advice[8], a low confidence in feature extent was assigned to **Subtidal sand** due to uncertainties in the mapped extent of the feature in EUSeaMap[39] conflicting with data gathered through MB0120[18]. Additionally, a basic analysis of the fauna from samples that were obtained during the 2012 MB0120[18] survey showed the infaunal community across the many of the areas mapped as **Subtidal sand** was most similar to circalittoral mud and sandy mud biotopes. Since JNCC's 2014 advice[8], a new MB0120[18] habitat map is available for part of the site along with a revised modelled map of the site. The MB0120[18] habitat map does not map any **Subtidal sand** in the site, but the modelled map revises the extent of **Subtidal sand** to two patches in the north and east respectively. These patches are supported by ground-truth data gathered through MB0120[18]. The result of which is a greater degree of certainty in the extent of those modelled patches of Subtidal sand supported by ground-truth data. Nevertheless, the uncertainties in the mapped extent of the feature within the remainder of site still remain and thus JNCC continues to have **Low** confidence in the extent of **Subtidal sand** over the whole of

[38] UKSeaMap – predicting mapping of seabed habitats. Available at: http://jncc.defra.gov.uk/ukseamap/
[39] EUSeaMap – mapping European seabed habitats. Available at: http://jncc.defra.gov.uk/euseamap

Fulmar pMCZ. **Low** confidence was considered appropriate on the basis of expert judgement as BGS data samples exist that indicate the presence of **Subtidal sand** in areas across the site not modelled to be the feature. These contradicting datasets reduce our confidence in the extent of **Subtidal sand** in the site. Additionally, JNCC's 2014 biological analysis indicates the presence of circalittoral mud and sandy mud biotopes across the site but based on only a subset of the data. It is likely that the area comprises a mosaic of a range of sedimentary habitats but due to the size of the site, our sampling and mapping ability is unable to resolve such spatial complexity. Therefore there remains some uncertainty about the true extent of **Subtidal sand** based on the limited and conflicting data available.

Subtidal mud and **Mud habitats in deep water** had not previously been recommended for this site prior to JNCC's 2014 advice[8]. Data verifying the presence of these features comprises a single BGS sediment point (identifying Subtidal mud only) and 48 samples collected during the MB0120[18] survey. JNCC had **High** confidence in the presence of the features within this site in 2014 and our advice remains unchanged in 2015. We had moderate confidence in feature extent in 2014 due to the uncertainties created by conflicting data (see above text on Subtidal sand). The new mapping products now available allowed JNCC to revisit our assessment in 2015. The MB0120[18] habitat map demonstrates the predominance of mud within two blocks in the south-west and south-east of the site. This conclusion is supported by ground-truth data gathered through MB0120[18]. The revised habitat model of the site also shows the distribution of the feature to be across the majority of the site, however, whilst 'Mud and sandy mud' is delineated as most-probable over most of the pMCZ, and the probability of this class is largest in the west of the area, the class 'Sand and muddy sand' has comparable probabilities over much of the area. Whilst there is a wide spatial distribution of samples identifying the feature across the site with supporting mapping products, there still remains significant contradiction between the MB0120[18] and BGS data where their respective samples fall in broadly similar locations. Considering all data available, JNCC continues to have only **Moderate** confidence in extent for both **Subtidal mud** and **Mud habitats in deep water**.

Subtidal mixed sediments was also a new feature considered for Fulmar pMCZ in JNCC's 2014 advice[8] that had been identified by the MB0120[18] survey. Six samples were gathered through MB0120[18] supporting the presence of the feature within the site, predominately located in the south west corner. 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 was sufficient for JNCC to have **High** confidence in the presence of **Subtidal mixed sediments** in 2014 and our advice remains unchanged in 2015. In 2014, JNCC advised **Low** confidence in the extent of **Subtidal mixed sediments** in the site. The MB0120[18] habitat map covering 13% of the site is now available. This map includes the south-west portion of the site where four of the six ground-truth samples for **Subtidal mixed sediments** are located. Consequently there is a mapped extent for this feature within the MB0120[18] map but no extent has been mapped within the revised modelled map from BGS. Considering all data available, JNCC has a **Moderate** confidence in feature extent within the site because the feature is not modelled elsewhere in the site despite further data to support its presence. However, it is unlikely there would be a substantial amount of **Subtidal mixed sediments** in areas that are mapped or modelled as other habitats, mainly because JNCC's 2014 biological analysis indicated the

presence of circalittoral mud and sandy mud biotopes across much of the site. It should be noted that there remains some inherent uncertainty in this assessment as the feature has benefitted from increased sampling effort in the south-west corner of the site. Judgements on other features within the site 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.

7.3.3. Advice on the General Management Approach for MCZ features

A summary of JNCC's assessments of confidence in feature condition and the GMA proposed are presented below in Table 16 (see Section 6.2.3 for the approach). Further information on the vulnerability assessments is provided in Annex 5.

Table 16: **Summary of JNCC's conservation advice for features in Fulmar pMCZ**

Site (code)	Feature	Confidence in feature condition (MCZ Technical Protocol F)[29]	General Management Approach advised (MCZ Conservation Objective Guidance)[34]
Fulmar pMCZ (NG 17)	**Subtidal sand**	**Low** *(Low)*	**Maintain** *(Maintain)*
	Subtidal mud	**Low** *(Low)*	**Maintain** *(Maintain)*
	Subtidal mixed sediments	**Low** *(Low)*	**Maintain** *(Maintain)*
	Mud habitats in deep water	**Low** *(Low)*	**Maintain** *(Maintain)*
	Ocean quahog (*Arctica islandica*)	**Low** *(Low)*	**Maintain** *(Maintain)*

The blue text represents the previous assessment score

JNCC continues to advise a **Maintain** GMA for **Subtidal sand, Subtidal mud, Subtidal mixed sediments and Mud habitats in deep water** because they are not considered vulnerable to any pressures associated with ongoing activities; see Annex 5 for further details on the vulnerability assessments for these features.

7.3.4. Confidence in feature condition

Technical Protocol F[29], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to 'low' unless further criteria are satisfied. As noted in JNCC's 2014 advice[8], these criteria were not met for all features within this site and therefore JNCC continue to have **Low** confidence in the condition of all features.

7.3.5. Feature Risk

Feature risk remains unchanged since JNCC's advice in 2014[8] for all features in Fulmar pMCZ (Section 6.4.4 on page 107 of 2014 advice[8]).

7.3.6. Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site have appropriate data to support the designation following the method outlined in Section 6.2.5 of this advice. The assessment and results are presented in Table 17, Table 18 and Table 19 below.

Feature assessment

Table 17: **Fulmar pMCZ feature data sufficiency assessment**

Site (Code)	Feature	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
Fulmar pMCZ (NG 17)	**Subtidal coarse sediment**	**Yes** (Moderate confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment (see Table 18)**
	Subtidal sand	**Yes** (High confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment (see Table 18)**
	Subtidal mud	**Yes** (High confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**
	Subtidal mixed sediments	**Yes** (High confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**
	Mud habitats in deep water	**Yes** (High confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**
	Ocean quahog (*Arctica islandica*)	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**

Table 18: Fulmar pMCZ assessment of additional conservation/ecological considerations

Site (Code)	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
Fulmar pMCZ (NG 17)	**Subtidal coarse sediment**	**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 notes that the feature is not at high risk of damage and there are only 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	**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.

Site level assessment

Table 19: **Fulmar pMCZ 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 50%**
Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?	**JNCC 2014 Advice** ***"Does this site contribute to filling a big gap in the network?*** ***Yes****. Fulmar pMCZ 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.* ***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):* - *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 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 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 pMCZ and North East of Farnes Deep MCZ.* - *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 are 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 pMCZ and North East of Farnes Deep MCZ.* - *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 pMCZ and North East of Farnes Deep MCZ.* ***Adequacy*** *(seeking protection of at least 10% area of each EUNIS Level 3 habitat within each CP2 region):* - *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 are 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.*

	- *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).* - *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.* ***Connectivity** (ensuring that sites affording protection to the same habitat at EUNIS Level 2 are not further than 80km apart):* - *The site would fill a spatial gap in the region for **Subtidal sediment** within the region."* **JNCC 2015 Updated Advice** Subtidal coarse sediment was not put forward by Defra as a feature for designation in 2015 and therefore if not designated would not contribute to filling any gaps in the MPA network.

7.3.7. Feature maps

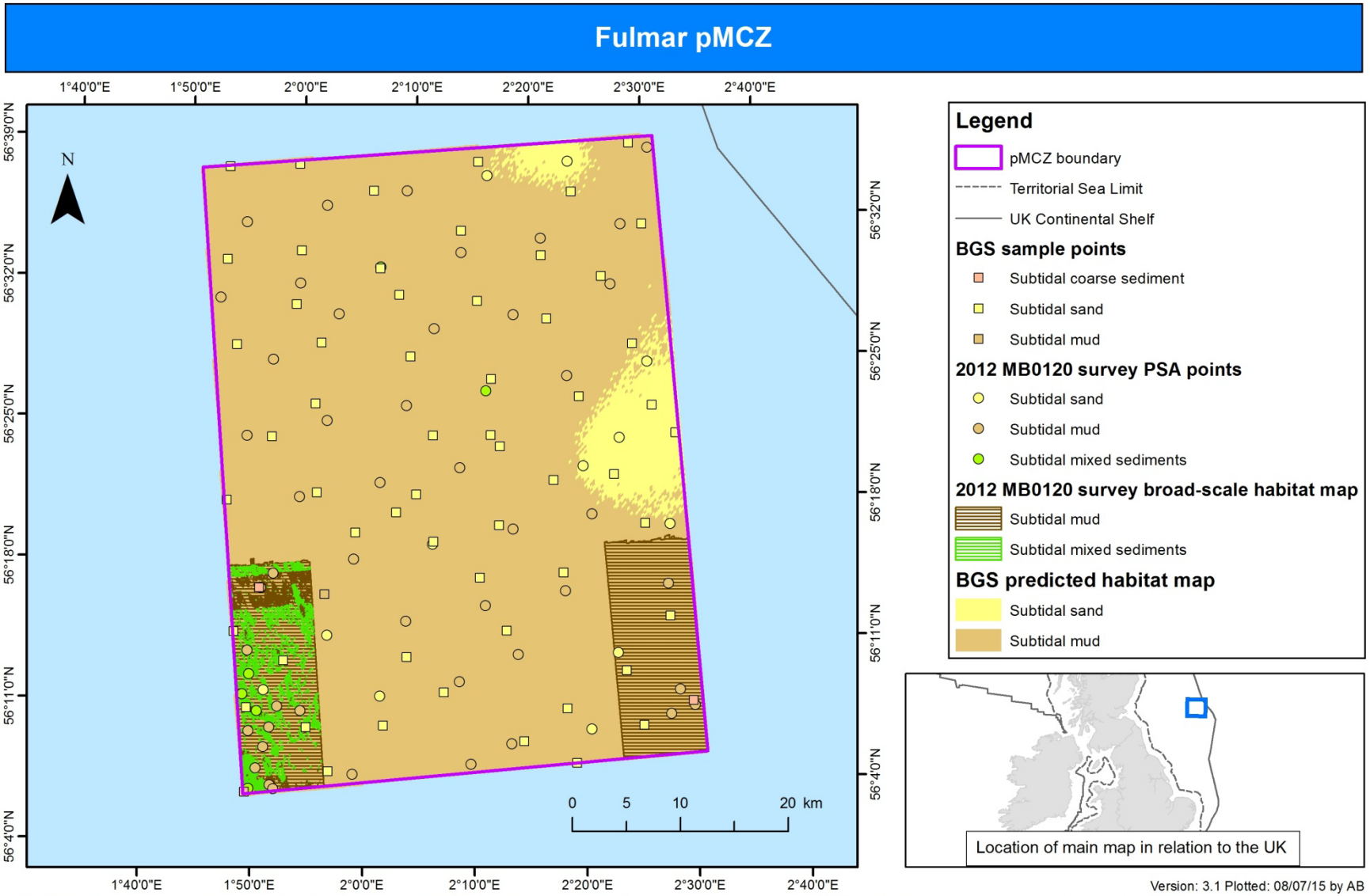
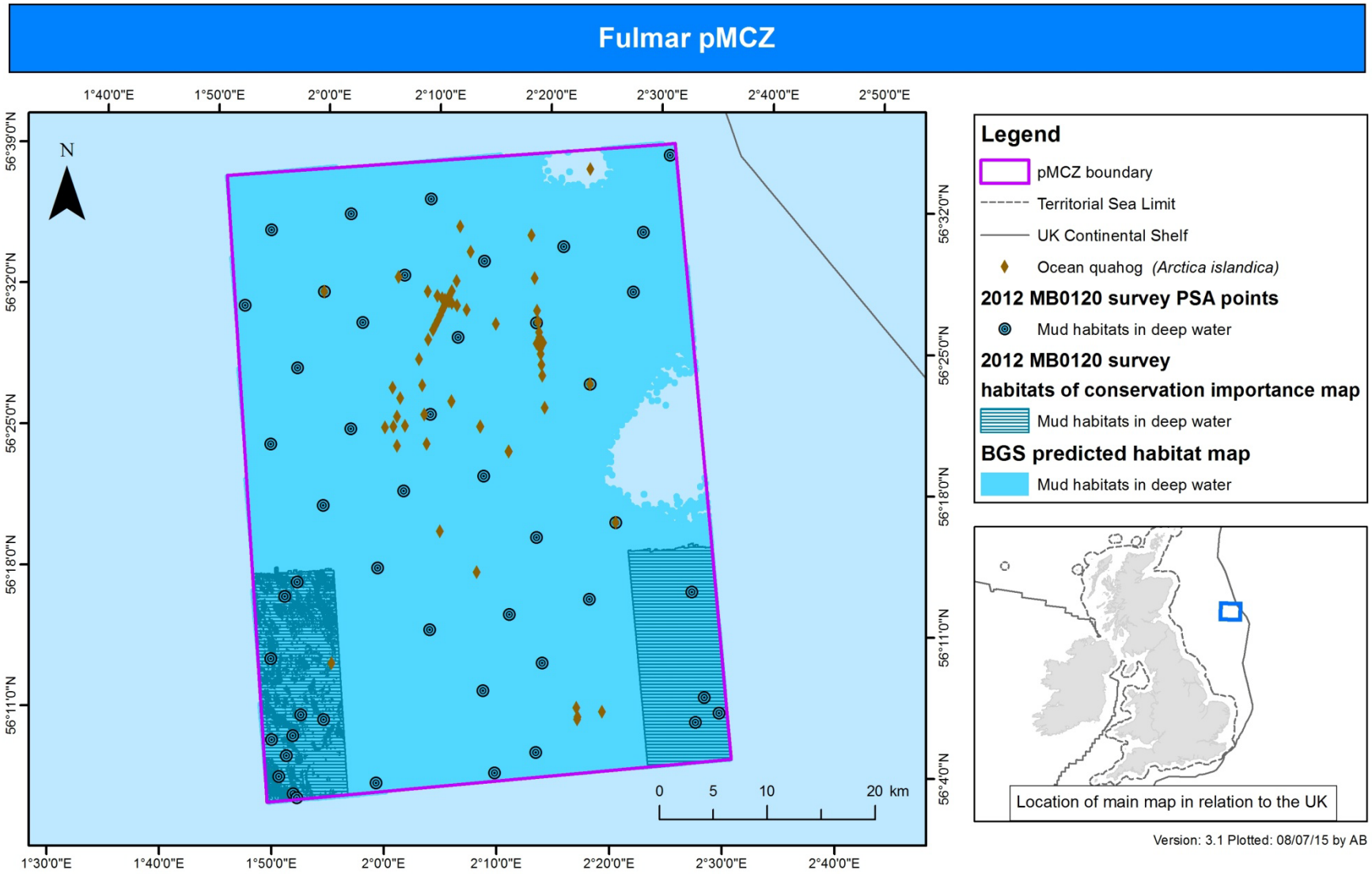


Figure 11: Distribution of broad-scale habitats in Fulmar pMCZ



2012 MB0120 survey data and BGS predicted habitat map ©JNCC/Cefas. 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 07/2015

Figure 12: Distribution of the Features of Conservation Importance in Fulmar pMCZ

7.4. Greater Haig Fras pMCZ

Greater Haig Fras rMCZ was recommended by the Finding Sanctuary regional MCZ project[40] for the broad-scale habitats **Moderate energy circalittoral rock**, **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mud**, and **Subtidal mixed sediments** and the geological feature **Haig Fras Rock Complex**.

In JNCC's 2014 advice[8], the habitat FOCI **Mud habitats in deep water** and species FOCI **Fan mussel (*Atrina fragilis*)** were also recommended as possible designated features of Greater Haig Fras pMCZ.

In 2015, JNCC is now providing advice on the habitat FOCI **Sea-pen and burrowing megafauna communities** and a mosaic of the broad-scale habitats **Subtidal coarse sediment / Subtidal mixed sediments,** which were not previously assessed in 2014[8]. JNCC is not providing advice on the feature **Moderate energy circalittoral rock**, as this feature is protected through the Haig Fras candidate Special Area of Conservation and Site of Community Importance (**cSAC/SCI**) and should not be included as a protected feature of Greater Haig Fras pMCZ.

7.4.1. Assessment of new data

JNCC assessed any requirement for revisions to its 2014 advice[8] in light of any new data available for the MCZ. The assessment followed the JNCC MCZ decision-tree process (see Section 6.1). The outcomes of the assessment are provided in Table 20, whereby the letters provided under the first and second branches relate to the outcome of the decision tree (see Figure 6). Where the application of the decision tree identified that no new advice was required, the 'Revised advice needed' cell in the table is highlighted in green. Cells highlighted in red indicate where new advice may be required for the feature, as summarised within the cell.

Table 20: Outcomes of decision-tree process for features in Greater Haig Fras pMCZ

Feature	Previously assessed?	New data available?	Decision tree outcome	Revised advice needed?
Subtidal coarse sediment	Yes	Yes	**Branch 1 – Outcome B** Revised advice likely required for feature **Branch 2 – Outcome D** No revised advice likely required however check whether any new feature extent data	Yes - A habitat map covering 50% of the site is available since JNCC's 2014 advice[8]. This habitat map presents Subtidal coarse sediment as a mosaic habitat with Subtidal mixed sediments. As an individual feature, it is likely JNCC's confidence in extent will change as a result of the new information received. Therefore revised advice on the feature is required. No new advice on feature condition is required. Despite a revised extent, both component habitats of the mosaic were advised with a 'Recover' GMA and evidence of incident pressures from updated VMS data (2009 – 2013) does not change this previous view.

[40] Finding Sanctuary regional MCZ project website. Available at: http://webarchive.nationalarchives.gov.uk/20120502155448/http://www.finding-sanctuary.org

Feature	Previously assessed?	New data available?	Decision tree outcome	Revised advice needed?
Subtidal sand	Yes	Yes		Yes - A habitat map covering 50% of the site is available since JNCC's 2014 advice[8]. Extent of habitat has changed and likely confidence in extent will need to be revised. Therefore confidence in feature extent advice required. No new advice on feature condition is required as despite a revised extent, all habitats in the site were advised with a 'Recover' GMA and evidence of incident pressures from updated VMS data (2009–2013) does not change this previous view.
Subtidal mud	Yes	Yes	**Branch 1 – Outcome C** Consider whether any changes may trigger change to GMA. If so, provided revised feature condition advice **Branch 2 – Outcome D** No revised advice likely required however check whether any new feature extent data	No - A habitat map covering 50% of the site is available since JNCC's 2014 advice[8]. Extent of Subtidal mud presented in new habitat map is consistent with that previously known and used in JNCC's 2014 advice[8]. No new advice on feature condition is required as despite a revised extent, all habitats in the site were advised with a 'Recover' GMA and evidence of incident pressures from updated VMS data (2009–2013) does not change this previous view. Therefore no revised advice required for Subtidal mud
Subtidal mixed sediments	Yes	Yes	**Branch 1 – Outcome B** Revised advice likely required for feature **Branch 2 – Outcome D** No revised advice likely required however check whether any new feature extent data	Yes - A habitat map covering 50% of the site is available since JNCC's 2014 advice[8]. This habitat map presents Subtidal mixed sediments as a mosaic habitat with Subtidal coarse sediment. As an individual feature, it is likely JNCC's confidence its extent will change as a result of the new information received. Therefore revised advice on the feature is required. No new advice on feature condition is required as despite a revised extent, both component habitats of the mosaic were advised with a 'Recover' GMA and evidence of incident pressures from the updated VMS data (2009–2013) does not change this previous view.
Mud habitats in deep water	Yes	Yes	**Branch 1 – Outcome C** Consider whether any changes may trigger change to GMA. If so, provided revised feature condition advice **Branch 2 – Outcome D** No revised advice likely required however check whether any new feature extent data	No - A habitat map covering 50% of the site is available since JNCC's 2014 advice[8]. Extent of Mud habitats in deep water presented in new habitat map is consistent with that previously known and used in JNCC's 2014 advice[8]. No new advice on feature condition is expected to be required as despite a revised extent, all habitats in the site were advised with a 'Recover' GMA and evidence of incident pressures from updated VMS data (2009 – 2013) does not change this previous view. Therefore no revised advice required for Subtidal mud
Sea-pen and burrowing megafauna communities	No	Yes	**Branch 1 – Outcome B** Advice required for feature **Branch 2 –** N/A	Yes - Feature has not been assessed previously and therefore requires advice using the MCZ Protocols[13]. See Section 7.4.2.
Fan mussel (*Atrina fragilis*)	Yes	Yes	**Branch 1 – Outcome B** Revised advice likely required for feature **Branch 2 – N/A** Change expected from advice provided in 2014 advice[8] to no advice provided in 2015 as likely required as expected 'No confidence' score in feature presence and extent	Yes - Following receipt of a draft MB0120[18] site report for Greater Haig Fras pMCZ, which indicated the records of fan mussel were dead or shell fragments, JNCC will provide revised advice on this species.
Haig Fras Rock Complex	Yes	No	**Branch 1 – Outcome A** No revised advice required **Branch 2 – Outcome**	No - There are no new data about this geological feature and thus no change to the JNCC 2014 advice[8].

Feature	Previously assessed?	New data available?	Decision tree outcome	Revised advice needed?
			F Consider whether revised feature condition advice required	
Subtidal coarse sediment / Subtidal mixed sediments mosaic	No	Yes	**Branch 1 – Outcome B** Advice likely required for feature **Branch 2 –** N/A	Yes - Feature has not been assessed previously and therefore requires advice using the MCZ Protocols[13]. See Section 7.4.2.

Subtidal coarse sediment and **Subtidal mixed sediments** were advised upon as separate habitat features within JNCC's 2014 advice[8]. Subsequently, a new habitat map was produced as part of the MB0120[18] site report that covers 50% of the site. The map indicates the extent of all habitats has changed from the previous map available in 2014, particularly noting the introduction of a mosaic habitat comprising **Subtidal coarse sediment** / **Subtidal mixed sediments** rather than their individual habitats. Following the JNCC MCZ decision-tree process, **Subtidal coarse sediment**, **Subtidal mixed sediments** and the mosaic habitat **Subtidal coarse sediment / Subtidal mixed sediments** have been assigned a 'B' category (see Figure 6), indicating revised or new advice will be needed for the features in light of the data received since JNCC's 2014 advice[8].

Due to the continued bottom-contacting fishing activity occurring within the site and the sensitivity of these features to associated pressures, JNCC continue to recommend a **Recover** GMA for **Subtidal coarse sediment** and **Subtidal mixed sediments**. Therefore no revised advice on the feature condition or GMA is required for either feature. The new mosaic habitat of **Subtidal coarse sediment** / **Subtidal mixed sediments** will require advice on feature condition and the GMA, as it has not previously been assessed.

Subtidal sand has a revised extent in the recently available map. Under the JNCC decision-tree process a 'B' category has been assigned due to the possible change in confidence in the feature's extent. A revised assessment is therefore required to review JNCC's confidence in the feature extent. Due to the intensity of fisheries operating within the site, which has been confirmed by recent VMS data from 2009-13[31], JNCC continue to recommend a **Recover** GMA for the feature in line with a 'D' category in the JNCC decision tree.

Data for **Sea-pen and burrowing megafauna communities** were not available at the time of JNCC's 2014 advice[8], and whilst it was not recommended as a potential feature of Greater Haig Fras rMCZ, the advice did note that the there was a likelihood that the feature was present within the area of **Subtidal mud**. With recent data made available by the Marine Institute[41] (Republic of Ireland) and further supported with evidence from the Greater Haig Fras pMCZ MB0120[18] site report, there is clear evidence that the feature is present within the site and it has been categorised as 'B' through the JNCC MCZ decision-tree process. Full advice is required for this feature.

[41] Referred to as Marine Institute hereafter

Fan mussel (*Atrina fragilis*) was first identified within the site during the MB0120[18] survey in 2012. JNCC has carefully studied the outputs from this survey since the production of its 2014 advice[8] and further reviewed its advice on receipt of the associated site report emanating from this survey. Following this review, JNCC concludes that it is likely to change the confidence surrounding the presence of the feature within Greater Haig Fras pMCZ. This has therefore been assigned a 'B' category under the JNCC decision-tree process.

With a new habitat map produced for 50% of the site, the extent of **Subtidal mud** and **Mud habitats in deep water** has been revised since JNCC's 2014 advice[8]. Consequently the features have been assigned a 'C' under the JNCC MCZ decision-tree process. The new habitat map largely agrees with the classification of ground-truth points that were used to assess the confidence in presence and extent of the features during JNCC's 2014 advice[8], and therefore no further advice is required in respect to these features. JNCC retains **High** confidence in their extents within the site. While updated VMS data for 2009-13[31] are available for the site, no significant changes in activities or intensity have been recorded and therefore JNCC continues to recommend a **Recover** GMA for **Subtidal mud** and **Mud habitats in deep water**.

No new data are available for the **Haig Fras Rock Complex** geological feature and thus no revised advice is needed for the confidence in presence and extent of this feature. Equally no advice on feature condition is required as the GMA of a geological feature cannot be anything other than maintain owing to its abiotic nature.

7.4.2. Assessment of Feature Presence and Extent

Table 21: Greater Haig Fras pMCZ Evidence Assessment Summary

Site (Code)	Feature	Evidence Assessment Results			
		Confidence in presence	Rationale for confidence in feature presence	Confidence in extent	Rationale for confidence in feature extent
Greater Haig Fras pMCZ (FS 05)	**Subtidal coarse sediment**	**High** (High)	Interpreted ground-truth data (from 33 sediment grab samples) demonstrates the presence of Subtidal coarse sediment in the site.	**Low** (Moderate)	The presence the feature is supported by multiple ground-truth samples and a habitat map from survey. However, the spatial extent of the Subtidal coarse sediment could not be separated from Subtidal mixed sediments and they are presented as a mosaic in the habitat map. As there are gaps in the mapped extent of the mosaic, there is uncertainty in the precise location of Subtidal coarse sediment in the site.
	Subtidal sand	**High** (High)	Interpreted ground-truth data (from 35 sediment grab samples) demonstrate the presence of Subtidal sand in the site.	**Moderate** (Moderate)	A high number of data points across the site are supported by a partial coverage habitat map from MB0120[18]. However, there is inconsistency between some BGS points and the habitat map and gaps in the mapped extent, leading to moderate confidence in feature extent.

Site (Code)	Feature	Evidence Assessment Results			
		Confidence in presence	Rationale for confidence in feature presence	Confidence in extent	Rationale for confidence in feature extent
	Subtidal mixed sediments	**High** (High)	Interpreted ground-truth data (from 21 sediment grab samples) demonstrate the presence of Subtidal mixed sediments in the site.	**Low** (Moderate)	The presence of the feature is supported by multiple ground-truth samples and a habitat map from survey. However, the spatial extent of the Subtidal mixed sediments could not be separated from Subtidal coarse sediments and they are presented as a mosaic in the habitat map. As there are gaps in the mapped extent of the mosaic, there is uncertainty in the location of Subtidal mixed sediments in the site.
	Sea-pen and burrowing megafauna communities*	**High** (*)	12 ground-truth points from video tows and the *Nephrops* stock assessment survey, which recorded burrows in Subtidal mud. These data are supported with a habitat map from MB0120.	**Moderate** (*)	The area is mapped within the recent MB0120[18] product derived from survey. However, the feature was delineated using an isobath, because all the sample records suggest the habitat occurs in deeper areas of the subtidal mud. However, this approach gives rise to mapped areas of the feature without any ground-truth samples to validate their presence. Therefore, the apparent extent is mapped but note there are some uncertainties around its actual extent within the site.
	Fan mussel (*Atrina fragilis*)	**No confidence** (Moderate)	Shells were identified in three video tows; however their appearance indicated they were not living specimens and simply dead shells. Therefore, no evidence to demonstrate the presence of live Fan mussels within the site.	**No confidence** (Low)	No survey data to determine the presence or distribution of the species within the site.
	Subtidal coarse sediment / Subtidal mixed sediments mosaic*	**High** (*)	Presence of the feature is supported by a recent habitat map developed using acoustic and ground-truth data.	**Moderate** (*)	A habitat map from survey covers 50% of the site. The map is complete in the south of the site but there are gaps in mapped area in the north. Therefore there are areas of the mosaic habitat that are not clearly delineated, with the further potential that areas could have been missed. Thus the full extent of the mosaic habitat is uncertain in parts.

The blue text represents the previous assessment score

*These features are recently identified and therefore they have no score from a past assessment.

A new habitat map covering 50% of Greater Haig Fras pMCZ has been produced since JNCC's previous advice in 2014[8]. The habitat map was developed using acoustic and ground-truth data. The acoustic data were collected during four surveys: a full coverage survey of two large sections of Haig Fras cSAC/SCI in 2011; a survey in 2012 to gather data between the areas covered by the 2011 survey; transects across the northern area of Greater Haig Fras pMCZ as part of the MB0120[18] survey in 2012; and a full coverage acoustic survey south of the SAC in 2014. The 2011 survey also collected video samples while both

surveys in 2012 collected video records and grab samples of sediment habitats. All these ground-truth data were used in the creation of the new habitat maps and by JNCC in developing our revised advice in 2015. The ground-truth data within Haig Fras cSAC/SCI surveys were classified into broad-scale habitats to contribute to JNCC's current advice, as there are ground-truth data from BGS sediment samples and data from *Nephrops* fisheries stock assessments by the Marine Institute.

There are multiple ground-truth samples from grab samples that verify the presence of **Subtidal coarse sediment** and **Subtidal mixed sediments** in Greater Haig Fras pMCZ. Therefore, JNCC continues to have **High** confidence in the presence of these two features within the site. The cartographic methods used to create the MB0120[18] habitat map could not distinguish between **Subtidal coarse sediment** and **Subtidal mixed sediments**, and as a result they are presented as **Subtidal coarse sediment / Subtidal mixed sediments mosaic** (see Table 21). Given the ground-truth data clearly supports the presence of the two component habitats and the habitat mosaic has been identified on the new habitat map from survey, JNCC has **High** confidence in the presence of the **Subtidal coarse sediment / Subtidal mixed sediments mosaic** in the site. However, our confidence in the extent of the mosaic habitat is **Moderate**, because the habitat map from MB0120[18] does not fully cover the northern areas of the site. The extent of the mosaic is not well delineated in these areas of Greater Haig Fras pMCZ and there could be patches present in the unmapped sections. Since the extent of the component Subtidal coarse sediment and Subtidal mixed sediment features cannot be separated, JNCC's confidence in the extent of the component habitats is lower than for the mosaic. Therefore we have **Low** confidence in the extent of the individual features **Subtidal coarse sediment** and **Subtidal mixed sediments**. Furthermore, JNCC recommends the combined mosaic feature of **Subtidal coarse / Subtidal mixed sediments** should be designated as a feature of Greater Haig Fras pMCZ rather than the original proposal to designate the separate **Subtidal coarse sediment** and **Subtidal mixed sediments** features.

There are 35 ground-truth records from grab samples supporting the presence of **Subtidal sand** in Greater Haig Fras pMCZ. **Subtidal sand** was also identified in the new habitat map from MB0120[18]. JNCC continues to have **High** confidence in the presence of **Subtidal sand**. There are records of **Subtidal sand** from BGS samples in the west of the site, where the habitat map indicates Subtidal mud to be present. These BGS data suggest that there could be **Subtidal sand** in locations other than those identified by the new habitat map. Therefore, JNCC only has **Moderate** confidence for the extent of the proposed **Subtidal sand** feature within Greater Haig Fras pMCZ as there is residual uncertainty on the full extent of the feature within the site.

Five sample points from the Marine Institute *Nephrops* survey recorded burrow densities greater than 0.2 m^{-2}, which is the threshold considered to demonstrate the presence of **Sea-pen and burrowing megafauna communities** (for further information, see Section 5.1 of the JNCC's 2014 advice[8]). The sea pen *Virgularia mirabilis* and megafaunal burrows within the mud were observed on video samples collected during the 2012 MB0120[18] survey. Seven video tows were classified as **Sea-pen and burrowing megafauna communities** from this 2012 survey. JNCC's confidence in the presence of the feature is

therefore **High**. Video tow survey points that would be capable of identifying **Sea-pen and burrowing megafauna communities** are well distributed through the site, but the feature was generally only observed in deeper areas of **Subtidal mud**. The extent of the feature was interpreted from the acoustic data gathered to support the extent of Subtidal mud within the site beyond the 113m depth contour. This isobath was selected because the **Sea-pen and burrowing megafauna communities** feature was not recorded at shallower depths within the MB0120[18] data. Mapping using isobaths indicates an area of **Sea-pen and burrowing megafauna communities** in the south-west corner of the site, although there were no ground-truth data present to support the interpretation. Based on this lack of ground truth data and some residual uncertainties in the approach taken to mapping the extent of the feature, JNCC's confidence in feature extent is **Moderate.**

At the time of JNCC's 2014 advice[8], the records of the species FOCI **Fan mussel (*Atrina fragilis*)** from video and still imagery collected during the MB0120[18] 2012 survey were thought to show live specimens. As a result, JNCC advised a moderate confidence in feature presence based on expert judgement. Further careful review of the images did not support the initial interpretation and these are no longer considered to be records of living fan mussel within the data gathered at Greater Haig Fras pMCZ. With no data indicating the presence of **Fan mussel (*Atrina fragilis*)** in the site, JNCC's confidence in the presence and extent of the species FOCI has been reduced to **No confidence**. Our judgement does not mean that the feature may not occur within Greater Haig Fras pMCZ but simply that there are no current data demonstrating an extant population of the species within the site. The records of dead shells or shell fragments may indicate a population of **Fan mussel (*Atrina fragilis*)** being present somewhere in the site or that there was a presence in the site historically.

7.4.3. Advice on the General Management Approach for MCZ features

A summary of JNCC's assessments of confidence in feature condition and the GMA are presented below in Table 22 (see Section 6.2.3 for the approach). Further information on the vulnerability assessments is provided in Annex 5.

Table 22: Summary of JNCC's conservation advice for features in Greater Haig Fras pMCZ

Site (Code)	Feature	Confidence in feature condition (MCZ Technical Protocol F)[29]	General Management Approach advised (MCZ Conservation Objective Guidance)[34]
Greater Haig Fras pMCZ (FS 05)	**Sea-pen and burrowing megafauna communities***	**Low** (*)	**Recover** (*)
	Subtidal coarse sediment / Subtidal mixed sediments mosaic*	**Low** (*)	**Recover** (*)

The blue text represents the previous assessment score
*These features are recently identified and therefore they have no score from a past assessment.

The aggregated VMS data for 2009-2013[31] indicate that **Sea-pen and burrowing megafauna communities** are exposed to moderate to high levels of benthic trawling. Similarly, data provided by the

French fishing industry indicate the presence of a *Nephrops* fishery focussed on the deeper areas of mud habitats where the **Sea-pen and burrowing megafauna communities** are thought to occur. As **Sea-pen and burrowing megafauna communities** have moderate to high sensitivity to pressures associated with bottom contacting fishing, JNCC recommend a **Recover** GMA. Areas mapped as the mosaic habitat of **Subtidal coarse sediment / Subtidal mixed sediments** occur in parts of the site that are exposed to high levels of benthic trawling. Due to the features' sensitivity to pressures associated with this activity the feature is considered to be highly vulnerable and JNCC recommend a **Recover** GMA.

7.4.4. Confidence in Feature condition

Technical Protocol F[29], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to 'low' unless further criteria are satisfied. These criteria were not met for either **Sea-pen and burrowing megafauna communities** or the mosaic habitat **Subtidal coarse sediment / Subtidal mixed sediments.** JNCC has **Low** confidence in their condition.

7.4.5. Feature Risk

Section 6.2.4 provides information on the data used and methodology followed for the assessment of risk. JNCC's 2014 advice[8] (Table 167 on page 530) lists those pressures to which features are currently **Moderately** or **Highly** vulnerable, the features that are considered to be at **High** future risk, and the pressures to which these features are **Highly** sensitive (with moderate/high confidence).

Feature risk remains unchanged since JNCC's advice in 2014[8] for all features (see Section 6.7.4 on page 118), other than **Subtidal coarse sediment / Subtidal mixed sediments mosaic** and **Sea-pen and burrowing megafauna communities** (see Table 23).

Table 23: **Greater Haig Fras pMCZ feature risk assessment**

Site (Code)	Feature	Current risk	Future risk
Greater Haig Fras pMCZ (FS 05)	**Subtidal coarse sediment / Subtidal mixed sediments mosaic**	**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.

7.4.6. Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site have appropriate data to support their designation following the method outlined in Section 6.2.5 of this present advice. The assessment and results are presented in Table 24, Table 25 and Table 26 below.

Feature assessment

Table 24: Greater Haig Fras pMCZ feature data sufficiency assessment

Site (Code)	Feature	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 pMCZ (FS 05)	**Subtidal coarse sediment**	**Yes** (High confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment (see Table 25).**
	Subtidal coarse sediment / Subtidal mixed sediments mosaic	**Yes** (High confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**
	Subtidal sand	**Yes** (High confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**
	Subtidal mud	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**
	Subtidal mixed sediments	**Yes** (High confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment (see Table 25).**
	Mud habitats in deep water	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**
	Sea-pen and burrowing megafauna communities	**Yes** (High confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**
	Haig Fras Rock Complex	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**

Table 25: Greater Haig Fras pMCZ assessment of additional conservation/ecological considerations

Site (Code)	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
Greater Haig Fras pMCZ (FS 05)	**Subtidal coarse sediment**	**Yes** - The site could contribute to increasing the amount of Subtidal coarse sediment afforded protection in the region (currently ~3% of the 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** however JNCC advise that Defra designate the mosaic habitat which comprises Subtidal coarse sediment and Subtidal mixed sediments rather than their individual components*.
	Subtidal mixed sediments	**No** - There are already three replicates of Subtidal mixed sediment in 75-200m water depth afforded protection within the existing MPA network in this region; there is currently ~14% of the known distribution of Subtidal mixed sediments afforded protection in the region. However, the confidence in feature presence is high within the site.	**Yes** - This feature is currently at High risk of damage from benthic trawling.	**Feature should be further considered** – designation decision to be based on consideration of specific circumstances, for example whether the precautionary principle is applied. JNCC advise that this feature should only be designated if the mosaic habitat is not designated and if Subtidal coarse sediment is designated.

***** Subject to considerations listed in the method in Section 5.5 of the 2014 advice[8]

Site level assessment

Table 26: Greater Haig Fras pMCZ 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?	**JNCC 2014 Advice** ***"Does this site contribute to filling a big gap in the network?*** ***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):* - *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 pMCZ, 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).* - *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 pMCZ, South of Celtic Deep rMCZ.* - *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.* ***Adequacy*** *(seeking protection of at least 10% by area of each EUNIS Level 3 habitat within each CP2 region):* - *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).* - *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).* - *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*

Question	Response
	recommended minimum of 10% by area." **JNCC 2015 Updated Advice** Since 2014, **Fan mussel (*Atrina fragilis*)** does not now have sufficient data to be considered as a feature of the site and therefore the site would not contribute to filling any gaps for that species feature. **Sea-pen and burrowing megafauna communities**, an additional feature considered in 2015, could fill a replication gap in the MPA network. This site is one of three options that could fill a gap for this feature; there is currently one site that affords protection to Sea-pen and burrowing megafauna communities in the existing network within the region which is Plymouth Sound and Estuaries SAC. The other site options would be North West of Jones Bank pMCZ (T2 site option) and Celtic Deep rMCZ (future site option). Otherwise JNCC's 2014 advice[8] remains unchanged. The **Subtidal coarse sediment / Subtidal mixed sediments mosaic** habitat, another additional feature considered in 2015, could contribute to filling an adequacy gap in the network, as outlined for Subtidal coarse sediment in JNCC's 2014 advice[8].

7.4.7. Feature maps

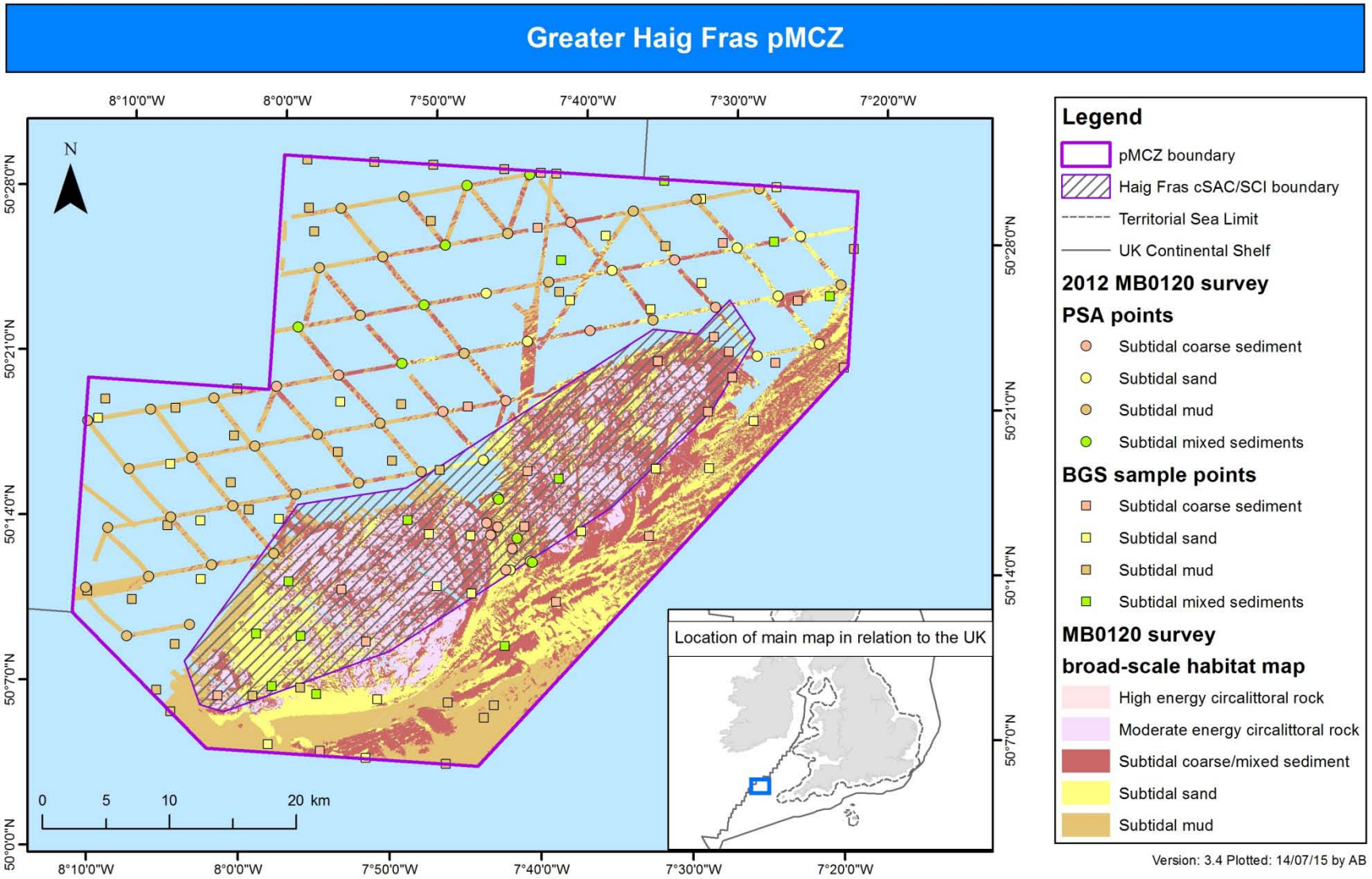


Figure 13: Distribution of broad-scale habitats in Greater Haig Fras pMCZ

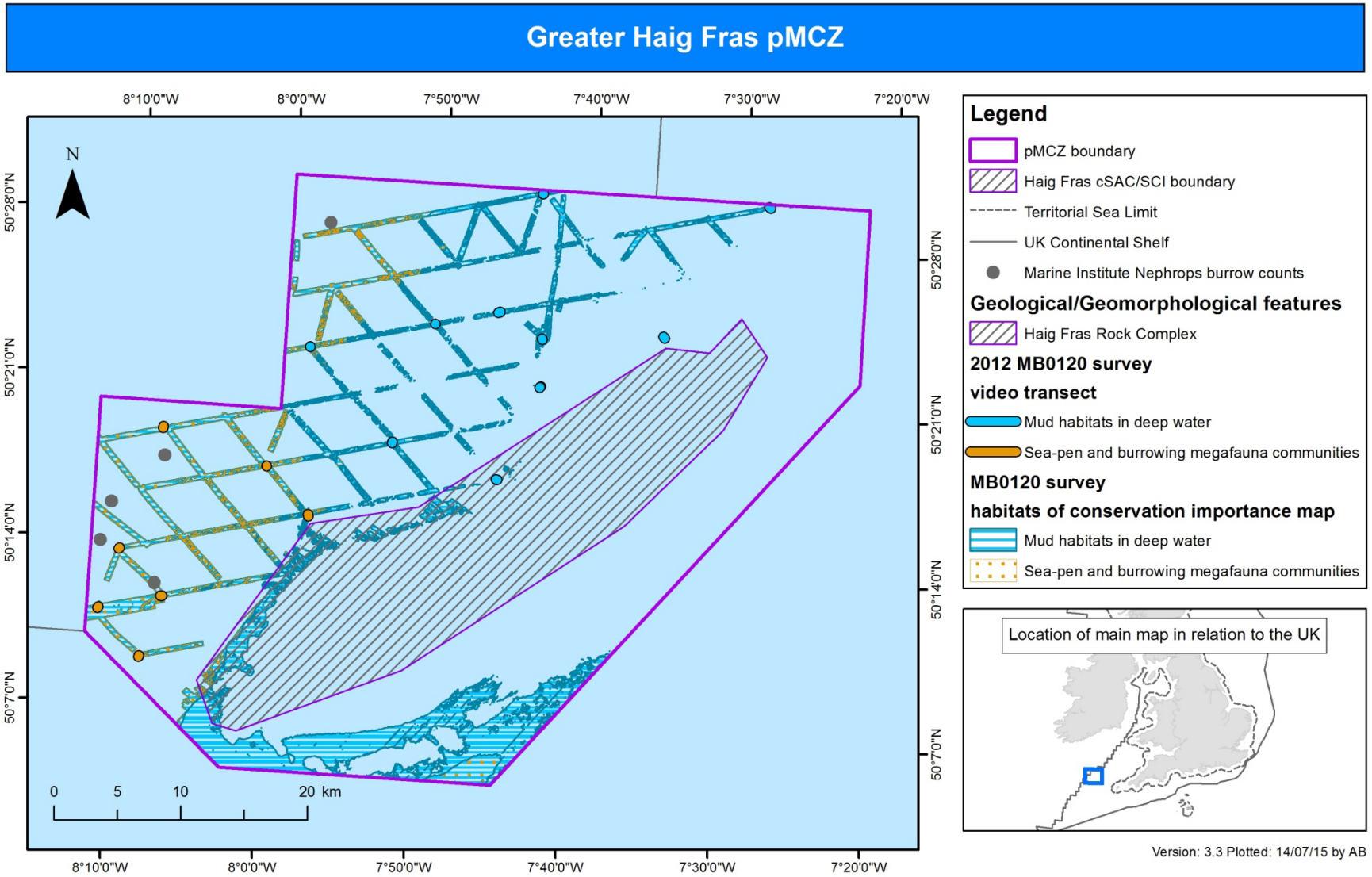


Figure 14: Distribution of the Features of Conservation Importance and the geological feature within Greater Haig Fras pMCZ

7.5. 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**.

JNCC advised on the additional features **Subtidal mud**, **Subtidal mixed sediments**, **Mud habitats in deep water**, **Sea-pen and burrowing megafauna communities** and **Ocean quahog (*Arctica islandica*)** in its 2014 advice[8].

7.5.1. Assessment of new data

JNCC assessed any requirement for revisions to its 2014 advice[8] in light of any new data available for the MCZ. The assessment followed the JNCC MCZ decision-tree process (see Section 6.1). The outcomes of the assessment are provided in Table 27, whereby the letters provided under the first and second branches relate to the outcome of the decision tree (see Figure 6). Where the application of the decision tree identified that no new advice was required, the 'Revised advice needed' cell in the table is highlighted in green. Cells highlighted in red indicate where new advice may be required for the feature, as summarised within the cell.

Table 27: **Outcomes of decision-tree process for features in North East of Farnes Deep MCZ**

Feature	Previously assessed?	New data available?	Decision Tree outcomes	Revised advice needed?
Subtidal mud	Yes	Yes	**Branch 1 – Outcome A** No revised advice required **Branch 2 – Outcome F** Consider whether revised feature condition advice required	No - No new biophysical data for site since last advice. Updated VMS data (2009–2013) are consistent with the level of exposure presented in the 2006-09 VMS data for bottom-contacting gears coincident with the feature.
Subtidal mixed sediments	Yes	Yes		No - No new biophysical data for site since last advice. Updated gridded VMS data (2009–2013) are consistent with the level of exposure presented in gridded 2006-09 VMS data for bottom-contacting gears coincident with the feature. This feature only occurs within a small part of the feature's extent and remains within the thresholds for low exposure. Therefore no revised advice is required on the previously advised Maintain GMA.
Mud habitats in deep water	Yes	Yes		No - No new biophysical data for site since last advice. Updated gridded VMS data (2009–2013) are consistent with the level of exposure presented in gridded 2006-09 VMS data for bottom contacting gears coincident with the feature.
Ocean quahog (*Arctica islandica*)	Yes	Yes		

No new biophysical data has been received since the 2014 advice[8] was submitted. Using the JNCC MCZ decision tree, **Subtidal mud**, **Subtidal mixed sediments**, **Mud habitats in deep water**, **Sea-pen and burrowing megafauna communities** and **Ocean quahog (*Arctica islandica*)** have been assigned an 'A' category (see Figure 6) and no revised advice is required for the confidence in feature presence and extent.

JNCC received updated fisheries data[31] (VMS aggregated data 2009-2013) since its 2014 advice[8] for this site. In our previous advice[8], we advised 'maintain' GMAs for all features in North East of Farnes Deep MCZ, as none were assessed as vulnerable to any pressures at high or moderate levels, and therefore were assigned an 'F' category under the JNCC MCZ decision-tree process. The VMS data from between 2009-13 provides further understanding of fishing activities within North East of Farnes Deep MCZ, including information on the levels of exposure that **Subtidal mud**, **Mud habitats in deep water**, **Sea-pen and burrowing megafauna communities** and **Ocean quahog (*Arctica islandica*)** have to pressures associated with bottom-contacting gears. As a result there is no need for any further advice in relation to these features, JNCC continue to recommend **Maintain** GMAs for these features.

For **Subtidal mixed sediments**, the new VMS data suggest that the feature has greater exposure to bottom-contacting fisheries pressures than that considered in JNCC's 2014 advice[8]. Nevertheless this greater exposure is still considered to be low (~40hrs over a four year period) and the majority of the relevant VMS grid cell overlap the extent of **Subtidal coarse sediment** rather than Subtidal mixed sediments. When the sensitivity of the **Subtidal mixed sediments** is considered at a **Low** exposure, a **Maintain** GMA would continue to be recommended for this feature. Therefore a full revised vulnerability assessment does not need to be undertaken in 2015 for North East of Farnes Deep MCZ.

JNCC have updated the vulnerability assessment tables presented in Annex 7 of our 2014 advice[8] - see Annex 5 of the current document.

7.5.2. Feature Risk

Feature risk remains unchanged since JNCC's advice in 2014[8] for all features in North East of Farnes Deep MCZ (see Section 6.10.4 on page 141 of 2014 advice).

7.5.3. Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site have appropriate data to support their designation following the method outlined in Section 6.2.5 of this present advice. The assessment and results are presented in Table 28 and Table 29 below.

Feature assessment

Table 28: North East of Farnes Deep MCZ feature data sufficiency assessment

Site (code)	Feature	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**	**Yes** (Moderate confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**
	Subtidal mixed sediments	**Yes** (High confidence)	**No**	**Yes** (High confidence score)	**Data support designation of feature**

Site (code)	Feature	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 habitats in deep water	**Yes** (Moderate confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**
	Ocean quahog (*Arctica islandica*)	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**

Site level assessment

Table 29: 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?	**JNCC's 2014 Advice** ***"Do the additional features within the site contribute to filling a big gap in the network?*** ***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.* ***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):* - *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 pMCZ and Fulmar pMCZ.* - *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 pMCZ and Fulmar pMCZ.* - *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 pMCZ and Fulmar pMCZ.* ***Adequacy*** *(seeking protection of at least 10% by area of each EUNIS Level 3 habitat within each CP2 region):*

	- *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)."* **JNCC's 2015 Updated Advice** JNCC's 2014 advice remains unchanged.

7.5.4. Feature maps

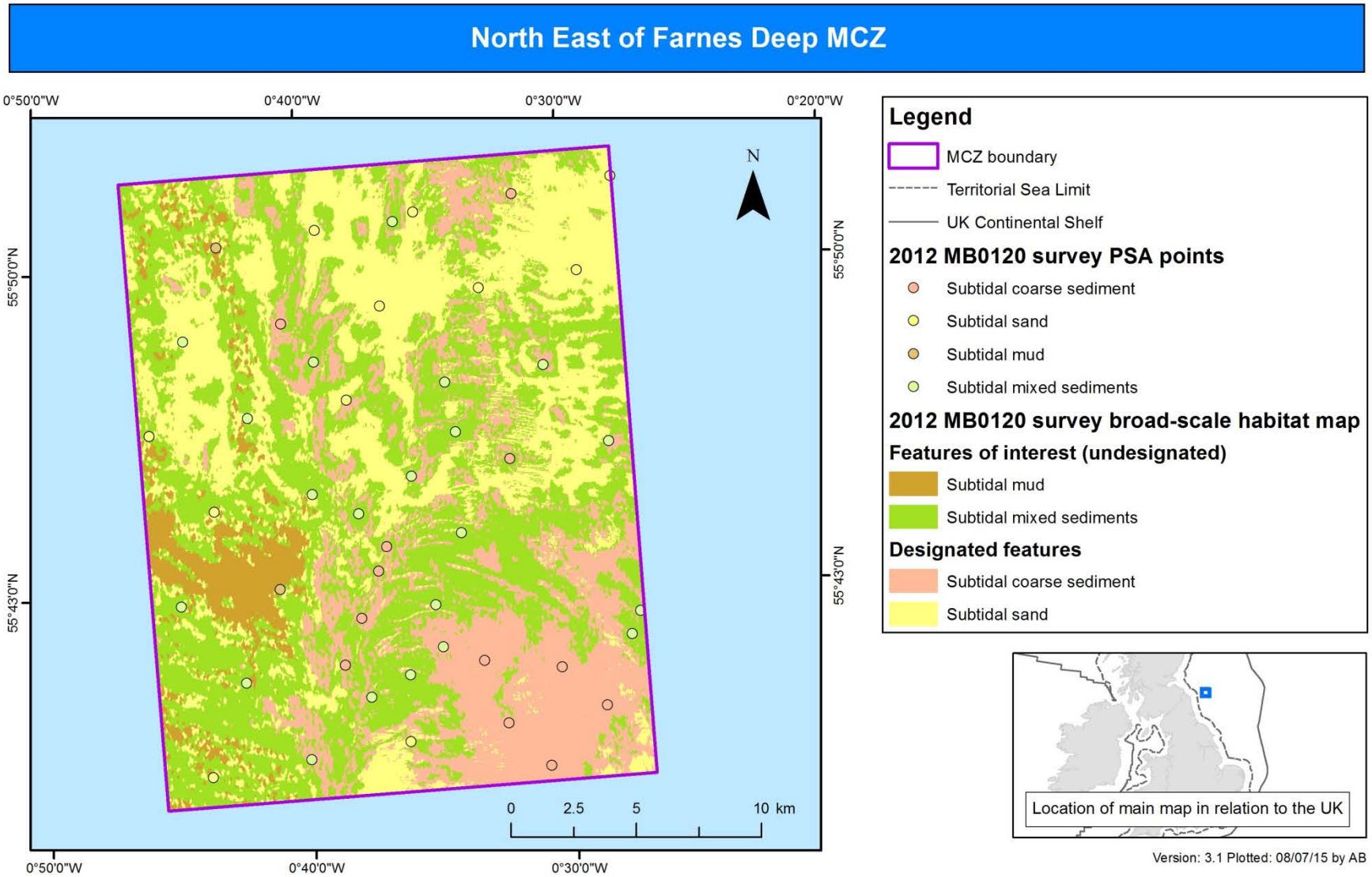


Figure 15: Distribution of broad-scale habitats in North East of Farnes Deep MCZ

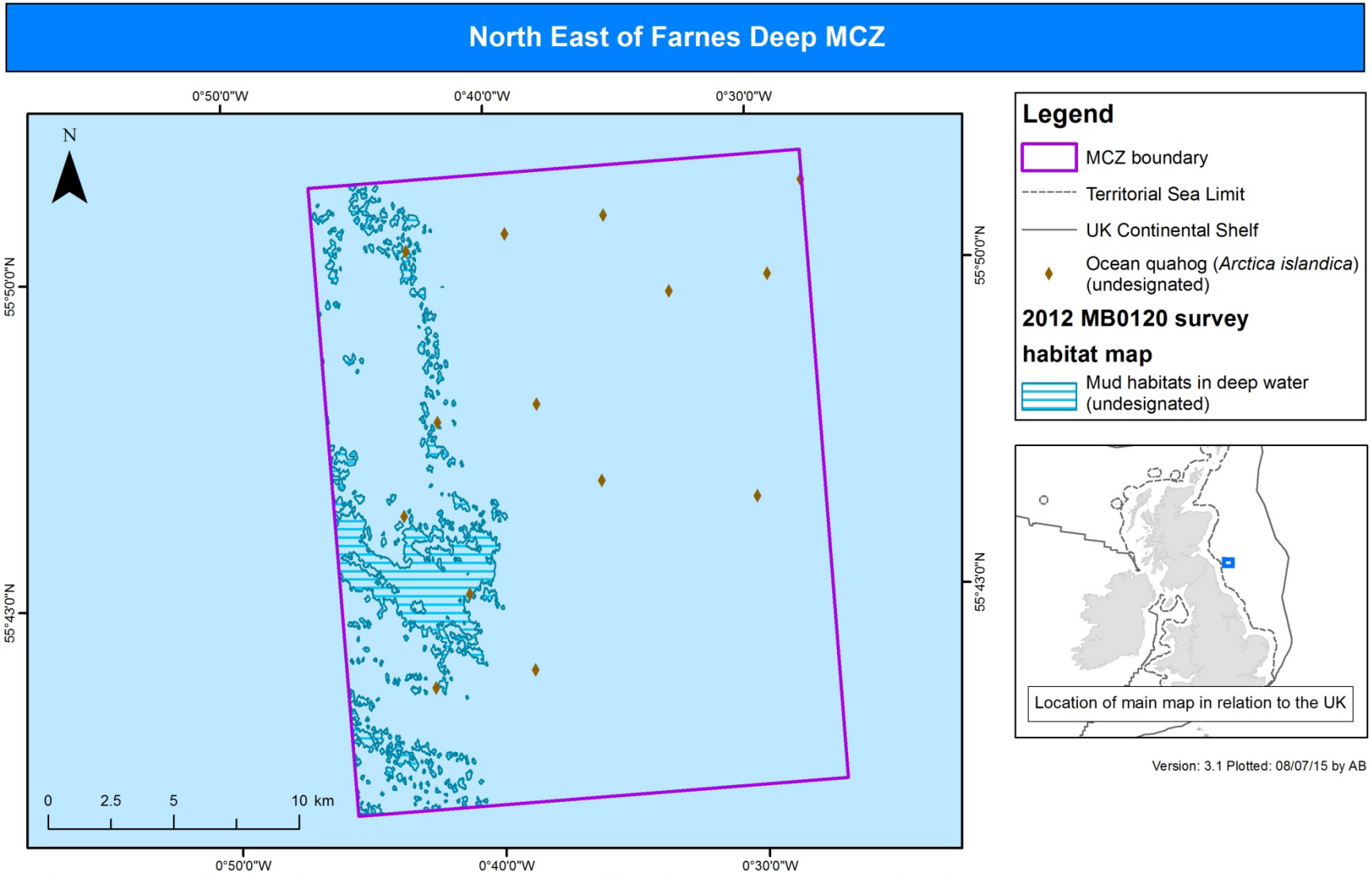


Figure 16: **Distribution of the Features of Conservation Importance in North East of Farnes Deep MCZ**

7.6. North-West of Jones Bank pMCZ

North West of Jones Bank pMCZ was recommended by the Finding Sanctuary regional MCZ[40] project for the broad-scale habitats **Subtidal coarse sediment**, **Subtidal sand** and **Subtidal mud**. These features together with **Subtidal mixed sediments**, and the habitat FOCI **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities**, identified during a MB0120[18] site verification survey, were reviewed in JNCC's 2014 advice[8].

7.6.1. Assessment of new data

JNCC assessed any requirement for revisions to its 2014 advice[8] in light of any new data available for the MCZ. The assessment followed the JNCC MCZ decision-tree process (see Section 6.1). The outcomes of the assessment are provided in Table 30, whereby the letters provided under the first and second branches relate to the outcome of the decision tree (see Figure 6). Where the application of the decision tree identified that no new advice was required, the 'Revised advice needed' cell in the table is highlighted in green. Cells highlighted in red indicate where new advice may be required for the feature, as summarised within the cell.

Table 30: Outcomes of decision-tree process for features in North-West of Jones Bank pMCZ

Feature	Previously assessed?	New data available?	Decision tree Outcomes	Revised advice needed?
Subtidal coarse sediment	Yes	Yes	**Branch 1 – Outcome A** No revised advice required **Branch 2 – Outcome D** No revised advice likely required however check whether any new feature extent data	No - Updated VMS data (2009–2013) are consistent with the level of exposure presented in the 2006-09 VMS data for bottom-contacting gears coincident with the feature. No revised advice required.
Subtidal sand	Yes	Yes		
Subtidal mud	Yes	Yes	**Branch 1 – Outcome C** Consider whether any changes may trigger change to GMA. If so, provided revised feature condition advice **Branch 2 – Outcome D** No revised advice likely required however check whether any new feature extent data	No - New biophysical data to support the presence and extent of this habitat, however extent already mapped and data only support previous knowledge. Confidence in feature presence or extent would not change and thus no new advice required. Updated VMS data (2009–2013) are consistent with the level of exposure presented in the 2006-09 VMS data for bottom-contacting gears coincident with the feature. No revised advice required.
Subtidal mixed sediments	Yes	Yes	**Branch 1 – Outcome A** No revised advice required **Branch 2 – Outcome D** No revised advice likely required however check whether any new feature extent data	No - Updated VMS data (2009–2013) are consistent with the level of exposure presented in the 2006-09 VMS data for bottom-contacting gears coincident with the feature. No revised advice required.
Mud habitats in deep water	Yes	Yes	**Branch 1 – Outcome C** Consider whether any changes may trigger change to GMA. If so, provided revised feature condition advice **Branch 2 – Outcome D** No revised advice likely required however check whether any new feature extent data	No - New biophysical data to support the presence and extent of this habitat, however extent already mapped and data only support previous knowledge. Confidence in feature presence or extent would not change and thus no new advice required. Updated VMS data (2009–2013) are consistent with the level of exposure presented in the 2006-09 VMS data for bottom-contacting gears coincident with the feature. No revised advice required.
Sea-pen and burrowing megafauna communities	Yes	Yes		

Since JNCC's 2014 advice[8], there have been no new dedicated surveys to the site. However, recent biophysical data are available to support the presence of features within the site. These data come from a Marine Institute *Nephrops* fisheries survey[23]. It identified a frequent occurrence of the sea-pen '*Virgularia mirabilis*' during a video transect over an area mapped as **Subtidal mud** within MB0120[18]. Based on this additional information **Subtidal mud**, **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities** have all been assigned a 'C' category under the JNCC MCZ decision-tree process. With no new data available to support the assessment of confidence in feature presence or extent for **Subtidal coarse sediment**, **Subtidal sand** and **Subtidal mixed sediments**, an 'A' category (see Figure 6) has been assigned under the JNCC MCZ decision-tree process. In summary, no revised advice is required for the confidence in feature presence and extent for any features found within the site.

JNCC received updated fisheries data[31] (VMS aggregated data 2009-2013) since its 2014 advice[8] for North-West of Jones Bank pMCZ. As all the features were previously recommended a **Recover** GMA in JNCC's 2014 advice[8] due to the features' exposure to regular bottom-contacting fishing gears, the features were assigned a 'D' category under the JNCC MCZ decision-tree process. The updated VMS data corroborates the previously assessed exposure of the features. As a result there is no need for any further advice in relation to the GMAs for these features. JNCC have updated the vulnerability assessment tables presented our 2014 advice[8] - see Annex 5 of the current document.

Should North-West Jones Bank pMCZ be designated by Defra, JNCC advises that **Mud habitats in deep water** should not be a designated feature of the site if **Subtidal mud** and **Sea-pen and burrowing megafauna communities** features are designated.

Figure 17 and Figure 18 clearly show that these three habitats share the same spatial extent. JNCC consider that there is limited extra conservation value in designating **Mud habitats in deep water** where it is afforded protection by its parent and component habitats by default.

7.6.2. Feature Risk

Feature risk remains unchanged for North-West of Jones Bank pMCZ since JNCC's advice in 2014[8] (see Section 6.12.4 on page 162) for all features other than **Subtidal mixed sediments** whose risk assessment is updated in Table 31.

Table 31: **North-West of Jones Bank pMCZ feature risk assessment**

Site (Code)	Feature	Current risk	Future risk
North-West of Jones Bank pMCZ (FS04)	**Subtidal mixed sediments**	**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.

7.6.3. Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site have appropriate data to support their designation following the method outlined in Section 6.2.5 of this advice. The assessment and results are presented in Table 32 and Table 33 below.

Feature assessment

Table 32: North-West of Jones Bank pMCZ feature data sufficiency assessment

Site (Code)	Feature	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 pMCZ (FS04)	**Subtidal coarse sediment**	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**
	Subtidal sand	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**
	Subtidal mud	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**
	Subtidal mixed sediments	**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 support designation of the feature; however JNCC advises that this feature is not designated within this site.**
	Sea-pen and burrowing megafauna communities	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**

Site level assessment

Table 33: North-West of Jones Bank pMCZ 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?	**JNCC's 2014 Advice** ***"Does this site contribute to filling a big gap in the network?*** ***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.* ***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):* - *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 pMCZ, 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).* - *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 pMCZ, South of Celtic Deep rMCZ.* - *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.* ***Adequacy** (seeking protection of at least 10% of known area of each EUNIS Level 3 habitat within each CP2 region):* - *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).* - *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).* - *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."* **JNCC's 2015 Updated Advice** Since JNCC's 2014 advice[8], Sea-pen and burrowing megafauna communities has been identified as a feature of Greater Haig Fras pMCZ and therefore North-West Jones Bank pMCZ is now one of three options to provide a replicate for **Sea-pen and burrowing megafauna communities**; the other site options would be Celtic Deep rMCZ (future site option) and Greater Haig Fras pMCZ (T2 site option). Otherwise JNCC's 2014 advice[8] remains unchanged.

7.6.4. Feature maps

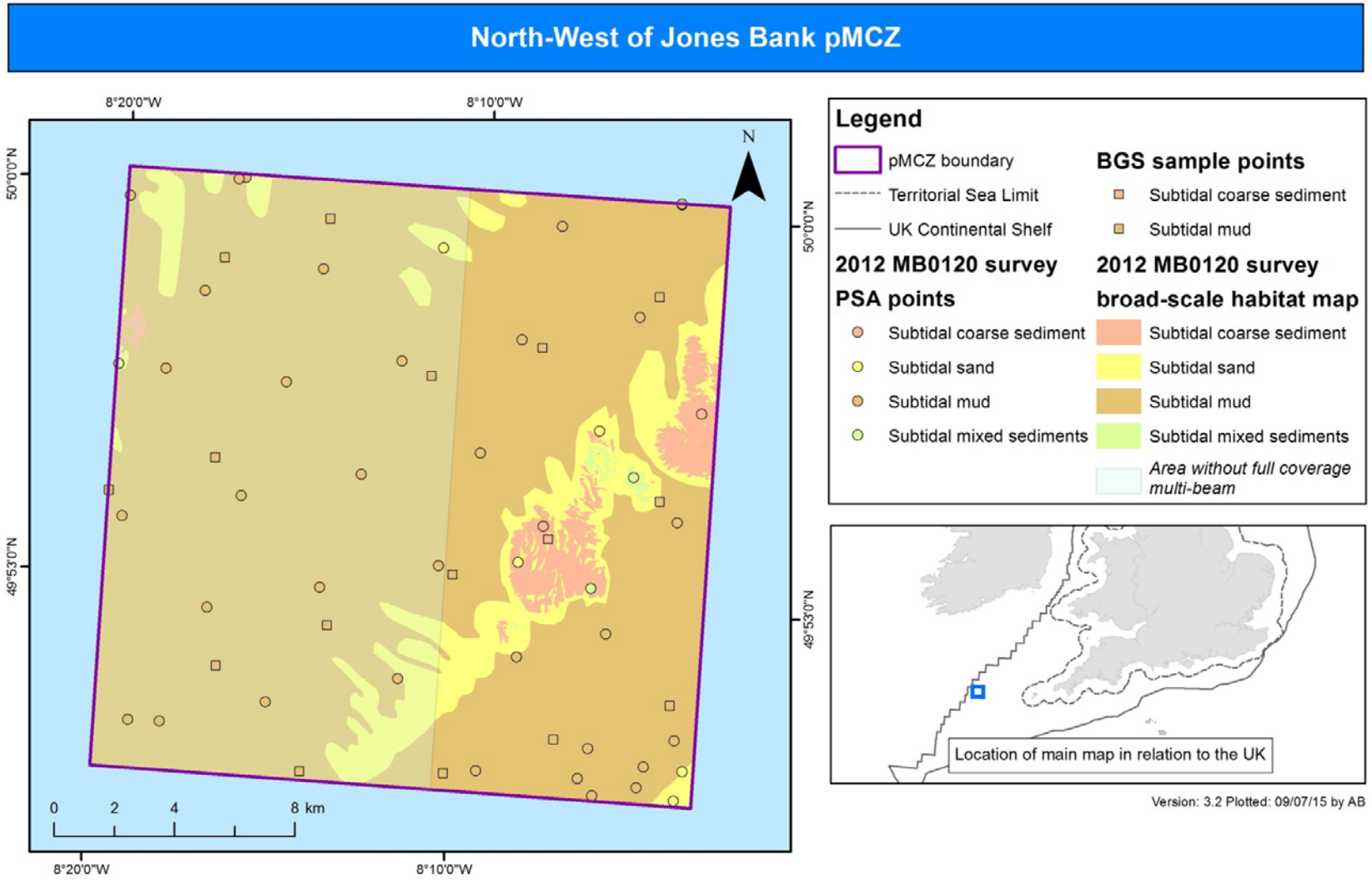


Figure 17: Distribution of broad-scale habitats in North-West of Jones Bank pMCZ[42]

[42] The habitat map has been derived from acoustic data and multiple ground-truthing data from the MB0120[18] survey in 2012. Where there are gaps in the acoustic data, JNCC have extrapolated the predominant habitat in the area using expert judgement based on the available data.

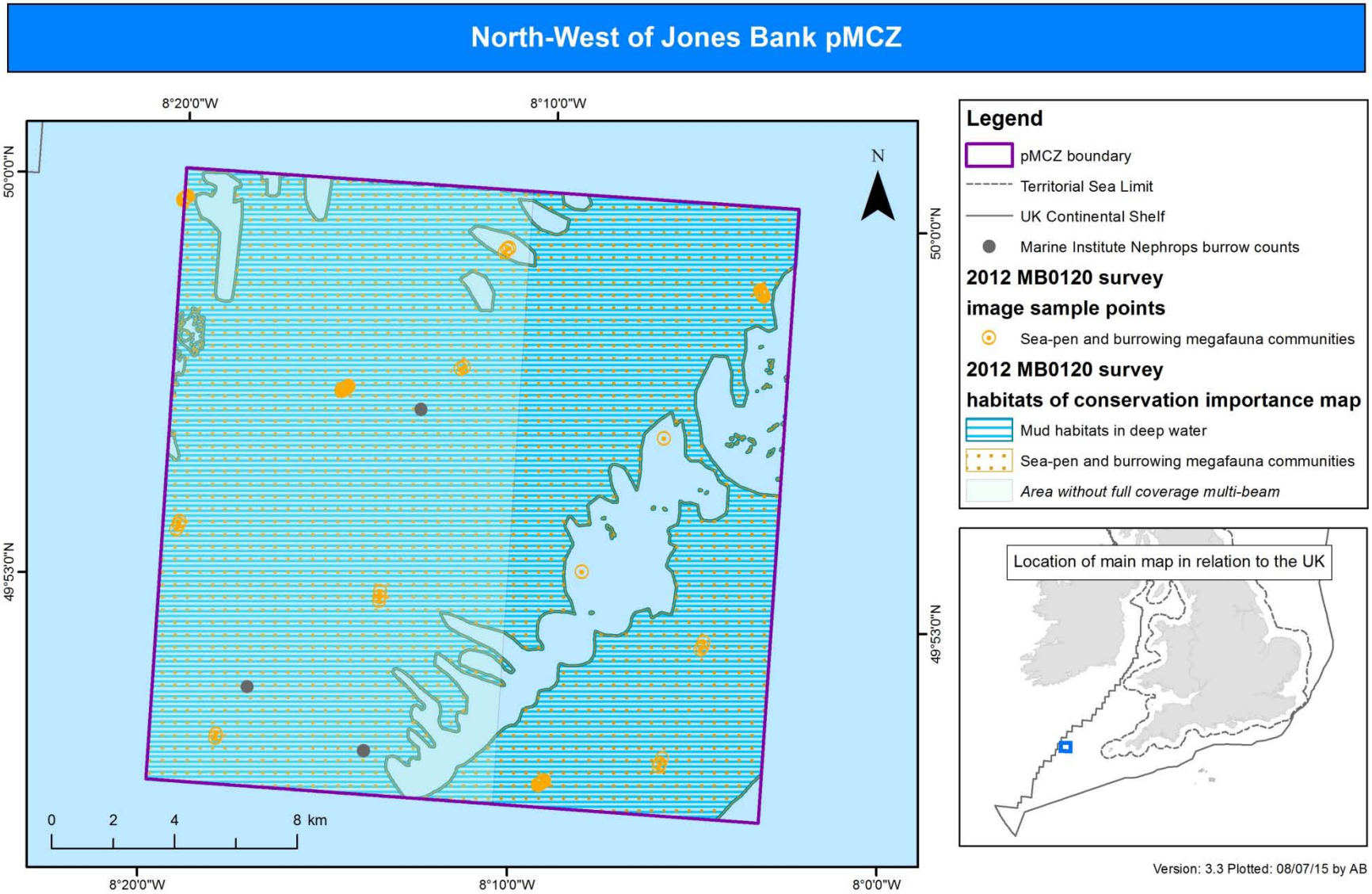


Figure 18: Distribution of the Features of Conservation Importance in North-West of Jones Bank pMCZ[42]

Produced by JNCC

7.7. Offshore Brighton pMCZ

Offshore Brighton was recommended for the broad-scale habitats **High energy circalittoral rock**, **Moderate energy circalittoral rock**, and **Subtidal mixed sediments**, the habitat FOCI **Ross Worm (*Sabellaria spinulosa*) reef** and the FOCI **Subtidal sands and gravels**.

The site was surveyed as part of the MB0120[18] work in 2012. The survey collected grab samples, video tow and camera still data, and opportunistic acoustic data within the site; and identified the additional feature, the broad-scale habitat **Subtidal coarse sediment**, within the site. Data collated under the MB0116[17] project suggested the high-mobility species FOCI **Undulate Ray (*Raja undulata*)** was present within the site.

7.7.1. Assessment of new data

JNCC assessed any requirement for revisions to its 2014 advice[8] in light of any new data available for the MCZ. The assessment followed the JNCC MCZ decision-tree process (see Section 6.1). The outcomes of the assessment are provided in Table 34, whereby the letters provided under the first and second branches relate to the outcome of the decision tree (see Figure 6). Where the application of the decision tree identified that no new advice was required, the 'Revised advice needed' cell in the table is highlighted in green. Cells highlighted in red indicate where new advice may be required for the feature, as summarised within the cell.

Table 34: Outcomes of decision-tree process for features in Offshore Brighton pMCZ

Feature	Previously assessed?	New data available?	Decision Tree Outcomes	Revised advice needed?
High energy circalittoral rock	Yes	Yes	**Branch 1 – Outcome B** Revised advice likely required for feature **Branch 2 – Outcome D** No revised advice likely required however check whether any new feature extent data	Yes - New biophysical data revise the previously known extent of this habitat and therefore likely to change JNCC's 2014 advice[8] on the confidence of the feature's extent. New VMS data for 2009-13 broadly agrees with number of hours presented in 2006-09 VMS data for bottom-contacting gears coincident with the feature. No revised GMA required.
Moderate energy circalittoral rock	Yes			
Subtidal coarse sediment	Yes			
Subtidal mixed sediments	Yes			
Ross worm (*Sabellaria spinulosa*) reefs	Yes	No	**Branch 1 – Outcome A** No revised advice required **Branch 2 – N/A**	No - No new biophysical data are available to indicate the presence of this feature within the site. Not considered further following JNCC's 2014 advice[8] as there are no data to demonstrate presence of reef features.
Undulate ray (*Raja undulata*)	Yes	No		No - Not considered further following JNCC's 2014 advice[8] where this site does not demonstrate any evidence of site fidelity for this species

Since JNCC's 2014 advice[8] for Offshore Brighton pMCZ, recent data are available for **High energy circalittoral rock**, **Moderate energy circalittoral rock**, **Subtidal coarse sediment** and **Subtidal mixed sediments** that improves JNCC's understanding of the extent of features within the site. These data include an updated habitat map incorporating data gathered from an MB0120[18] survey. Due to this new information available, all four features have been assigned a 'B' category under the first branch of the JNCC MCZ decision tree (see Figure 6).

There is no additional information for the **Ross Worm (*Sabellaria spinulosa*) reefs** or **Undulate ray (*Raja undulata*)** features since JNCC's 2014 advice[8]. No further advice is required.

JNCC received updated fisheries data[31] (VMS aggregated data 2009-2013) since its 2014 advice[8] for Offshore Brighton pMCZ. JNCC recommended a **Recover** GMA for all features we were able to assess in our 2014 advice[8] due to the features' exposure to a large amount of regular bottom-contacting fishing gears. Whilst these features' distribution within the site may have changed with recent biophysical data, the exposure levels from the updated VMS data remain high enough to require a **Recove**r GMA. The features are therefore assigned a 'D' category under the JNCC MCZ decision-tree process and as a result there is no need for any further advice in relation to the GMAs for these features in 2015.

JNCC have updated the vulnerability assessment tables presented our 2014 advice[8] - see Annex 5 of the current document.

7.7.2. Assessment of Feature Presence and Extent

Table 35: Offshore Brighton pMCZ Evidence Assessment Summary

Site (Code)	Feature	Evidence Assessment Results			
		Confidence in presence	Rationale for confidence in feature presence	Confidence in extent	Rationale for confidence in feature extent
Offshore Brighton pMCZ (BS 14)	**High energy circalittoral rock**	**High** (Moderate)	There are four ground-truth data points and a habitat map which demonstrate the presence of High energy circalittoral rock in the site.	**Moderate** (Low)	Ground-truth data points are clustered in the north and west of the site. Three of these points coincide with the mapped extent of the feature in the habitat map. Expert judgement has been applied to assign moderate confidence in feature extent due to residual uncertainties in the data
	Moderate energy circalittoral rock	**No confidence** (Moderate)	There is no confidence in the presence of this feature. Six records of the parent feature used in JNCC's 2014 advice[8] have now been quality assured and do not support the presence of the feature within the site.	**No confidence** (Low)	There is no confidence in this feature as there are no data to support either the presence or extent of this feature within the site.

Site (Code)	Feature	Evidence Assessment Results			
		Confidence in presence	Rationale for confidence in feature presence	Confidence in extent	Rationale for confidence in feature extent
	Subtidal coarse sediment	**High** (High)	There are 35 ground-truth data points which demonstrate the presence of Subtidal coarse sediment in the site.	**High** (Moderate)	A habitat map and the distribution of ground truth data demonstrate the extent of Subtidal coarse sediment in the site.
	Subtidal mixed sediments	**High** (High)	There are 34 ground-truth data points demonstrating the presence of Subtidal mixed sediments in the site.	**High** (Moderate)	A habitat map and the distribution of ground truth data demonstrate the extent of Subtidal mixed sediments in the site.

The blue text represents the 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 from the Marine Aggregate Levy Sustainability Fund (**MALSF**) synthesis study in the central and eastern English Channel[43]. During the MB0120[18] survey in 2012, a video transect identified the presence of **High energy circalittoral rock** in the north-west of the site. Within these MB0120[18] data, there are two sections of a single video transect identifying the rock feature that meet the criteria for identifying two separate ground-truth samples of rocky habitats (see Section 5.1 of JNCC's 2014 advice[8]). These records were located in the north-west of the site. At the time of JNCC's 2014 advice[8], there were six records of the parent feature **Circalittoral rock** identified from video tows recorded during a 2012 opportunistic survey by Cefas. These data have subsequently been analysed in more detail and quality assured with one instance confirmed as **High energy circalittoral rock** occurring in the north-west west of the site in an area mapped as the feature. There is an additional record of this rock feature identified during a video tow undertaken during a 2006 Cefas survey of the central English Channel. This ground-truth data point is located to the south of the mapped area of the feature in the site. Based on the four occurrences within the site and there being a mapped area of which three ground-truth records overlap, JNCC has a **High** confidence in the feature's presence within the site.

The habitat map from the MALSF study[43] used for the JNCC 2014 advice[8] identifies rock that is covered by a thin veneer of sediment in some areas of the modelled extent of the rock feature. The new habitat map generated through MB0120[18] has been used in this 2015 assessment. This recent map was created using 10% acoustic data gathered by MB0120[18] and 90% Astrium data[44]. Consequently the multibeam acoustic data for this site are predominantly low-resolution bathymetry data supported by opportunistic transit tows. It does not have sufficient resolution to reliably indicate the extent of any hard substrata particularly where rock may be covered by a veneer of sediment. Additionally, only one of the three habitat polygons showing this rock feature is supported by ground-truth data. Consequently, JNCC used expert judgement to assign

[43] 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

[44] Astrium (2011). Creation of a high resolution Digital Elevation Model (DEM) of the British Isles continental shelf: Final Report. Prepared for Defra, Contract Reference: 13820. 26 pp.

Moderate confidence in the extent of **High energy circalittoral rock** within the site as there are residual uncertainties in the mapped extent for this feature.

Moderate energy circalittoral rock was also recommended as a feature for Offshore Brighton pMCZ based on the modelled habitat map from the MALSF study[43]. However, the MB0120[18] survey did not identify this feature within the sample data collected. At the time of JNCC's 2014 advice[8], there were six records of the parent feature **Circalittoral rock** from video tow data gathered during a 2012 Cefas survey of the central English Channel. These data have recently been analysed in more detail with the analysis quality assured to now indicate one confirmed record of **High energy circalittoral rock** and the other records considered to be predominantly sedimentary habitats. As these data conflict with our prior understanding of the features within the site, JNCC now has **No confidence** in either the presence or extent of **Moderate energy circalittoral rock** in Offshore Brighton pMCZ.

Subtidal coarse sediment was identified in the site during the MB0120[18] survey in 2012 where ground-truth data (19 PSA samples) confirmed the presence of the feature in the site. Consequently, JNCC has **High** confidence in feature presence, and our advice in 2015 remains unchanged from our 2014 advice[8]. These data are well distributed across the site, with some neighbouring samples in the north and centre of the site sharing the same feature classification. As the majority of these ground-truth data points occur within the mapped extent of the feature in the MB0120[18] habitat map available for this 2015 assessment, JNCC now has **High** confidence in the feature's extent in Offshore Brighton pMCZ (elevated from Moderate confidence in our 2014 advice[8]).

JNCC had high confidence in presence and extent of **Subtidal mixed sediments** in our 2014 advice[8]. The feature was identified in the Eastern English Channel REC[45] data and the MB0120[18] survey recorded the feature in 17 grab samples; JNCC continues to have a **High** confidence in its presence within the site. The spatial distribution of the sample data suggests the feature is well distributed across the site with the greatest concentration of sample points being found in the east in line with the mapped extent in the new MB0120[18] habitat map. As the majority of ground-truth data points for the feature occur within the mapped extent, JNCC now has **High** confidence in our understanding of the extent of this feature within the site (elevated from Moderate confidence in our 2014 advice[8]).

7.7.3. Advice on the General Management Approach for MCZ features

JNCC has not revised its advice for the condition or the GMAs for any features within the site (see Section 7.7.1 above). Our views remain as per the 2014 advice[8], with our confidence in feature condition **Low** and our recommendations that the GMAs are **Recover** for all features except **Ross worm (*Sabellaria spinulosa*) reefs** feature which was not assessed.

[45] 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

7.7.4. Feature Risk

Feature risk remains unchanged since JNCC's advice in 2014[8] for all features other than for **Moderate energy circalittoral rock** where there are no data to support the presence of this feature within the site (see Table 36).

Table 36: **Offshore Brighton pMCZ feature risk assessment**

Site	Feature	Current risk	Future risk
Offshore Brighton pMCZ	**Moderate energy circalittoral rock**	Feature not assessed	

7.7.5. Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site have appropriate data to support their designation following the method outlined in Section 6.2.5 of this advice. The assessment and results are presented in Table 37 and Table 38 below.

Feature assessment

Table 37: **Offshore Brighton pMCZ feature data sufficiency assessment**

Site (Code)	Feature	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 pMCZ (BS 14)	**High energy circalittoral rock**	**Yes** (High confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**
	Subtidal coarse sediment	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**
	Subtidal mixed sediments	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**

Site level assessment

Table 38: **Offshore Brighton pMCZ 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	**Greater than 50%**

'Feature Assessment' above cover within the site?	
Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?	**JNCC's 2014 Advice** ***"Does this site contribute to filling a big gap in the network?*** ***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.* ***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):* - *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.* - *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.* - *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.* - *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 pMCZ.* ***Adequacy*** *(seeking protection of at least 10% of known area of each EUNIS Level 3 habitat within each CP2 region):* - *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.* - *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.* - *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).* - *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).* ***Connectivity*** *(ensuring that sites affording protection to the same habitat at EUNIS Level 2 are not further than 80km apart):* - *This site would fill a spatial gap in the region for Circalittoral rock."*

	JNCC's 2015 Updated Advice Since advice was provided in 2014[8], **Moderate energy circalittoral rock** does not have sufficient data to be considered as a feature of the site and therefore the site would no longer contribute to filling any gaps for **Moderate energy circalittoral rock**.

7.7.6. Feature maps

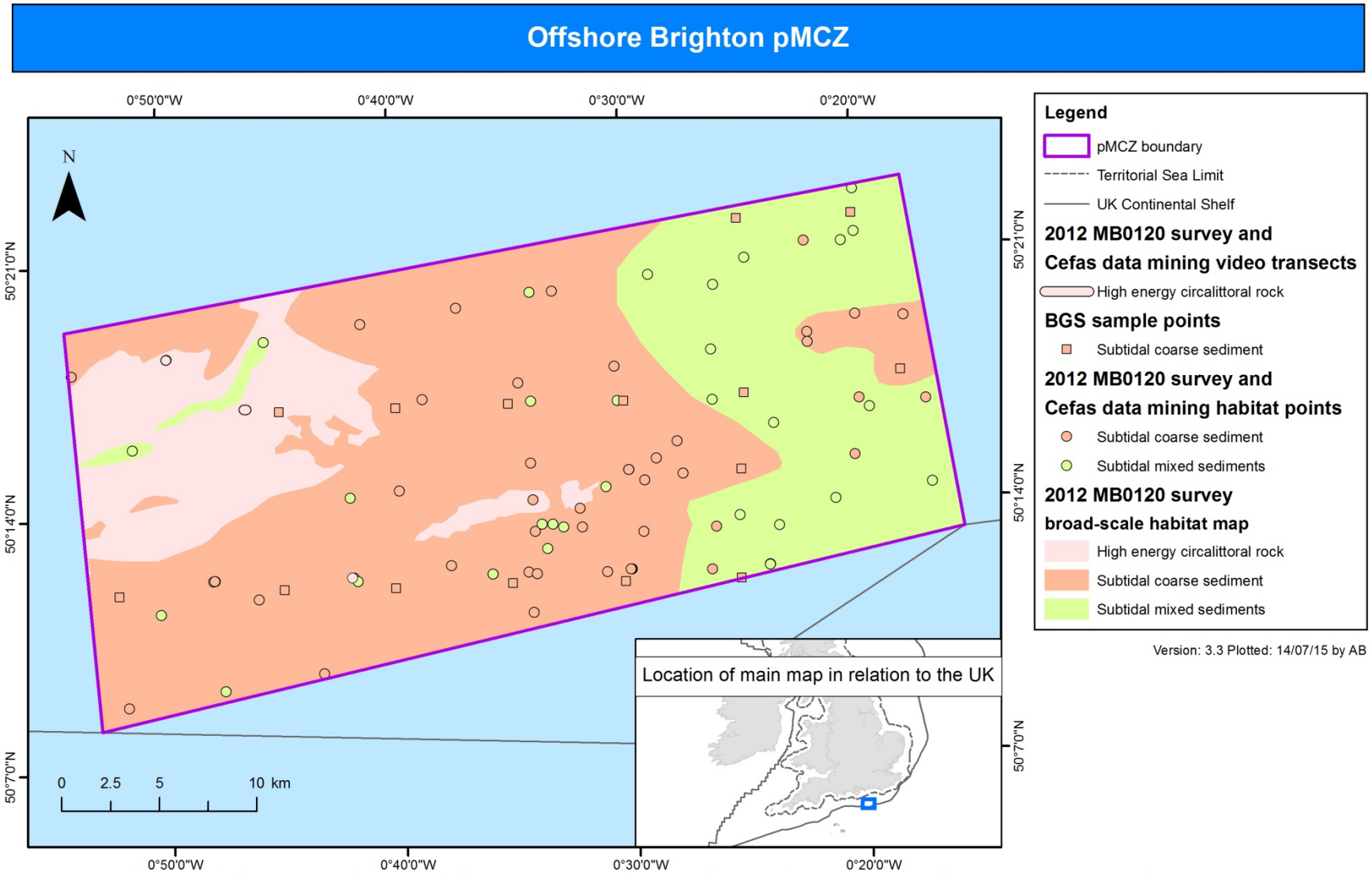


Figure 19: **Distribution of broad-scale habitats in Offshore Brighton pMCZ**

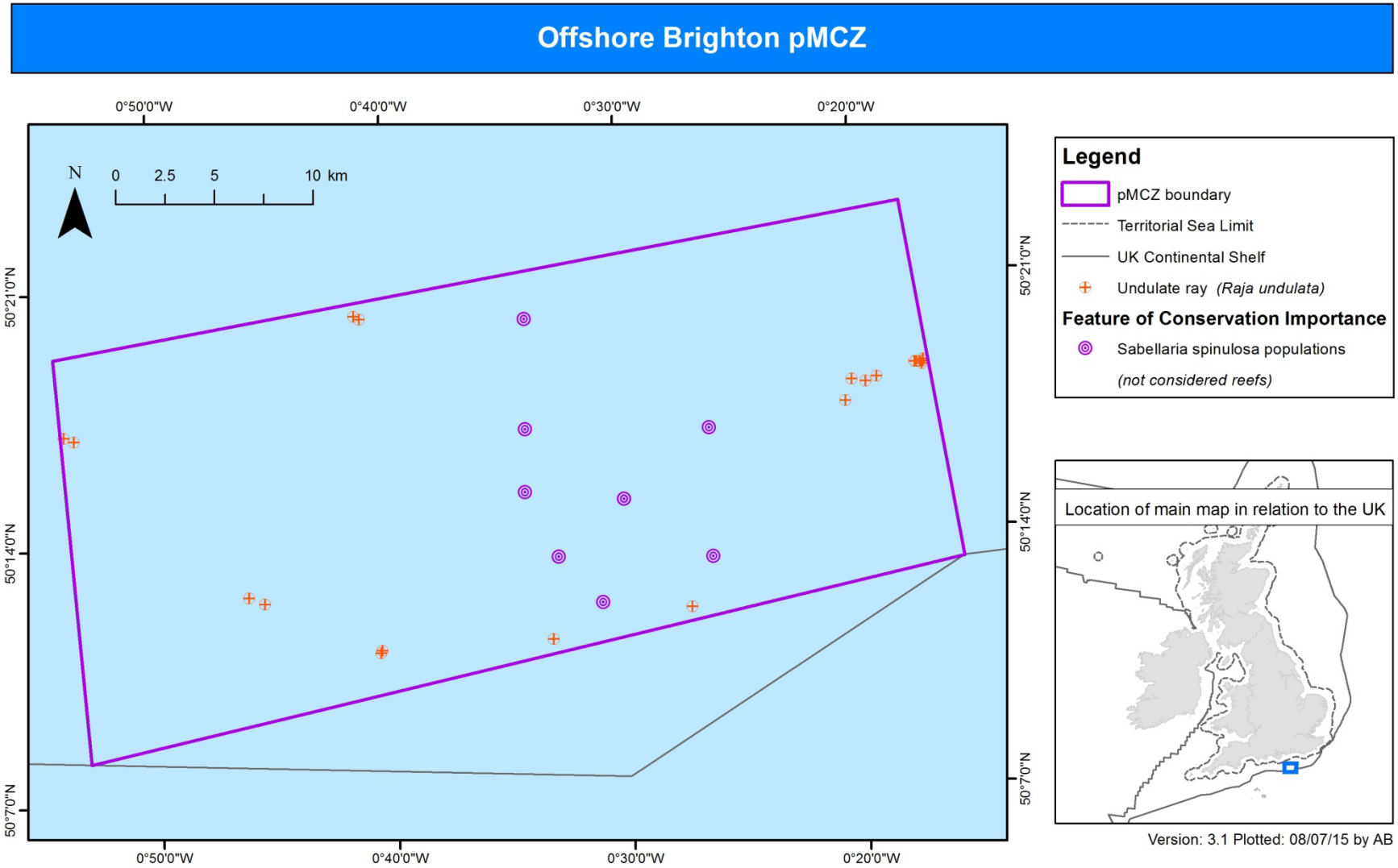


Figure 20: Distribution of the Features of Conservation Importance in Offshore Brighton pMCZ

7.8. Offshore Overfalls pMCZ

Offshore Overfalls pMCZ was recommended for the broad-scale habitats **Subtidal coarse sediment**, **Subtidal sand** and **Subtidal mixed sediments**, the habitat FOCI **Ross worm (*Sabellaria spinulosa*) reefs**, the species FOCI **Native oyster (*Ostrea edulis*)**, the highly mobile species FOCI **Undulate ray (*Raja undulata*)**, **European eel** (***Anguilla anguilla***) and the geomorphological feature **English Channel outburst flood features**. JNCC provided advice on all these features in 2014[8], noting there were insufficient data to support the designation of **Ross worm (*Sabellaria spinulosa*) reefs, Native oyster (*Ostrea edulis*), European eel** (***Anguilla anguilla***) or **Undulate ray (*Raja undulata*)**.

7.8.1. Assessment of new data

JNCC assessed any requirement for revisions to its 2014 advice[8] in light of any new data available for the MCZ. The assessment followed the JNCC MCZ decision-tree process (see Section 6.1). The outcomes of the assessment are provided in Table 39, whereby the letters provided under the first and second branches relate to the outcome of the decision tree (see Figure 6). Where the application of the decision tree identified that no new advice was required, the 'Revised advice needed' cell in the table is highlighted in green. Cells highlighted in red indicate where new advice may be required for the feature, as summarised within the cell.

Table 39: Outcomes of decision-tree process for features in Offshore Overfalls pMCZ

Feature	Previously assessed?	New data available?	Decision Tree Outcomes	Revised advice needed?
Moderate energy circalittoral rock	No	Yes	**Branch 1 – Outcome B** Advice required for feature **Branch 2 – N/A**	Yes - Feature has not been assessed previously and therefore requires advice against the MCZ Protocols[13]. See Section 7.8.2.
Subtidal coarse sediment	Yes	Yes	**Branch 1 – Outcome C** Consider whether any changes may trigger change to GMA. If so, provided revised feature condition advice **Branch 2 – Outcome D** No revised advice likely required however check whether any new feature extent data	No - New biophysical data to support the extent of this habitat. JNCC's 2014 advice[8] gave High confidence in feature extent, and these data do not change this. No revised advice required on confidence in feature extent. Updated VMS data (2009–2013) are consistent with the level of exposure presented in 2006-09 VMS data for bottom-contacting gears coincident with the feature. No revised GMA required.
Subtidal sand	Yes	Yes	**Branch 1 – Outcome B** Revised advice likely required for feature **Branch 2 – Outcome D** No revised advice likely required however check whether any new feature extent data	Yes - New biophysical data revise previously known extent of this habitat and therefore likely to change JNCC's 2014 advice[8] on the confidence of the feature's extent. Updated VMS data (2009 – 2013) are consistent with the level of exposure presented in 2006-09 VMS data for bottom-contacting gears coincident with the feature. No revised GMA required.
Subtidal mixed sediments	Yes	Yes		

Subtidal chalk	No	Yes	**Branch 1 – Outcome B** Advice required for feature **Branch 2 – N/A**	Yes - Feature has not been assessed previously and therefore requires advice against the MCZ Protocols[13]. See Section 7.8.2.
Ross worm (*Sabellaria spinulosa*) reefs	Yes	No	**Branch 1 – Outcome A** No revised advice required **Branch 2 – N/A**	No - No new biophysical data have become available to indicate the presence of this feature within the site. Not considered further following JNCC's 2014 advice[8] as there are no data to demonstrate presence of reef features.
European eel (*Anguilla anguilla*)	Yes	N/A		No - Not considered further following JNCC's 2014 advice[8] where this locality does not demonstrate any evidence of site fidelity for this species.
Undulate ray (*Raja undulata*)	Yes	Yes	**Branch 1 – Outcome C** Consider whether any changes may trigger change to GMA. If so, provided revised feature condition advice **Branch 2 – N/A**	No - New data received through public consultation but these data do not demonstrate any evidence of site fidelity for this species and thus JNCC's 2014 advice[8] does not require any revision.
Native oyster (*Ostrea edulis*)	Yes	No	**Branch 1 – Outcome A** No revised advice required **Branch 2 – N/A**	No - No new biophysical data has become available to indicate the presence of this feature within the site. Not considered further following JNCC's 2014 advice[8] as there are no data to confirm a recent presence within the site.
English channel outburst flood features	Yes	No	**Branch 1 – Outcome A** No revised advice required **Branch 2 – Outcome F** Consider whether new feature condition advice required	No - There are no new data to change knowledge of feature extent and the GMA for a relict geomorphological feature cannot be changed, so therefore no revised advice required for this feature.

Since JNCC's 2014 advice[8], new data are available that improve our understanding of the extent of features within the site while also indicating the presence of **Moderate energy circalittoral rock** and **Subtidal chalk** within the pMCZ. Neither of these habitats have previously been recommended as features for the site and thus require advice on our confidence in feature presence, extent and condition.

These new data do not provide any greater understanding of the features **Ross Worm (*Sabellaria spinulosa*) reefs**, **Native oyster (*Ostrea edulis*)** and **European eel** (***Anguillia anguilla***) and the geomorphological feature **English Channel outburst flood features**. All these features have all been assigned an 'A' category under the first branch of the JNCC MCZ decision-tree process (see Figure 6) with no advice further required in 2015.

New data were provided through the MCZ public consultation to further support the presence of **Undulate ray (*Raja undulata*)** within the site, however these data do not provide any further evidence of site fidelity for the species in Offshore Overfalls pMCZ. Therefore the feature has been assigned an 'A' category indicating no revisions to JNCC's 2014 advice[8] required.

Subtidal coarse sediment was previously recommended in JNCC's 2014 advice[8] as **High** confidence in its presence and extent within the site. New data are now available on the extent of this feature within the site. JNCC has reviewed these data and determined that it is not likely to change our confidence in feature

presence or extent from our view in 2014[8]. JNCC note that while the mapped extent of the Subtidal coarse sediment has changed, we remain highly confident as there are still many ground-truth records to support the presence of the feature in the site and these records are well distributed across the mapped extent of the feature. Therefore the feature was assigned a 'C' category indicating it does not require any revised advice in 2015 on confidence in feature presence and extent.

Since JNCC's 2014 advice[8], new data are now available for the extent of **Subtidal sand** and **Subtidal mixed sediments** within the site. These features had previously been assessed as **Low** and **Moderate** confidence respectively in their extent across the pMCZ. A review of the new data suggests that JNCC's 2014 advice[8] on the confidence in feature extent is likely to change for both features. Therefore both features have been assigned a 'B' category under the first branch of the JNCC MCZ decision-tree process and require revised post-consultation advice in 2015.

JNCC received updated fisheries data[31] (VMS aggregated data 2009-2013) since our 2014 advice[8]. For all features that JNCC were able to consider for a GMA in our 2014 advice[8], we recommended a **Recover** GMA. The features were exposed to a large amount of regular bottom-contacting fishing gears and while their distribution within the site may have changed, the exposure levels from the updated VMS data remain high enough to trigger a **Recover** GMA. The features are therefore assigned a 'D' category indicating no further advice in relation to the GMAs for these features is needed in 2015.

JNCC has updated the vulnerability assessment tables that were presented in our JNCC's 2014 advice[8] – see Annex 5 of the current document.

The geomorphological feature **English Channel outburst flood features** were assigned an 'F' category indicating no further GMA advice is required in 2015; JNCC note this feature can only have a **Maintain** GMA (see Technical Protocol F[29] for more information).

JNCC did not recommend a GMA in 2014 for either **Ross worm (*Sabellaria spinulosa)* reefs** (no data to support the presence of a reef feature in the site) or **Native oyster (*Ostrea edulis*)** (no confirmed presence in the site). No new data are available for either feature and therefore JNCC remains unable to recommend a GMA for either feature in 2015.

7.8.2. Assessment of Feature Presence and Extent

Table 40: Offshore Overfalls pMCZ Evidence Assessment Summary

Site (Code)	Feature	Evidence Assessment Results			
		Confidence in presence	Rationale for confidence in feature presence	Confidence in extent	Rationale for confidence in feature extent
Offshore Overfalls pMCZ (BS 17)	**Moderate energy circalittoral rock***	**High** (*)	Presence of the feature is supported by two one minute sections of video displaying continuous occurrence of Moderate energy circalittoral rock.	**Low** (*)	There is one ground-truth data point coinciding with the mapped extent of Moderate energy circalittoral rock within the site. Expert judgement has been applied to assign Low confidence in the extent of the feature.
	Subtidal sand	**Moderate** (Moderate)	Three ground-truth points confirm the presence of Subtidal sand in the site.	**Low** (Low)	Multiple samples in combination with a habitat map demonstrate the extent of Subtidal sand in the site. However, very few of these points are located within the mapped extent, and some mapped areas have no corresponding ground-truth samples, thus expert judgement has been used to assign a Low confidence score.
	Subtidal mixed sediments	**High** (High)	There are 20 ground-truth points that confirm the presence of Subtidal mixed sediments in the site.	**Moderate** (Moderate)	Multiple samples occur within the mapped extent of the feature within the site, which is sufficient to assign Moderate confidence in the feature extent, noting there is some residual uncertainty in the feature's full extent
	Subtidal chalk*	**Moderate** (*)	Presence of the feature is supported by a single one minute section of video displaying continuous occurrence of Subtidal chalk.	**Low** (*)	A habitat map displays a significant area of Subtidal chalk within the site; however there are limited ground truth data to support this area. Therefore expert judgement has been used to assign a Low confidence in the extent of Subtidal chalk within Offshore Overfalls pMCZ

The blue text represents the previous assessment score
*These features are recently identified and therefore they have no score from a past assessment.

Moderate energy circalittoral rock has not previously been considered in Offshore Overfalls pMCZ. The presence of this feature within the site is confirmed by two ground-truth records that establish a continuous presence of **Moderate energy circalittoral rock** within the site (see Table 31). These ground-truth records are from two separate video tows and meet the criteria for ground-truth data points that can support rocky habitats (see Section 5.1 of JNCC's 2014 advice[8]). 15 still images were also gathered across these two camera tows in the north-west of the site to provide further information about the feature. Moderate energy circalittoral rock is also mapped in the site within the MB0120[18] habitat map. JNCC have **High** confidence in the presence of this feature within the site. JNCC have **Low** confidence in feature extent due to residual uncertainties in the map products. Whilst a habitat map has been produced through MB0120[18], the acoustic data supporting the map were predominantly derived from Astrium (2011) data[44] that are low-resolution modelled bathymetry data, with some higher resolution acoustic data gathered through MB0120[18]. Both ground-truth samples coincide with the mapped feature extent in the north-west of the site; however other areas have been mapped as the rock feature in the site without any supporting ground-truth

data. Due to there being no confirmed presence of **Moderate energy circalittoral rock** in some mapped areas that make up a large proportion of the site, there are residual uncertainties about the extent of **Moderate energy circalittoral rock** in the site. JNCC note the only data to support such an extent are low resolution acoustic data, which may not discriminate exposed rock outcrops from areas where the rock is covered by a sediment veneer. Consequently, JNCC has **Low** confidence in feature extent.

Subtidal sand was originally identified within the site from two sample points collected as part of the South Coast REC survey[45]. These points were assigned to the broad-scale habitat **Subtidal sand** based on the biotopes present within the sample. The June 2012 MB0120[18] survey identified a single record of the feature within the site despite extensive sampling in an area previously modelled to be **Subtidal sand**. Other PSA ground-truthing data from MB0120[18] found either Subtidal coarse sediment or Subtidal mixed sediments instead.

Considering the limited number of records available, JNCC continues to have **Moderate** confidence in feature presence of **Subtidal sand**, noting two of the three sample points intersect the mapped extent of the feature in the MB0120[18] habitat map. However, while our knowledge of the extent of **Subtidal sand** has changed within Offshore Overfalls pMCZ, some uncertainty remains in the full extent of the feature within the site because there are limited sample data to verify areas mapped as **Subtidal sand** within the recent habitat map. Furthermore, the mapped areas of **Subtidal sand** are in close proximity to sample points that indicate the presence of either **Subtidal coarse sediment** or **Subtidal mixed sediments**. The habitat map relied on expert interpretation of the sample data where the extent of **Subtidal sand** was estimated as the midpoint between data samples classified to **Subtidal sand** and samples classified to other sedimentary features. Consequently, JNCC continues to have **Low** confidence in the feature's extent throughout the whole site.

Subtidal mixed sediments have been recorded in 20 ground-truth points within the site: six samples from a combination of a Cefas data-mining study and the South Coast REC ground-truth data[45], and 14 samples from the MB0120[18] survey in 2012. JNCC continues to have **High** confidence in the feature's presence within the site. The recent habitat map delivered through the MB0120[18] work indicates that the extent of **Subtidal mixed sediments** has reduced within the site as compared to our knowledge in 2014. While there remains a good correlation between the ground-truth data and the mapped extent of the feature, there are large areas of the mapped extent that do not have supporting ground-truth data. Due to the low resolution of the acoustic data used to derive the habitat map, JNCC only has **Moderate** confidence in the feature extent within the site. JNCC notes 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. JNCC does not have High confidence in feature extent due to the disproportionate spread of samples across the feature.

Subtidal chalk has not previously been considered as a feature of Offshore Overfalls pMCZ. There are data to support the presence of this feature within the site - five still images from one video tow in the north-west of the site, and a single image from a tow in the east of the site. JNCC has reviewed these data and determined that there is continuous habitat in the tow containing the five still images, classified as Subtidal chalk. JNCC therefore view there to be a single ground-truth record of Subtidal chalk occurring within the site as per the methodology outlined in Section 6.2.1. Additionally, this tow coincides with the mapped extent of **Subtidal chalk** within the habitat map for the site produced through the MB0120[18] work in 2012 which was derived using the ground-truth and acoustic data. JNCC has a **Moderate** confidence in the feature's presence within the site. JNCC has **Low** confidence in the extent of **Subtidal chalk** within the site as there are insufficient ground truth data to support the wide ranging extent shown in the recent habitat map. JNCC note there is a minimum viable patch diameter of 0.5km^2 suggested for **Subtidal chalk** habitat within the Ecological Network Guidance (**ENG**)[46]. Therefore whilst this habitat is present within the site, data gathered so far cannot verify its true extent and whether there is sufficient area of the habitat to be a viable feature of Offshore Overfalls pMCZ.

7.8.3. Advice on the General Management Approach for MCZ features

A summary of JNCC's assessments of confidence in feature condition and the GMA proposed are presented below in Table 41 (see Section 6.2.3 for the approach). Further information on the vulnerability assessments is provided in Annex 5.

Table 41: **Summary of JNCC's conservation advice for features in Offshore Overfalls pMCZ**

Site (Code)	Feature	Confidence in feature condition (MCZ Technical Protocol F)[29]	General Management Approach advised (MCZ Conservation Objective Guidance)[34]
Offshore Overfalls pMCZ (BS 17)	**Moderate energy circalittoral rock***	**Low** (*)	**Recover** (*)
	Subtidal chalk*	**Low** (*)	**Maintain** (*)

The blue text represents the previous assessment score
*These features are recently identified and therefore they have no score from a past assessment.

For the feature **Moderate energy circalittoral rock** there is evidence of benthic fishing activity occurring over the extent of the feature, to which the feature is either moderately or highly sensitive. Due to the intensity of activity taking place, JNCC recommends a **Recover** GMA for this feature.

[46] 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

The feature **Subtidal chalk** is defined by both the biological communities together with the associated physical substrata. It is a soft rock, capable of being bored into by bivalves and is often too soft for sessile filter-feeding animals to attach and thrive in large numbers[47].

The sensitivity assessment provided in MB0102[48] assesses the sensitivity of the biological communities associated with **Subtidal chalk**, and does not take into account the sensitivity of the physical structure of the soft rock to physical pressures. The relatively impoverished biological communities associated with **Subtidal chalk** have driven the sensitivity scores to the physical abrasion categories. **Subtidal chalk** being a relatively soft rock is likely to be damaged by physical abrasion. If abraded, the feature is not capable of recovering its physical structure unlike the associated biological communities which are capable of recovery.

The assessment of **Subtidal chalk's** sensitivity to physical abrasion as presented in MB0102[48] is provided below. Note low confidence accompanies these assessments:

- Surface abrasion: damage to seabed surface feature - Low sensitivity;
- Shallow abrasion/penetration: damage to seabed surface & penetration to over & including 25mm - Low sensitivity;
- Structural abrasion/penetration: structural damage to seabed >25mm - Moderate sensitivity.

JNCC has applied the following sensitivity scores to **Subtidal chalk**, all of which continue to be associated with a low confidence level:

- Surface abrasion: damage to seabed surface feature - Low sensitivity;
- Shallow abrasion/penetration: damage to seabed surface & penetration to over & including 25mm - Moderate sensitivity;
- Structural abrasion/penetration: structural damage to seabed >25mm - Moderate sensitivity.

Expert judgment has been used to raise the sensitivity for shallow abrasion by one category to reflect the sensitivity of the substrata in combination with the sensitivity of the associated biological communities. Note surface abrasion refers to the physical abrasion of epifauna and does not incorporate penetration into the physical structure. JNCC has not therefore amended the sensitivity score for surface abrasion for **Subtidal chalk**. The score for sensitivity to structural abrasion is not amended because it is assessed as moderately sensitive and raising by one category is not considered necessary to capture the sensitivity of Subtidal chalk's physical structure. JNCC note that this application of expert judgement has been applied to the present circumstance only and are not proposing a permanent change to the sensitivity scores presented in MB0102[48]. Indeed this change is driven by the circumstances of the specific situation at Offshore Overfalls

[47] Roberts, et al. (2010). Review of existing approaches to evaluate marine habitat vulnerability to commercial fishing activities. Report SC080016/R3. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/291018/scho1110bteq-e-e.pdf

[48] MB0102 Marine Biodiversity R&D Programme. Available at: http://randd.defra.gov.uk/Document.aspx?Document=mb0102_8589_TRP.pdf

pMCZ and undertaken in order to ensure a scientifically robust outcome for JNCC's GMA advice for **Subtidal chalk**.

Evidence indicates that benthic trawled gears are operating over the area of **Subtidal chalk** as mapped. There is relatively very little understanding of the impacts of fishing activities on subtidal chalk reefs habitats[47]. JNCC is unaware of any subsequent studies applicable to this habitat.

In light of the lack of evidence to indicate how **Subtidal chalk** would be impacted by the passing of different benthic trawled gears or rather the degree of penetration from different types of gear, the level of exposure to the shallow and structural abrasion pressures over its mapped extent cannot be assessed. Given there is unknown exposure and no moderate or high vulnerabilities to any other pressures, JNCC advise a **Maintain** GMA for the feature **Subtidal chalk** in Offshore Overfalls pMCZ.

7.8.4. Confidence in Feature condition

Technical Protocol F[29], states that the confidence in any feature condition established indirectly through the vulnerability assessment approach defaults to 'low' unless further criteria are satisfied. These criteria were not met thus JNCC's confidence in the condition of the features **Moderate energy circalittoral rock** and **Subtidal chalk** is **Low.**

7.8.5. Feature Risk

Section 6.2 provides information on the methodology followed for the assessment of risk. JNCC's 2014 advice[8] (Table 167 on page 530) lists those pressures to which features are currently **Moderately** or **Highly** vulnerable, features that are considered to be at **High** future risk, and the pressures to which these features are **Highly** sensitive (with moderate/high confidence).

Feature risk remains unchanged since JNCC's advice in 2014[8] for all features in Offshore Overfalls pMCZ (see Section 6.14 on page 178) other than **Moderate energy circalittoral rock**, **Subtidal sand and Subtidal chalk** (see Table 42).

Table 42: **Offshore Overfalls pMCZ feature risk assessment**

Site (Code)	Feature	Current risk	Future risk
Offshore Overfalls pMCZ (BS 17)	**Moderate energy circalittoral rock**	**High** Feature is **highly vulnerable** to one/more pressures.	**High** Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures
	Subtidal sand	**High** Feature is **highly vulnerable** to one/more pressures.	**High** Feature is **highly sensitive** (with moderate/high confidence) to one/more pressures.

	Subtidal chalk	**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 chalk** is **highly sensitive** to physical change to another seabed type.

7.8.6. Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site have appropriate data to support their designation following the method outlined in Section 6.2.5 of this present advice. The assessment and results are presented in Table 43, Table 44 and Table 45 below.

Feature assessment

Table 43: Offshore Overfalls pMCZ feature data sufficiency assessment

Site (Code)	Feature	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 pMCZ (BS 17)	**Moderate energy circalittoral rock**	**Yes** (High confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment (see Table 44).**
	Subtidal coarse sediment	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**
	Subtidal sand	**Yes** (Moderate confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment (see Table 44).**
	Subtidal mixed sediments	**Yes** (High confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**
	Subtidal chalk	**Yes** (Moderate confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment (see Table 44).**

Table 44: Offshore Overfalls pMCZ 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 pMCZ (BS 17)	**Moderate energy circalittoral rock**	**Yes** - The site is the only option within the Tranche Two sites to provide a replicate for Moderate energy circalittoral rock in the region and could contribute to increasing the amount of this feature afforded protection in the region (currently<1% of the known area protected in the existing network). The confidence in feature presence within the site is high.	**N/A**	**Conservation benefits support priority feature designation*.**

	Subtidal sand	**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 ~3% of known distribution protected in the existing network). The confidence in feature presence within the site is high.	**N/A**	**Conservation benefits support priority feature designation***
	Subtidal chalk	**No** - There are already three replicates of Subtidal chalk afforded protection within the existing MPA network in this region. The confidence in feature presence is moderate within the site.	**Yes** - This feature is currently at Low risk of damage but is at High risk of damage in the future from the following activities: Extracting activities or infrastructure development	**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 there is uncertainty about the true extent of the feature within the site and therefore whether it is a viable habitat or not.

***** Subject to considerations listed in the method in Section 6.2.5.

Site level assessment

Table 45: Offshore Overfalls pMCZ 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?	**JNCC's 2014 Advice** ***"Does this site contribute to filling a big gap in the network?*** ***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 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.* ***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):* - *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.* - *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.* - *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 pMCZ.* ***Adequacy** (seeking protection of at least 10% of the known area of each EUNIS Level 3 habitat within each CP2 region):* - *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).* - *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.* - *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."* **JNCC's 2015 Updated Advice** **Moderate energy circalittoral rock**, an additional feature considered in 2015, could fill a replication gap in the MPA network. This site is the only option within the Tranche Two sites to provide a replicate for Moderate energy circalittoral rock in 75-200 m water depth; there is one site within the region in the existing network that affords protection to this feature which is Wight-Barfleur Reef SAC. The Moderate energy circalittoral rock in Offshore Overfalls pMCZ would also help to increase the amount of this feature protected within the region (currently <1%of the known area afforded protection in the existing network). **Subtidal chalk**, another additional feature considered in 2015, would not contribute to filling a 'big gap' in the Eastern Channel region. The analysis of 'big gaps'[7] in the existing MPA network in early 2014 found more than two examples of this habitat afforded protection in this region.

7.8.7. Feature maps

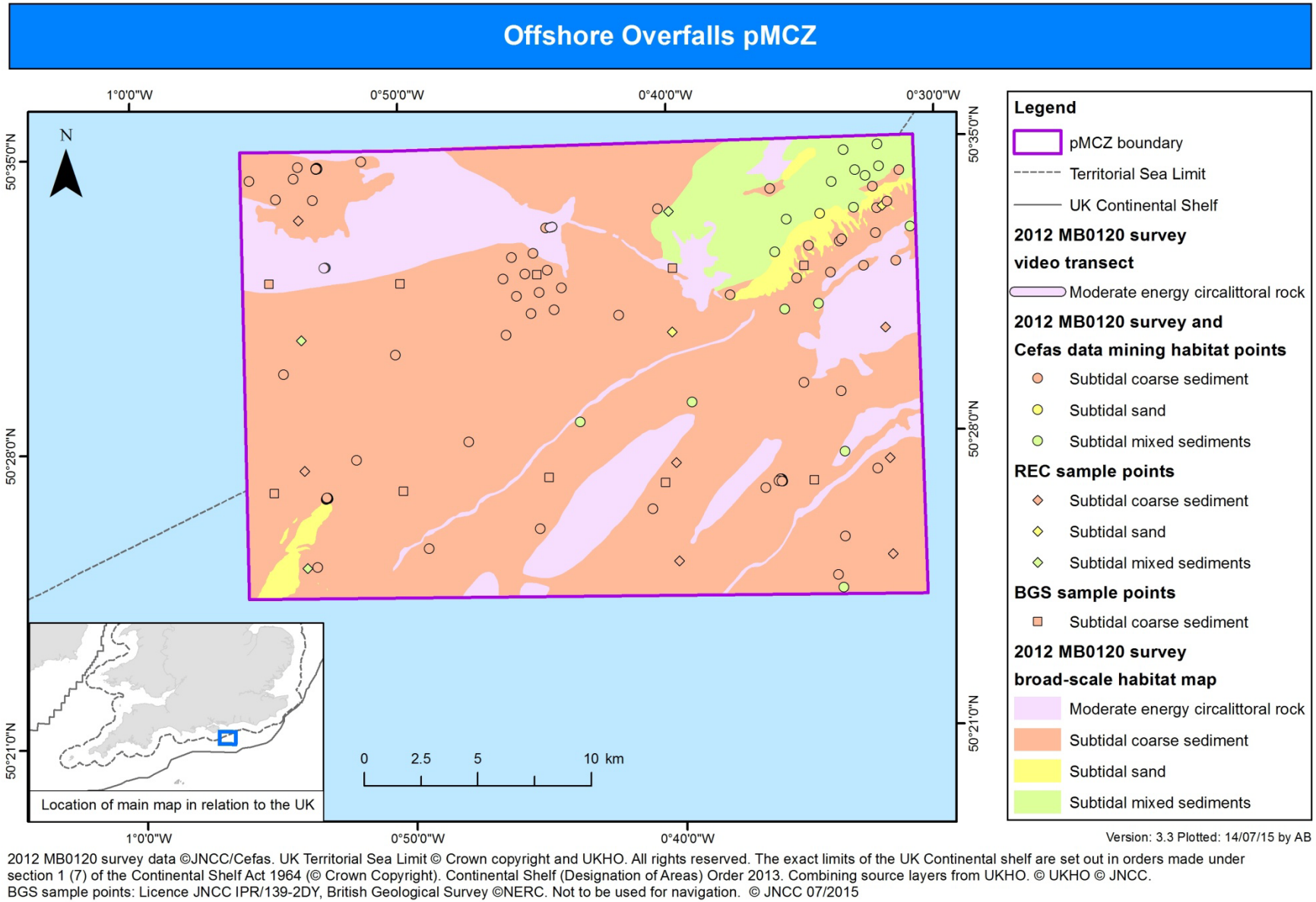


Figure 21: Distribution of broad-scale habitats in Offshore Overfalls pMCZ

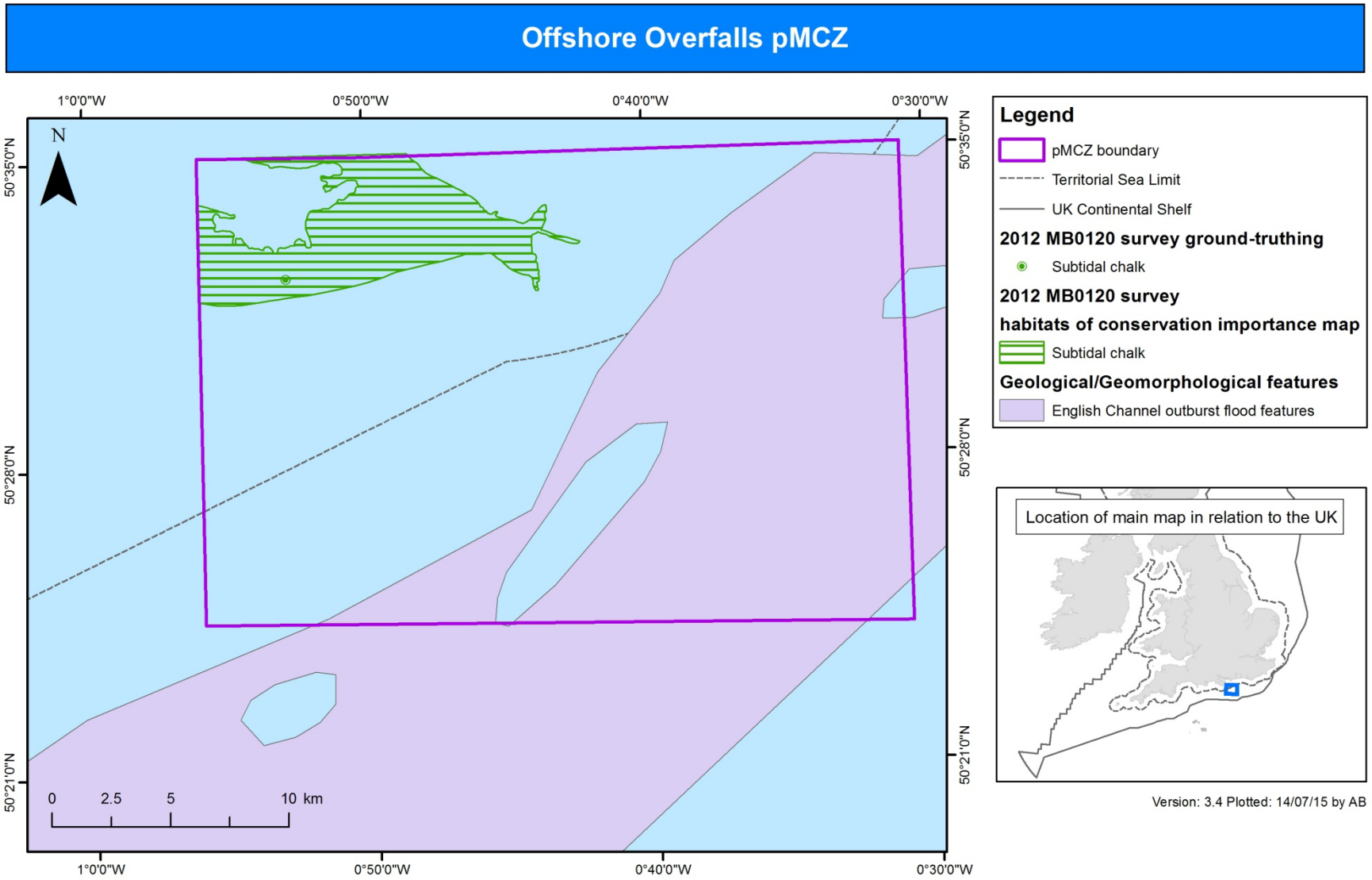


Figure 22: Distribution of the Features of Conservation Importance and the geological feature in Offshore Overfalls pMCZ

7.9. 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-truth data were acquired that identified the areas of **Subtidal mud**, **Mud habitats in deep water** and records of the species FOCI **Fan mussel** (***Atrina fragilis***). These features were all reviewed by JNCC in 2014[8].

7.9.1. Assessment of new data

JNCC assessed any requirement for revisions to its 2014 advice[8] in light of any new data available for the MCZ. The assessment followed the JNCC MCZ decision-tree process (see Section 6.1). The outcomes of the assessment are provided in Table 46, whereby the letters provided under the first and second branches relate to the outcome of the decision tree (see Figure 6). Where the application of the decision tree identified that no new advice was required, the 'Revised advice needed' cell in the table is highlighted in green. Cells highlighted in red indicate where new advice may be required for the feature, as summarised within the cell.

Table 46: Outcomes of decision-tree process for features in South-West Deeps (West) MCZ

Feature	Previously assessed?	New data available?	Decision Tree Outcomes	Revised advice needed?
Subtidal mud	Yes	Yes	**Branch 1 – Outcome B** Revised advice likely required for feature **Branch 2 – Outcome D** No revised advice likely required however check whether any new feature extent data	Yes - A recent habitat map from survey is available, thus revised advice on feature extent is required. Updated VMS data (2009–2013) are consistent with the level of exposure presented in 2006-09 VMS data for bottom-contacting gears coincident with the feature, and so no new GMA advice is required. The feature remains moderately exposed to removal of species and surface abrasion pressures to which it has medium sensitivity.
Mud habitats in deep water	Yes	Yes		
Fan mussel (*Atrina fragilis*)	Yes	Yes		Yes - New ground truth data have become available since JNCC's 2014 advice[8], and as a result revised advice on feature presence and distribution are required. Previously the GMA was set as Recover. The new distribution and fisheries information indicate that the feature's exposure to pressures associated with benthic trawling has increased and therefore a new assessment of the GMA is not necessary.

Since JNCC's 2014 advice[8], revised data have been received from the 2013 Defra MB0120[18] survey and a new habitat map produced that covers 50% of the site. These datasets show a change in the extent of features and therefore they have been assigned a 'B' category under the MCZ decision-tree process (see Figure 6), requiring revised advice.

JNCC received updated fisheries data[31] (VMS aggregated data 2009-2013) since its 2014 advice[8] for South-West Deeps (West) MCZ. All the three new features were previously recommended to have a **Recover** GMA in JNCC's 2014 advice[8], due to their exposure to a large amount of regular bottom-

contacting fishing gears; the features were assigned a 'D' category because the updated VMS data corroborates or shows an increase in the exposure to which the features are subject. There is no need for any further advice in relation to the GMAs for these features even where the extent of these has changed.

JNCC have updated the vulnerability assessment tables presented our 2014 advice[8] - see Annex 5 of the current document.

7.9.2. Assessment of Feature Presence and Extent

Table 47: South-West Deeps (West) MCZ Evidence Assessment Summary

Site (Code)	Feature	Evidence Assessment Results			
		Confidence in presence	Rationale for confidence in feature presence	Confidence in extent	Rationale for confidence in feature extent
South-West Deeps (West) MCZ (FS02)	**Subtidal mud**	**High** (High)	The feature is identified by a habitat map from survey and is supported by nine ground-truth samples	**High** (Moderate)	A partial habitat map from survey is available which covers approximately 50% of the site. The area of mud is well delineated in the mapped areas and although the MB0120 habitat map only covers part of the site, the data gave JNCC confidence that there were no significant areas of mud found outside of the mapped area in MB0120[18].
	Mud habitats in deep water	**High** (High)	The feature is identified by a habitat map from survey and is supported by nine ground-truth samples	**High** (Moderate)	A habitat map from survey is available which includes transects across the site. The area of mud habitat is well delineated in the mapped transect lines and it is unlikely that there will be any large areas of the feature in unmapped areas.
	Fan mussel (*Atrina fragilis*)	**High** (Low)	Five records of the species have been recorded in the site within the last six years.	**Moderate** (Low)	The records are from surveys within the last six years. However, they are dispersed across the site, and due to the features cryptic nature and dispersed distribution it is difficult to assess extent.

The blue text represents the previous assessment score

Since JNCC's 2014 advice[8] on South-West Deeps (West) MCZ, additional data have been processed from the MB0120[18] survey of the site in 2013. The products include a new habitat map, covering 51% of the site, created from both acoustic data and ground-truth data. The map used in JNCC's 2014 advice[8] modelled the distribution of habitats from the PSA of the sediment samples only; it continues to provide the best available evidence for those areas where there is no new habitat map.

There are nine sample points from the 2013 survey (MB0120[18]) that demonstrate the presence of **Subtidal mud** and **Mud habitats in deep water** in the site. The recent habitat map further supports the presence of these features within the site. Therefore, following Technical Protocol E[27] and associated guidance[28], JNCC continue to have **High** confidence in the presence of these two features, as noted in our 2014 advice[8]. The

new habitat map covers 51% of the South-West Deeps (West) MCZ where the features appear in both large areas and within transect lines. However in the north of the site where **Subtidal mud** and **Mud habitats in deep water** occur, their mapped extent is lower due to the limited data availability (i.e. part of the area is mapped within transect lines only). Nevertheless, **Subtidal mud** and **Mud habitats in deep water** are clearly delineated within the north of the site, but there is limited evidence to support a substantial presence elsewhere in the site beyond the mapped areas (a single ground-truth sample in the west of the site is identified as mud features and does not provide any evidence that a large patch of mud has not been mapped). Notwithstanding these residual uncertainties, JNCC has **High** confidence in the extent of **Subtidal mud** and **Mud habitats in deep water** within the site.

A **Fan mussel (*Atrina fragilis*)** was recorded in five different ground-truth samples from the site; three juveniles from grab samples, one observation in a video and one observation in a still image. The samples were all collected by the 2013 MB0120[18] survey and the evidence suggests that they were live specimens at the time of sampling. As all the data are less than six years old and three of the samples were collected using appropriate techniques, and the feature identified from an actual specimen, JNCC has **High** confidence in the presence of **Fan mussel (*Atrina fragilis*)** within South-West Deeps (West) MCZ. JNCC has **Moderate** confidence in feature distribution because the records are widely distributed across the MCZ with no clear areas where the species may be aggregated. The limited data suggest the species occurs throughout the site. This distribution may be due to the fact that they are often buried in sediment, and as a result of their dispersed distribution (often solitary or in small patches), making it extremely difficult to assess extent with the limited data available. In addition, the records of fan mussel occur in a variety of habitats and therefore distribution cannot be associated with a particular broad-scale habitat.

7.9.3. Advice on the General Management Approach and Confidence in Feature condition for MCZ features

JNCC does not need to provide any updated advice on feature condition or the recommended GMA advised for the features in South-West Deeps (West) MCZ (see Section 7.9.1). Our confidence in feature condition therefore remains **Low** and the GMA as recommended is **Recover** for **Subtidal mud**, **Mud habitats in deep water** and **Fan mussel (*Atrina fragilis*)**.

7.9.4. Feature Risk

Feature risk remains unchanged since JNCC's advice in 2014[8] for all features in South-West Deeps (West) MCZ (see Section 6.18 on page 216), other than **Fan mussel (*Atrina fragilis*)** (see Table 48).

Table 48: South-West Deeps (West) MCZ feature risk assessment

Site (Code)	Feature	Current risk	Future risk
South-West Deeps (West) MCZ (FS02)	**Fan mussel (*Atrina fragilis*)**	**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.

7.9.5. Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site have appropriate data to support their designation following the method outlined in Section 6.2.5 of this present advice. The assessment and results are presented in Table 49 and Table 50 below.

Feature assessment

Table 49: South-West Deeps (West) MCZ feature data sufficiency assessment

Site (Code)	Feature	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 (FS02)	**Subtidal mud**	**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 support designation of feature**
	Fan mussel (*Atrina fragilis*)	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**

Site level assessment

Table 50: 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?	**Greater than 50%**
Q3: Does this site fill a 'big gap' in the network based on revised confidence assessments in feature presence and extent?	**JNCC's 2014 Advice** ***"Do the additional features within the site contribute to filling a big gap in the network?*** ***Yes***. *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.* ***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):* - *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 pMCZ, North-West of Jones Bank pMCZ and South of Celtic Deep rMCZ (although for South of Celtic Deep rMCZ we have recommended that the data does not justify designation).* - *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 pMCZ and North-West of Jones Bank pMCZ.* - *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 pMCZ.* ***Adequacy** (seeking protection of at least 10% of known area of each EUNIS Level 3 habitat within each CP2 region):* - *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."* **JNCC's 2015 Updated Advice** This site is now the only option to protect **Fan mussel (*Atrina fragilis*)** in the region; it is not currently afforded protection within the existing network of MPAs.

7.9.6. Feature maps

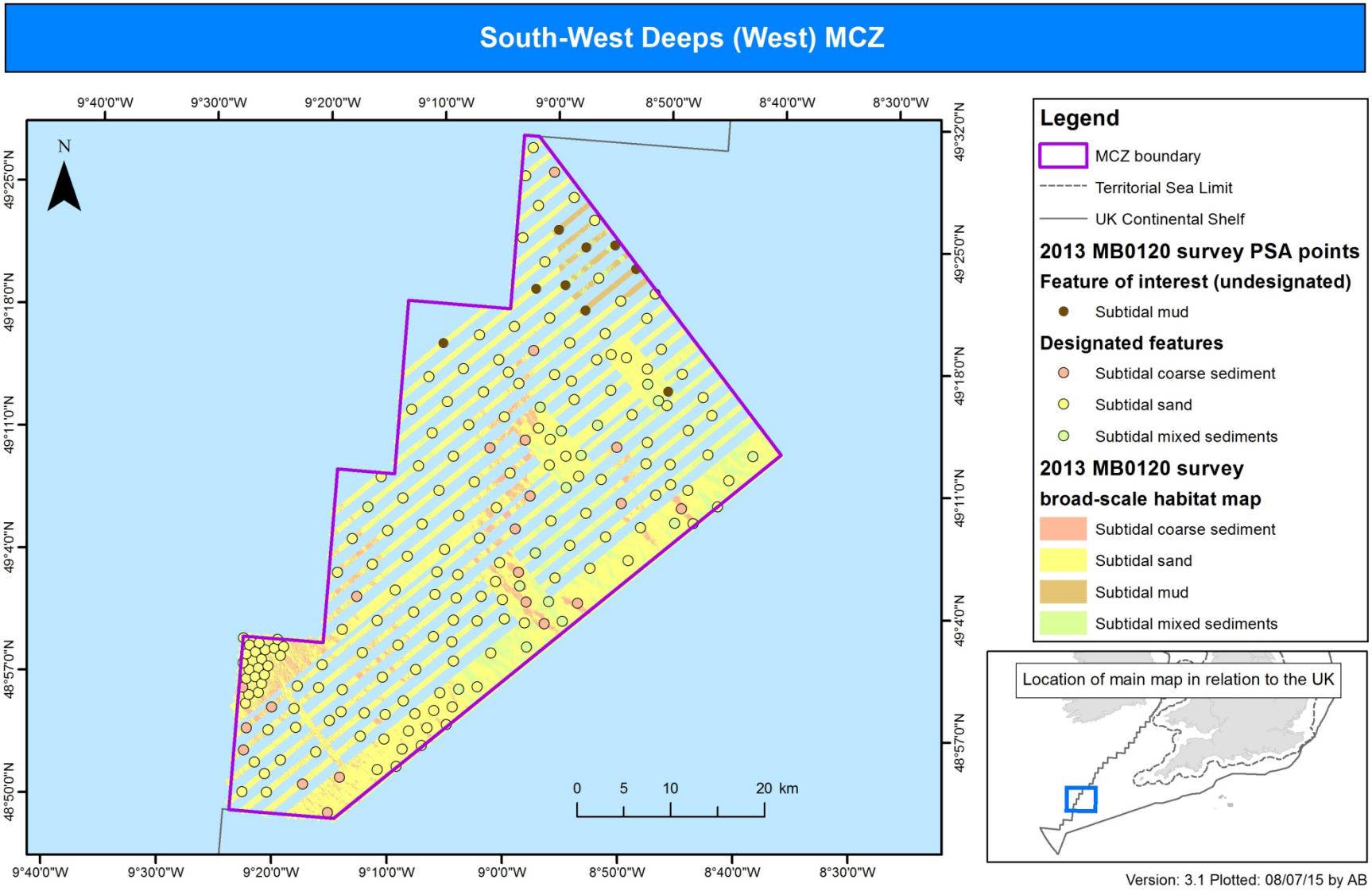


Figure 23: Distribution of broad-scale habitats in South-West Deeps (West) MCZ

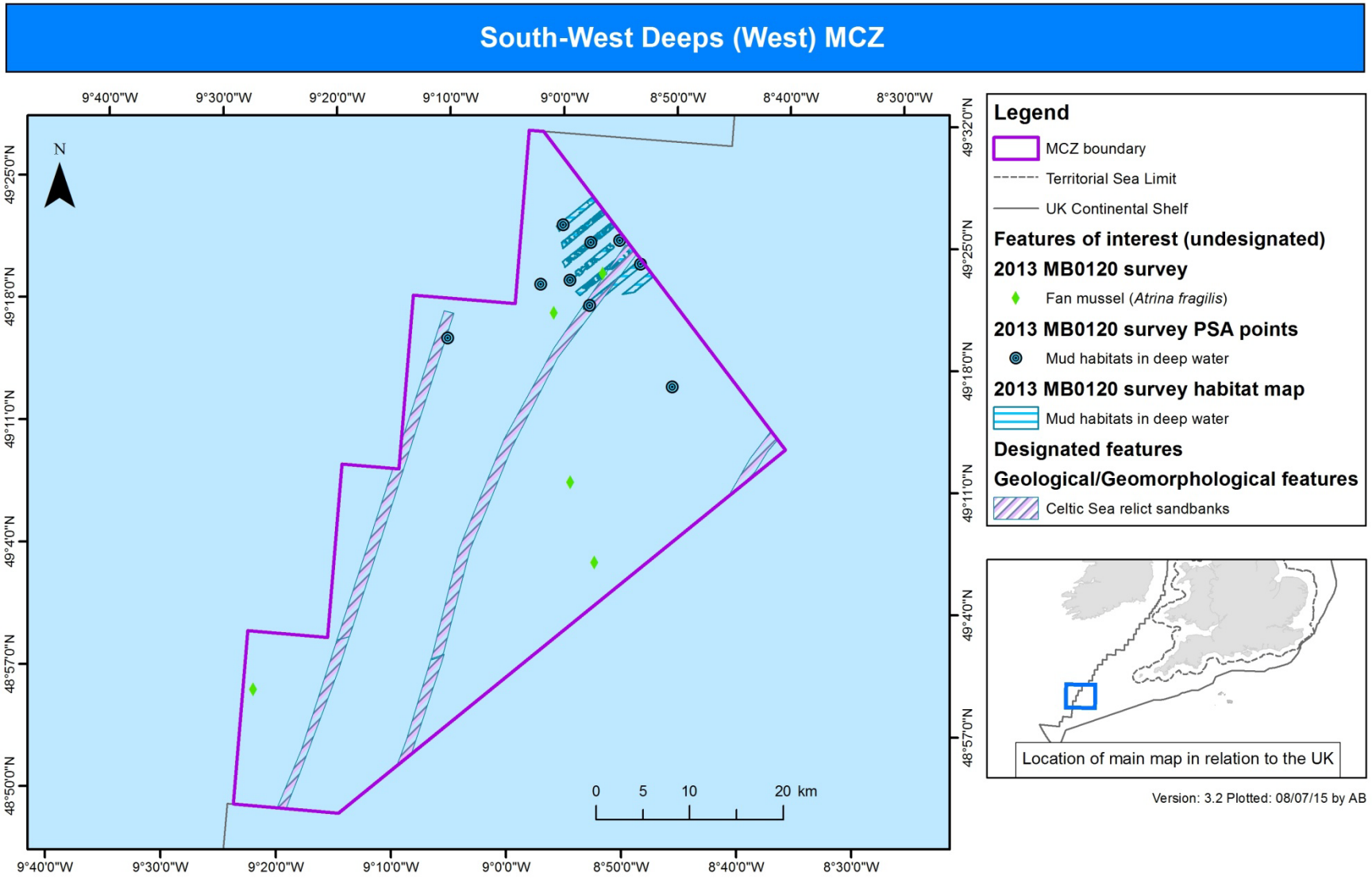


Figure 24: Distribution of the Features of Conservation Importance and the geological features in South-West Deeps (West) MCZ

7.10. Western Channel pMCZ

Western Channel pMCZ was recommended by the Finding Sanctuary regional MCZ project[40] for the broad-scale habitats **Moderate energy circalittoral rock**, **Subtidal coarse sediment** and **Subtidal mixed sediments**. Since the regional MCZ project recommended this site, **Subtidal sand** has also been identified within the site and all four features were included within JNCC's 2014 advice[8].

7.10.1. Assessment of new data

JNCC assessed any requirement for revisions to its 2014 advice[8] in light of any new data available for the MCZ. The assessment followed the JNCC MCZ decision-tree process (see Section 6.1). The outcomes of the assessment are provided in Table 51, whereby the letters provided under the first and second branches relate to the outcome of the decision tree (see Figure 6). Where the application of the decision tree identified that no new advice was required, the 'revised advice needed' cell in the table is highlighted in green. Cells highlighted in red indicate where new advice may be required for the feature, as summarised within the cell.

Table 51: **Outcomes of decision-tree process for features in Western Channel pMCZ**

Feature	Previously assessed?	New data available?	Decision Tree Outcomes	Revised advice needed?
Moderate energy circalittoral rock	Yes	Yes	**Branch 1 – Outcome A** No revised advice required **Branch 2 – Outcome D** No revised advice likely required however check whether any new feature extent data	No - Updated VMS data (2009–2013) are consistent with the level of exposure presented in 2006-09 VMS data for bottom contacting gears coincident with the feature, and so no further advice is required. No new advice on feature condition is required as all habitats in the site were recommended a 'Recover' GMA
Subtidal coarse sediment	Yes	Yes		No - No new advice on feature condition is expected to be required as all habitats in the site were 'Recover'. Updated gridded VMS data (2009–2013) are consistent with the level of exposure presented in gridded 2006-09 VMS data for bottom contacting gears coincident with the feature, and so no further advice is required.
Subtidal sand	Yes	Yes		
Subtidal mixed sediments	Yes	Yes		

No new biophysical data have been made available since JNCC's 2014 advice[8]. Under the JNCC MCZ decision-tree process, all features have been assigned an 'A' category (see Figure 6) indicating revised advice on the confidence in feature presence or extent is not required.

JNCC received updated fisheries data[31] (VMS aggregated data 2009-2013) since its 2014 advice[8] for Western Channel pMCZ. All the features in the site were previously recommended a **Recover** GMA in JNCC's 2014 advice[8] due to the features exposure to a large amount of regular bottom-contacting fishing gears, thus the features were assigned a 'D' category under the JNCC MCZ decision-tree process. The updated VMS data corroborates the previously exposure to which the features are subject. JNCC conclude there is no need for any further advice in relation to the GMAs for these features.

JNCC has updated the vulnerability assessment tables that were presented in our JNCC's 2014 advice[8] – see Annex 5 of the current document.

7.10.2. Feature Risk

Section 6.2.4 provides information on the data used and methodology followed for the assessment of risk. JNCC's 2014 advice[8] (Table 167 on page 530) lists those pressures to which features are currently **Moderately** or **Highly** vulnerable, the features that are considered to be at **High** future risk, and the pressures to which these features are **Highly sensitive** (with moderate/high confidence).

Feature risk remains unchanged since JNCC's advice in 2014[8] for all features in Western Channel pMCZ (see Section 6.19.4 on page 228).

7.10.3. Advice on the scientific basis to support feature/site designation

JNCC determined whether each feature and the site have appropriate data to support their designation following the method outlined in Section 6.2.5 of this present advice. The assessment and results are presented in Table 52, Table 53 and Table 54 below.

Feature assessment

Table 52: Western Channel pMCZ feature data sufficiency assessment

Site (Code)	Feature	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 pMCZ (FS 12)	**Moderate energy circalittoral rock**	**No** (Low confidence)	**N/A**	**N/A**	**Move to Question 2 of the feature assessment (see Table 53)**
	Subtidal coarse sediment	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**
	Subtidal sand	**Yes** (Moderate confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**
	Subtidal mixed sediments	**Yes** (Moderate confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment (see Table 53)**

Table 53: Western Channel pMCZ assessment of additional conservation/ecological considerations

Site (Code)	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
Western Channel pMCZ (FS 12)	**Moderate energy circalittoral rock**	**No** – there is low confidence in feature presence. However it should be noted that 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% protected in the existing network).	**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	**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 notes 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 54: Western Channel pMCZ 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?	**JNCC's 2014 Advice** ***"Does this site contribute to filling a big gap in the network?*** ***Yes****. 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.* ***Adequacy*** *(seeking protection of at least 10% of the known area of each EUNIS Level 3 habitat within each CP2 region):* - *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.* - *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).* - *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).* ***Connectivity** (ensuring that sites affording protection to the same habitat at EUNIS Level 2 are not further than 80km apart):* *This site would fill a spatial gap in the region for **Circalittoral rock** and **Subtidal sediment**."* **JNCC's 2015 Updated Advice** Since JNCC's advice was provided in 2014[8], Defra did not propose **Moderate energy circalittoral rock** as a feature for designation in 2015 and therefore if not designated would not contribute to filling any gaps in the MPA network.

7.10.4. Feature map

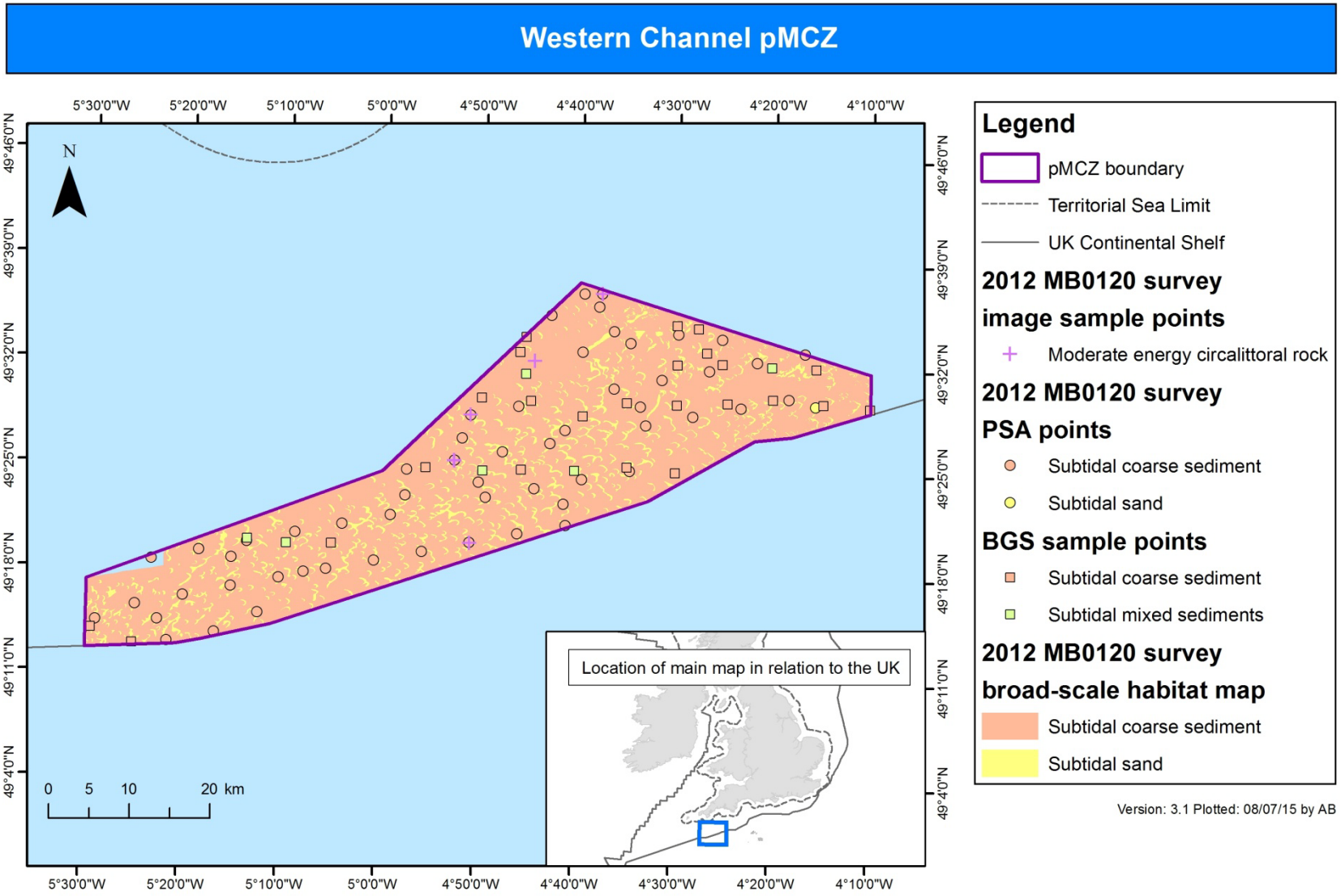


Figure 25: **Distribution of broad-scale habitats in Western Channel pMCZ**

8. Abbreviations/Acronyms

BGS	British Geological Survey
Cefas	Centre for Environment, Fisheries and Aquaculture Science
COG	Conservation Objective Guidance
cSAC	Candidate Special Area of Conservation
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
HOCI	Habitat [Feature] of Conservation Importance
JNCC	Joint Nature Conservation Committee
MCZ	Marine Conservation Zone
MESH	Mapping European Seabed Habitats Project
MMO	Marine Management Organisation
MNR	Marine Nature Reserve
MPA	Marine Protected Area
NE	Natural England
pMCZ	The Marine Conservation Zones *proposed* for designation in Tranche Two
PSA	Particular Size Analysis
QA	Quality Assurance
REC	Regional Environmental Characterisation
rMCZ	The 127 MCZs *recommended* by the regional projects
SAC	Special Area of Conservation
SAP	Science Advisory Panel
SCI	Site of Community Importance
VMS	Vessel Monitoring System

9. References

Astrium 2011. Creation of a high resolution Digital Elevation Model (DEM) of the British Isles continental shelf: Final Report. Prepared for Defra, Contract Reference: 13820. 26 pp.

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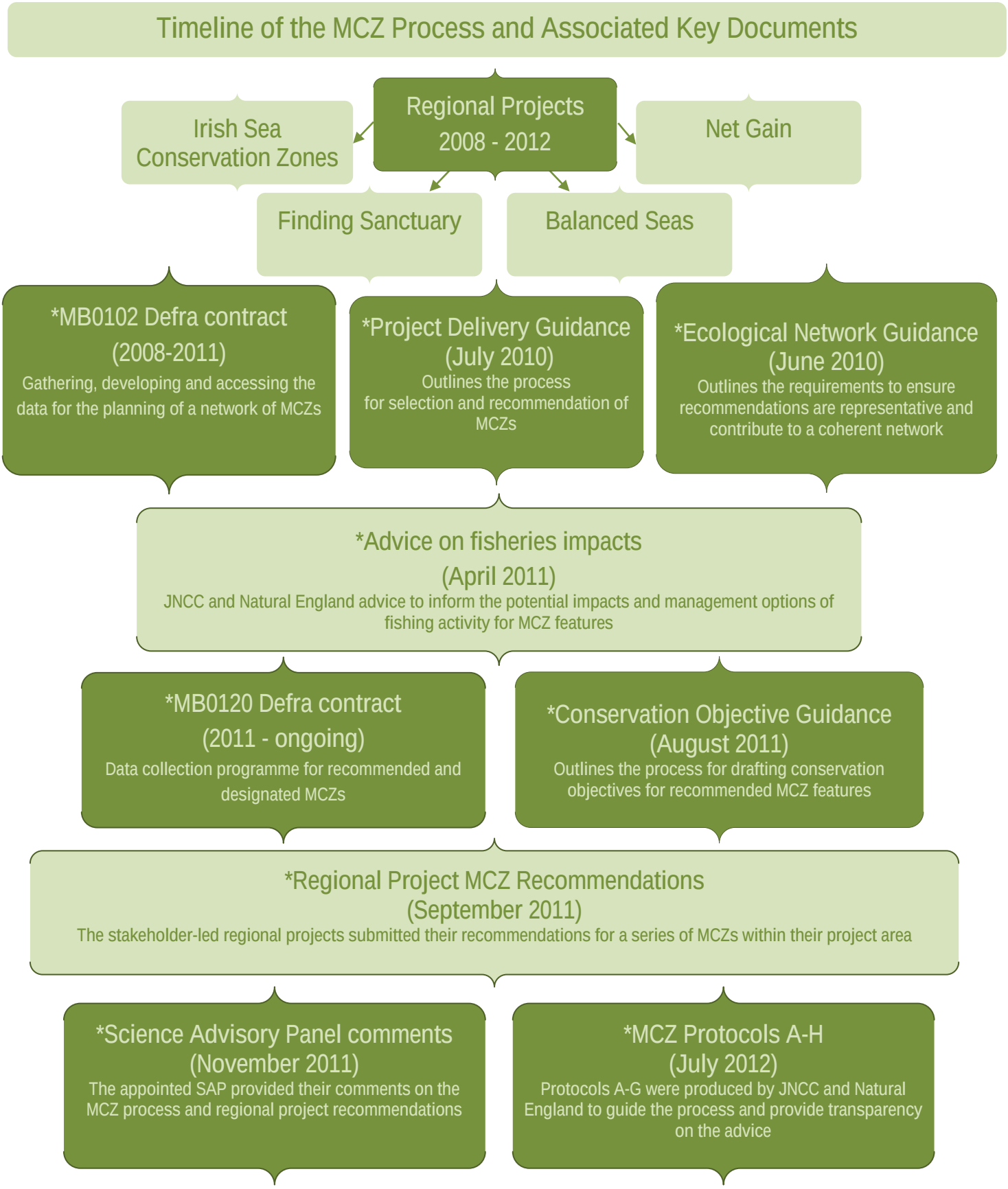
10. Annexes

Annex 1: MCZ timeline and summary of key documents contributing to the MCZ process



***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 support the 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

***JNCC 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 announced 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)**
JNCC reviewed available information to identify how the remaining MCZ site options could fill big gaps in the existing MPA network around England and offshore waters of Wales & Northern Ireland

***Clarification of Subtidal mud habitats (June 2014)**
JNCC published a report clarifying the classification of Subtidal mud and associated mud habitats

***Sufficiency of data for decision making (June 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

***JNCC Pre Consultation Advice on possible Tranche Two rMCZs (June/August 2014)**
JNCC and Natural England provided advice on the possible Tranche Two MCZs, incorporating all available data to support Defra's decisions on those sites to take through 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

Tranche Two Consultation (January - March 2015)
Defra consulted on 27 rMCZs that they were minded to designate in 2015

Data decision tree (July 2015)
JNCC developed a decision tree to determine the scope of post-consultation advice to reflect new data.

***JNCC Post Consultation Advice on Tranche Two pMCZs (July/September 2015)**
JNCC and Natural England provide advice on Tranche Two pMCZs to Defra, incorporating all available data, in order to support the decision making process for Tranche Two designations.

Document links

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 A. Strategic protocol – the principles by which advice will be formulated B. Quality control, assurance and peer review C. Document style and format D. Audit trail – version control and record keeping E. Assessing the scientific certainty of sites and features F. Assessment of the scientific certainty of conservation objectives G. Assessment of the risk to features (not published at present) H. Assessing the contribution of existing sites to the network I. Assessing certainty in the appropriate of conservation objectives	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

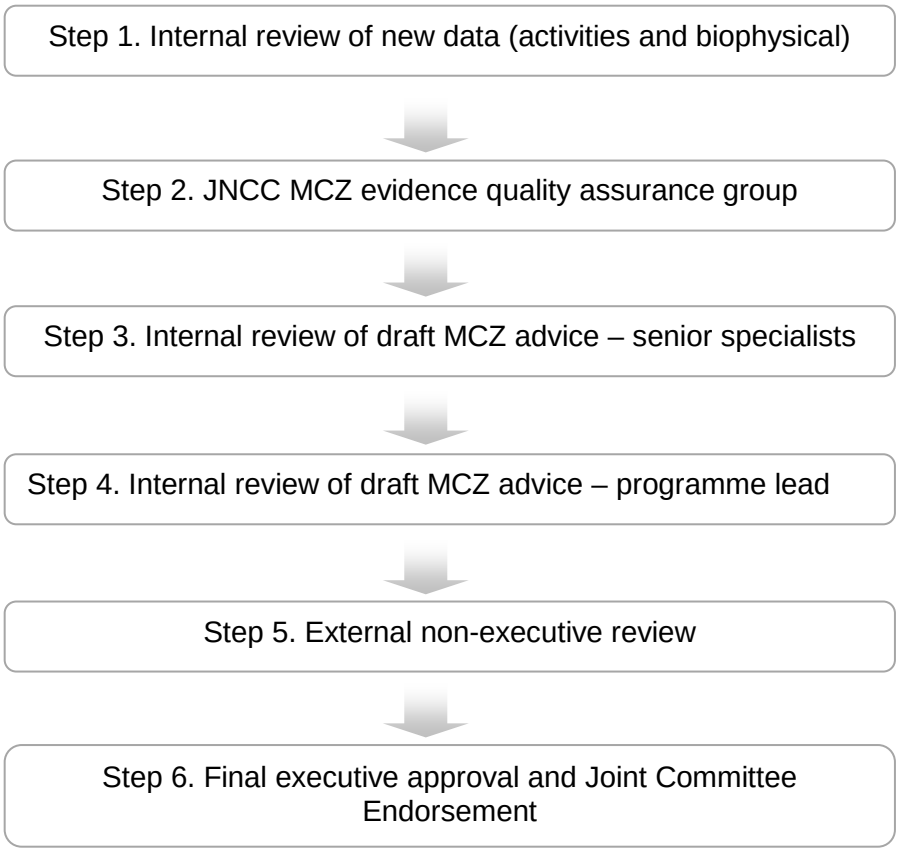
		Guidance]
2012	JNCC and Natural England Advice on the certainty in conservation objectives for features in pMCZs.	http://jncc.defra.gov.uk/page-6229 [Advice on the certainty in conservation objectives for features in recommended Marine Conservation Zones]
2013	JNCC and Natural England Supplementary advice 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 [Process to enable JNCC and NE to provide advice as to whether a feature or site has enough scientific evidence to support the designation of an MCZ]
2014	Clarification of the definition of Mud habitats in deep water, and Sea-pen and burrowing megafauna communities	http://jncc.defra.gov.uk/pdf/Advice_Document_MudHabitats_FOCIdefinitions_v1.0.pdf [JNCC clarification on habitat definitions of two habitat Features of Conservation Importance: Mud habitats in deep water, and Sea-pen and burrowing megafauna communities]
2014	JNCC pre- consultation advice on Tranche Two pMCZs	http://jncc.defra.gov.uk/page-6658 [Advice on offshore Marine Conservation Zones considered for designation in 2015]

Annex 2: Statement on JNCC's Quality Assurance procedures undertaken for the 2015 post-consultation MCZ advice

This Annex provides a summary of the Quality Assurance (QA) processes applied to JNCC's 2015 post-consultation advice to ensure its scientific advice is robust and follows both JNCC's internal Evidence QA policy and the Government Chief Scientific Adviser's guidelines for preparing scientific advice[49].

Figure 26 outlines the steps in the process adopted by JNCC and the subsequent text provides 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 to avoid replicating systematic issues through the advice.

Figure 26: **The QA process for JNCC's 2015 post-consultation MCZ advice**



[49] Guidelines for preparing scientific advice. Available at: http://www.bis.gov.uk/go-science/science-in-government/strategy-andguidance

Step 1. Internal review of new data (activities and biophysical)

Any new data submitted to the public consultation on Tranche Two MCZs was initially considered by Defra, and data relevant to offshore MCZs was shared with JNCC. Data were reviewed internally by JNCC, and shared with the JNCC MCZ Evidence QA group to determine the suitability for its use. Key decisions and conclusions were recorded within the minutes of the Group meetings. Anecdotal evidence received through the public consultation were considered, and rejected if no data were provided to support their views or where more robust data exist that conflict with these views. See MCZ Technical Protocol E[27] (and supplementary guidance[28]) for more information on how types of data are considered and the weight assigned to them.

Any new data supplied as part of JNCC's data collection program 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[50] compliant, are required of data collated as part of the MB0120[18] program, 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 presented 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, any resulting limitations to the data were logged and incorporated into our advice, and further considered at subsequent steps in the QA process.

Whilst all data available for offshore MCZs are considered, in relation to decisions regarding aspects of the site, the quality status of the data will influence the degree to which it is ultimately considered.

Step 2. JNCC MCZ Evidence Quality Assurance Group

JNCC established a formal group of specialists chaired by a Programme Leader outside the Marine Directorate (Terms of Reference is provided in Annex 5 of JNCC's 2014 advice[8]) to review the biophysical data available for each feature and conclude on the appropriateness of its use. 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.

[50] Information on INSPIRE. Available at: http://data.gov.uk/location/inspire

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[51] is applied and agreed through the members of the Group.

Step 3. Internal review of draft MCZ advice – senior specialists

The draft advice was prepared by the JNCC MCZ group and then 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 4. Internal review of draft MCZ advice – programme lead

The full draft advice, incorporating comments and changes made by senior staff, was reviewed by the JNCC 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 5: External non-executive review

The advice was then shared with the non-executive, independent Joint Committee MPA Sub Group for their review 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 an opportunity to comment on the final draft advice, with their attention drawn to any matters raised on the evidence base for the advice.

Step 6: Executive approval and Joint Committee endorsement

All comments received from Step 5 were logged and the actions recorded to provide a full audit of changes. The final advice was checked 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.

[51] 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

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 when content, endorsed the advice as of sufficient quality to be sent to Defra.

Annex 3: List of dedicated offshore recommended MCZ surveys undertaken through MB0120

Annex 3 provides information on the survey dates and offshore sites visited through MB0120[18] since the MCZ site verification data gathering exercise began in 2012. Site reports are either published for each site/survey or are in the process of being published. These can be found at the MB0120 page[18].

Survey Code	Date of Survey	JNCC-led offshore sites visited
CEND 3/12a	February 2012	• East of Celtic Deep rMCZ • East of Haig Fras MCZ • North of Celtic Deep rMCZ • North St Georges Channel rMCZ • South of Celtic Deep rMCZ
CEND 3/12b	February 2012	• East of Celtic Deep rMCZ • Offshore Brighton pMCZ • South-East of Falmouth rMCZ • Western Channel pMCZ • Wight-Barfleur Extension rMCZ
CEND 4/12	March 2012	• Compass Rose rMCZ • Farnes East pMCZ • North East of Farnes Deep MCZ
CEND 8/12a	April 2012	• Fulmar pMCZ • Markham's Triangle rMCZ
CEND 8/12b	April 2012	• Holderness Offshore rMCZ • Swallow Sand MCZ
CEND 8/12c	April 2012	• Offshore Brighton pMCZ • Offshore Overfalls pMCZ
CEND 10/12	July 2012	• Greater Haig Fras pMCZ • North-West of Jones Bank pMCZ
CEND 5/13	April 2013	• East of Haig Fras MCZ • Mid St Georges Channel rMCZ • North St Georges Channel rMCZ
CEND 6/13	May 2013	• South of the Isles of Scilly rMCZ • South-West Deeps (West) MCZ
CEND 01/14	January 2014	• Inner Bank rMCZ
CEND 05/14	March 2014	• Farnes East pMCZ • Swallow Sand MCZ

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 only in relation to the features that have been subject to new advice in this present report, and only where new or revised data have been used since our 2014 advice[8]. The confidence assessment tables detail the new assessments, incorporating any new evidence available. For further details on the features not subject to new advice in this present report, please refer to Annex 4 in the 2014 advice[8].

Table 55: 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	Data Source	Data Type	New data for 2015	Collection Method if point data	Number of points which verify the ENG feature	Number of points recording only the ENG 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
High energy circalittoral rock	FS 07_A4.1	BSH	New	Defra R & D data Collection Programme for recommended Marine Conservation Zones (rMCZ) – MB0120 site verification survey 2013 (Survey ID: CEND_5_13a)	Video tows	Yes	N/A	6	N/A	N/A	Sections of video footage which indicate the presence of an area of High energy circalittoral rock >25 m^2. Tows were collected along transects positioned specifically to collect more information about the rock features.	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
High energy circalittoral rock	FS 07_A4.1	BSH	New	Defra R & D data Collection Programme for recommended Marine Conservation Zones (rMCZ) – MB0120 site verification survey 2013 (Survey ID: CEND_5_13a)	Habitat map from survey	Yes	N/A	0	All polygons defined of rock	N/A	The previous habitat map from survey identified polygons of moderate energy circalittoral rock. New ground truth data identify both high and moderate energy circalittoral rock in the site. It is no longer possible to distinguish between the two types of rock in the habitat map and therefore the new habitat map has rock polygons classed as Circalittoral rock	No	No	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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 56: 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**
High energy circalittoral rock	FS 07_A4.1	6	N/A	N/A	N/A	Yes	Yes	**High**	Presence of the feature is supported by multiple (>5) one minute sections of video displaying continuous occurrence of high energy circalittoral rock.	**Moderate**	A full-coverage habitat map from survey shows patches of the parent circalittoral rock habitat throughout the site. Ground-truth records for the feature are restricted to two transects in the east of the site, resulting in a moderate confidence score because ground-truth data have not been gathered over the whole of the parent habitat.

Table 57: Farnes East pMCZ data table

Farnes East pMCZ – Data														
ENG Feature	**Site/Feature Code (Unique ID)**	**ENG Feature Type**	**New Feature/ Feature removed**	**Data Source**	**Data Type**	**New data for 2015 assessments?**	**Collection Method if point data**	**Number of points which verify the ENG feature**	**Number of points recording only the ENG 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**
Moderate energy circalittoral rock	NG 14_A4.2	BSH	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2014 (Survey ID: CEND0412 & CEND0514)	Video Tows	Yes	Drop-camera	12	N/A	N/A	Sections of video footage which indicate the presence of an area of High energy circalittoral rock >25 m^2.	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Moderate energy circalittoral rock	NG 14_A4.2	BSH	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2014 (Survey ID: CEND0412 & CEND0514)	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	A habitat map created using acoustic data from several sources and interpreted ground -truth samples.	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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

Farnes East pMCZ – Data

ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	New Feature/ Feature removed	Data Source	Data Type	New data for 2015 assessments?	Collection Method if point data	Number of points which verify the ENG feature	Number of points recording only the ENG 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
Subtidal coarse sediment	NG 14_A5.1	BSH	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2014 (Survey ID: CEND0412 & CEND0514)	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	A habitat map created using acoustic data from several sources and interpreted ground-truth samples.	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Subtidal sand	NG 14_A5.2	BSH	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2014 (Survey ID: CEND0412 & CEND0514)	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	A habitat map created using acoustic data from several sources and interpreted ground-truth samples.	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Subtidal mud	NG 14_A5.3	BSH	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2014 (Survey ID: CEND0412 & CEND0514)	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	A habitat map created using acoustic data from several sources and interpreted ground-truth samples.	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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

Farnes East pMCZ – Data

ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	New Feature/ Feature removed	Data Source	Data Type	New data for 2015 assessments?	Collection Method if point data	Number of points which verify the ENG feature	Number of points recording only the ENG 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
Subtidal mixed sediments	NG 14_A5.4	BSH	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2014 (Survey ID: CEND0514)	PSA points	Yes	Grabs	3	N/A	N/A	Presence of habitat identified during the MB0102 verification survey in 2014 using grab samples	Yes	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Subtidal mixed sediments	NG 14_A5.4	BSH	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2014 (Survey ID: CEND0412 & CEND0514)	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	A habitat map created using acoustic data from several sources and interpreted ground-truth samples.	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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	NG 14_HOCI_13	HOCI	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2014 (Survey ID: CEND0412 & CEND0514)	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	A habitat map created using acoustic data from several sources and interpreted ground-truth samples.	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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 58: Farnes East pMCZ confidence assessment

Farnes East pMCZ – 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**
Moderate energy circalittoral rock	NG 14_A4.2	12	N/A	N/A	N/A	Yes	Yes	**High**	The presence of the feature is supported by a habitat map from survey, along with 12 sections of video on 12 separate tows displaying a continuous occurrence of rock.	**Moderate**	Habitat map from survey covers 100% of the site with ground-truth samples well-distributed across the site. However, due to the presence of polygons mapped as Moderate energy circalittoral rock without any supporting ground-truth points, Moderate confidence has been assigned.
Peat and clay exposures	NG 14_HOCI_15	0	N/A	N/A	N/A	No	N/A	**No confidence**	No survey data available to support the presence of Peat and clay exposures. Ground-truth data collected in areas anecdotally reported as Peat and clay exposures indicates the presence of other habitats.	**No confidence**	No survey data available to determine the presence and extent of the feature within the site, and conflicting data where the feature was thought to occur.

Table 59: Fulmar pMCZ data table

Fulmar pMCZ - Data															
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	New Feature/ Feature removed	Data Source	Data Type	New data for 2015 assessments?	Collection Method if point data	Number of points which verify the ENG feature	Number of points recording only the ENG 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
Subtidal sand	NG_17_A5.2	BHS	No	BGS	Habitat map (modelled)	Yes	N/A	N/A	N/A	N/A		No	Yes	Yes	Contact JNCC for more information
Subtidal mud	NG_17_A5.3	BHS	No	BGS	Habitat map (modelled)	Yes	N/A	N/A	N/A	N/A		No	Yes	Yes	Contact JNCC for more information
Subtidal mud	NG_17_A5.3	BHS	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey	Partial Habitat map from survey	Yes	N/A	N/A	N/A	N/A		No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Subtidal mixed sediments	NG_17_A5.4	BHS	No	BGS	Habitat map (modelled)	Yes	N/A	N/A	N/A	N/A		No	Yes	Yes	Contact JNCC for more information

Fulmar pMCZ - Data

ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	New Feature/ Feature removed	Data Source	Data Type	New data for 2015 assessments?	Collection Method if point data	Number of points which verify the ENG feature	Number of points recording only the ENG 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	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey	Partial Habitat map from survey	Yes	N/A	N/A	N/A	N/A		No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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	NG_17_HOCI_13	HOCI	No	BGS	Habitat map (modelled)	Yes	N/A	N/A	N/A	N/A	Modelled habitat map created by BGS using data collated from MB0120 Site verification survey	No	Yes	Yes	Contact JNCC for more information

Table 60: Fulmar pMCZ confidence assessment

Fulmar pMCZ – 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**
Subtidal sand	NG_17_A5.2	75	N/A	N/A	N/A	Yes	MCZ evidence QA group	**Moderate**	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 in extent due to low level of agreement between ground –truth data and modelled maps.
Subtidal mud	NG_17_A5.3	49	N/A	N/A	N/A	Yes	MCZ evidence QA group	**High**	There are 49 ground-truth data points (from two surveys) which demonstrate the presence of Subtidal mud in the site.	**Moderate**	The feature is modelled to occur across most of the site, with MB0120[18] data supporting its widespread occurrence. JNCC analysis also indicates the widespread occurrence of muddy biotopes across the site. A Moderate confidence in the extent of Subtidal mud is advised due to conflicting data indicating the presence of Subtidal sand within the modelled extent of the feature.
Subtidal mixed sediments	NG_17_A5.4	6	N/A	N/A	N/A	Yes	MCZ evidence QA group	**High**	There are six ground-truth samples which demonstrate the presence of Subtidal mixed sediments in the site.	**Moderate**	Habitat is mapped within the MB0120[18] habitat map and supported by four ground-truth points. Moderate confidence is assigned as there are areas of the feature not supported by ground-truth data and as the feature likely extends beyond the areas mapped by MB0120[18].
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-truth data points which demonstrate the presence of Mud habitats in deep water in the site.	**Moderate**	The feature is also modelled to occur across most of the site, with MB0120[18] data supporting its widespread occurrence. JNCC analysis also indicates the widespread occurrence of muddy biotopes across the site. A Moderate confidence in the extent of Mud habitats in deep water is advised due to conflicting data indicating the presence of Subtidal sand within the mapped extent of the feature.
Ocean quahog (*Arctica islandica*)	NG_17_SOCI_3	65	53	3	9	No	N/A	**High**	There are nine records found within the last six years which demonstrate the presence of the species in the site.	**High**	Nine records within the last six years identify the species in multiple locations, which demonstrate the distribution of the species in the site.

Table 61: Greater Haig Fras pMCZ data table

Greater Haig Fras pMCZ – Data														
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	New Feature/ Feature removed	Data Source	Data Type	New data for 2015 assessments?	Collection Method if point data	Number of points which verify the ENG feature	Number of points recording only the ENG 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
Subtidal coarse sediment	FS05_A5.1	BSH	No	British Geological Survey (BGS) Sediment points	PSA Points	No	Grabs	20	N/A	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
Subtidal coarse sediment	FS05_A5.1	BSH	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2014 (Survey ID: CEND1012 including Haig Fras cSAC/SCI infill survey)	PSA Points	Yes	Grabs	13	N/A	N/A	PSA samples collected during CEND1012, analysed to CEFAS data standards	Yes	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Subtidal sand	FS_05_A5.2	BSH	No	British Geological Survey (BGS) Sediment points	PSA Points	No	Grabs	23	N/A	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

Greater Haig Fras pMCZ – Data

ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	New Feature/ Feature removed	Data Source	Data Type	New data for 2015 assessments?	Collection Method if point data	Number of points which verify the ENG feature	Number of points recording only the ENG 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
Subtidal sand	FS_05_A5.2	BSH	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2014 (Survey ID: CEND1012 including Haig Fras cSAC/SCI infill survey)	PSA Points	Yes	Grabs	12	N/A	N/A	PSA samples collected during CEND1012, analysed to CEFAS data standards	Yes	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Subtidal sand	FS_05_A5.2	BSH	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	Habitat map created using acoustic data from four surveys including CEND0511 and CEND1012, and ground-truth data from 3 surveys.	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Subtidal mud	FS_05_A5.3	BSH	No	Marine Institute Nephrops survey data	Imagery	Yes	Video	5	N/A	N/A	Burrow densities of >0.2 m^{-2} were considered evidence of the presence of the feature.	No	Yes	Yes	http://oar.marine.ie/handle/10793/887
Subtidal mud	FS_05_A5.3	BSH	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2014 (Survey ID: CEND1012 including Haig Fras cSAC/SCI infill survey)	PSA Points	Yes	Grabs	33	N/A	N/A	PSA samples collected during CEND1012, analysed to CEFAS data standards	Yes	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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 pMCZ – Data

ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	New Feature/ Feature removed	Data Source	Data Type	New data for 2015 assessments?	Collection Method if point data	Number of points which verify the ENG feature	Number of points recording only the ENG 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
Subtidal mud	FS_05_A5.3	BSH	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	Habitat map created using acoustic data from four surveys including CEND0511 and CEND1012, and ground-truth data from 3 surveys.	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Subtidal mixed sediments	FS_05_A5.4	BSH	No	British Geological Survey (BGS) Sediment points	PSA Points	No	Grabs	12	N/A	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
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 in 2014 (Survey ID: CEND1012 including Haig Fras cSAC/SCI infill survey)	PSA Points	Yes	Grabs	21	N/A	N/A	PSA samples collected during CEND1012, analysed to CEFAS data standards	Yes	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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	HOCI	No	Marine Institute Nephrops survey data	Imagery	Yes	Video	5	N/A	N/A	Burrow densities of >0.2 m^{-2} were considered evidence of the presence of the feature.	No	Yes	Yes	http://oar.marine.ie/handle/10793/887

Greater Haig Fras pMCZ – Data

ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	New Feature/ Feature removed	Data Source	Data Type	New data for 2015 assessments?	Collection Method if point data	Number of points which verify the ENG feature	Number of points recording only the ENG 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	HOCI		Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2014 (Survey ID: CEND1012 including Haig Fras cSAC/SCI infill survey)	PSA Points	Yes	Grabs	33	N/A	N/A	PSA samples collected during CEND1012, analysed to CEFAS data standards	Yes	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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	HOCI		Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2014 (Survey ID: CEND1012 including Haig Fras cSAC/SCI infill survey)	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	Habitat map created using acoustic data from four surveys including CEND0511 and CEND1012, and ground-truth data from 3 surveys.	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Sea-pen and burrowing megafauna	FS_05_HOCI_18	HOCI	New	Marine Institute Nephrops survey data	Imagery	Yes		4	N/A	N/A	Burrow densities of >0.2 m^{-2} were considered evidence of the presence of the feature.	No	Yes	Yes	http://oar.marine.ie/handle/10793/887
Sea-pen and burrowing megafauna communities	FS_05_HOCI_18	HOCI	New	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2014 (Survey ID: CEND1012)	Imagery	Yes	Video tows	7	N/A	N/A	Videos indicating mud habitats that were clearly burrowed	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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 pMCZ – Data

ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	New Feature/ Feature removed	Data Source	Data Type	New data for 2015 assessments?	Collection Method if point data	Number of points which verify the ENG feature	Number of points recording only the ENG 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_05_HOCI_18	HOCI	New	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	The mapped extent of the feature was created using the mapped habitat of subtidal mud and the 113 m depth contour. With the HOCI being in mud deeper than 113 m.	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Subtidal coarse sediment/ Subtidal mixed sediments mosaic	FS_05_A5.1/A5.4	BSH Habitat	New	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	Habitat map created using acoustic data from four surveys including CEND0511 and CEND1012, and ground-truth data from 3 surveys.	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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 62: Greater Haig Fras pMCZ confidence assessment

Greater Haig Fras pMCZ – 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
Subtidal coarse sediment	FS05_A5.1	33	N/A	N/A	N/A	No	N/A	**High**	Interpreted ground-truth data (from 33 sediment grab samples) demonstrates the presence of Subtidal coarse sediment in the site.	**Low**	The presence the feature is supported by multiple ground-truth samples and a habitat map from survey. However, the spatial extent of the Subtidal coarse sediment could not be separated from Subtidal mixed sediments and they are presented as a mosaic in the habitat map. As there are gaps in the mapped extent of the mosaic, there is uncertainty in the precise location of Subtidal coarse sediment in the site.
Subtidal sand	FS_05_A5.2	35	N/A	N/A	N/A	Yes	Yes	**High**	Interpreted ground-truth data (from 35 sediment grab samples) demonstrate the presence of Subtidal sand in the site.	**Moderate**	There are a high number of data points across the site that are supported by a partial coverage habitat map from MB0120[18]. However, there is inconsistency between some BGS points and the habitat map and gaps in the mapped extent, leading to moderate confidence in feature extent.
Subtidal mixed sediments	FS_05_A5.4	21	N/A	N/A	N/A	No	N/A	**High**	Interpreted ground-truth data (from 21 sediment grab samples) demonstrate the presence of Subtidal mixed sediments in the site.	**Low**	The presence of the feature is supported by multiple ground-truth samples and a habitat map from survey. However, the spatial extent of the Subtidal mixed sediments could not be separated from Subtidal coarse sediments and they are presented as a mosaic in the habitat map. As there are gaps in the mapped extent of the mosaic, there is uncertainty in the location of Subtidal mixed sediments in the site.
Sea-pen and burrowing megafauna communities	FS_05_HOCI_18	12	N/A	N/A	N/A	Yes	Yes	**High**	12 ground-truth points from video tows and the *Nephrops* stock assessment survey, which recorded burrows in Subtidal mud. These data are supported with a habitat map from MB0120.	**Moderate**	The area is mapped within the recent MB0120[18] product derived from survey. However, the feature was delineated using an isobath, because all the sample records suggest the habitat occurs in deeper areas of the subtidal mud. However, this approach gives rise to mapped areas of the feature without any ground-truth samples to validate their presence. Therefore, the apparent extent is mapped but note there are some uncertainties around its complete actual in the site.
Fan mussel (*Atrina fragilis*)	FS_05_SOCI_05	0	0	0	0	No	N/A	**No confidence**	Shells were identified in three video tows; however their appearance indicated they were not living specimens and simply dead shells. Therefore, no evidence to demonstrate the presence of live Fan mussels within the site.	**No confidence**	No survey data to determine the presence or distribution of the species within the site.

Greater Haig Fras pMCZ – 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**
Subtidal coarse sediment/ Subtidal mixed sediments mosaic	FS_05_A5.1/A5.4	54	N/A	N/A	N/A	No	N/A	**High**	Presence of the feature is supported by a recent habitat map developed using acoustic and ground-truth data.	**Moderate**	A habitat map from survey covers 50% of the site. The map is complete in the south of the site but there are gaps in mapped area in the north. Therefore there are areas of the mosaic habitat that are not clearly delineated, with the further potential that areas could have been missed. Thus the full extent of the mosaic habitat is uncertain in parts.

Table 63: North-West of Jones Bank pMCZ data table

North West of Jones Bank pMCZ – Data														
ENG Feature	**Site/Feature Code (Unique ID)**	**ENG Feature Type**	**New Feature/ Feature removed**	**Data Source**	**Data Type**	**New data for 2015 assessments?**	**Collection Method if point data**	**Number of points which verify the ENG feature**	**Number of points recording only the ENG 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**
Subtidal mud	FS_04_A5.3	BSH	No	Marine Institute *Nephrops* survey data	Imagery	Yes	Video	3	N/A	N/A	Burrow densities of >0.2 m^{-2} were considered evidence of the presence of the feature.	No	Yes	Yes	http://oar.marine.ie/handle/10793/887
Mud habitats in deep water	FS_04_HOCI_13	HOCI	No	Marine Institute *Nephrops* survey data	Imagery	Yes	Video	3	N/A	N/A	Burrow densities of >0.2 m^{-2} were considered evidence of the presence of the feature.	No	Yes	Yes	http://oar.marine.ie/handle/10793/887

North West of Jones Bank pMCZ – Data														
ENG Feature	**Site/Feature Code (Unique ID)**	**ENG Feature Type**	**New Feature/ Feature removed**	**Data Source**	**Data Type**	**New data for 2015 assessments?**	**Collection Method if point data**	**Number of points which verify the ENG feature**	**Number of points recording only the ENG 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	HOCI	No	Marine Institute *Nephrops* survey data	Imagery	Yes	Video	3	N/A	N/A	Burrow densities of >0.2 m^{-2} were considered evidence of the presence of the feature.	No	Yes	Yes	http://oar.marine.ie/handle/10793/887

Table 64: North-West of Jones Bank pMCZ confidence assessment

North West of Jones Bank pMCZ – 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**
Subtidal mud	FS 04_A5.3	163	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-truth sample data demonstrates the extent of Subtidal mud in the site.
Mud habitats in deep water	FS 04_HOCI_13	163	N/A	N/A	N/A	No	N/A	**High**	There are 112 ground-truth 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	115	N/A	N/A	N/A	No	N/A	**High**	There are112 ground-truth 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 65: Offshore Brighton pMCZ data table

Offshore Brighton pMCZ – Data														
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	New Feature/ Feature removed	Data Source	Data Type	New data for 2015 assessments?	Collection Method if point data	Number of points which verify the ENG feature	Number of points recording only the ENG 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
High energy circalittoral rock	BS_14_A4.1	BSH	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	10% acoustic data gathered by MB0120 and 90% Astrium data	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
High energy circalittoral rock	BS_14_A4.1	BSH	No	CEFAS opportunistic data collection	Imagery	Yes	Video Tows	1	N/A	N/A		No	Yes	Yes	Data acquired through the Cefas partnership.
Subtidal coarse sediment	BS_14_A5.1	BSH	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	10% acoustic data gathered by MB0120 and 90% Astrium data	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Subtidal mixed sediments	BS_14_A5.4	BSH	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	10% acoustic data gathered by MB0120 and 90% Astrium data	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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 66: Offshore Brighton pMCZ confidence assessment

Offshore Brighton pMCZ – 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
High energy circalittoral rock	BS_14_A4.1	4	N/A	N/A	N/A	Yes	MCZ evidence QA group	**High**	There are four ground-truth data points and a habitat map which demonstrate the presence of High energy circalittoral rock in the site.	**Moderate**	Ground-truth data points are clustered in the north and west of the site. Three of these points coincide with the mapped extent of the feature in the habitat map. Expert judgement has been applied to assign moderate confidence in feature extent due to residual uncertainties in the data
Moderate energy circalittoral rock	BS_14_A4.2	0	N/A	N/A	N/A	No	N/A	**No confidence**	There is no confidence in the presence of this feature. Six records of the parent feature used in JNCC's 2014 advice[8] have now been quality assured and do not support the presence of the feature within the site.	**No confidence**	There is no confidence in this feature as there are no data to support either the presence or extent of this feature within the site.
Subtidal coarse sediment	BS_14_A5.1	>200	N/A	N/A	N/A	No	N/A	**High**	There are 35 ground-truth data points which demonstrate the presence of Subtidal coarse sediment in the site.	**High**	A habitat map and the distribution of ground truth data demonstrate the extent of Subtidal coarse sediment in the site.
Subtidal mixed sediments	BS_14_A5.4	>250	N/A	N/A	N/A	No	N/A	**High**	There are 34 ground-truth data points demonstrating the presence of Subtidal mixed sediments in the site.	**High**	A habitat map and the distribution of ground truth data demonstrate the extent of Subtidal mixed sediments in the site.

Table 67: Offshore Overfalls pMCZ data table

Offshore Overfalls pMCZ – Data														
ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	New Feature/ Feature removed	Data Source	Data Type	New data for 2015 assessments?	Collection Method if point data	Number of points which verify the ENG feature	Number of points recording only the ENG 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
Moderate energy circalittoral rock	BS_17_A4.2	BSH	New	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey	Imagery	Yes	Video Tows	2	N/A	N/A	Two ground-truth data points of one minute of continuous video of rock	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Moderate energy circalittoral rock	BS_17_A4.2	BSH	New	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	10% acoustic data gathered by MB0120 and 90% Astrium data	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Subtidal sand	BS_17_A5.2	BSH	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	10% acoustic data gathered by MB0120 and 90% Astrium data	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Subtidal mixed sediments	BS_17_A5.4	BSH	No	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	10% acoustic data gathered by MB0120 and 90% Astrium data	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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 pMCZ – Data

ENG Feature	Site/Feature Code (Unique ID)	ENG Feature Type	New Feature/ Feature removed	Data Source	Data Type	New data for 2015 assessments?	Collection Method if point data	Number of points which verify the ENG feature	Number of points recording only the ENG 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
Subtidal chalk	BS_17_HOCI_20	HOCI	New	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey	Imagery	Yes	Video Tows	1	N/A	N/A	A single ground-truth record of one minute of continuous video of chalk	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Subtidal chalk	BS_17_HOCI_20	HOCI	New	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey	Habitat map from survey	Yes	N/A	N/A	N/A	N/A	10% acoustic data gathered by MB0120 and 90% Astrium data	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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 68: Offshore Overfalls pMCZ confidence assessment

Offshore Overfalls pMCZ – 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**
Moderate energy circalittoral rock	BS_17_A4.2	2	N/A	N/A	N/A	Yes	MCZ evidence QA group	**High**	Presence of the feature is supported by two one minute sections of video displaying continuous occurrence of Moderate energy circalittoral rock.	**Low**	There is one ground-truth data point coinciding with the mapped extent of Moderate energy circalittoral rock within the site. Expert judgement has been applied to assign Low confidence in the extent of the feature.
Subtidal sand	BS_17_A5.2	3	N/A	N/A	N/A	No	N/A	**Moderate**	Three ground-truth points confirm the presence of Subtidal sand in the site.	**Low**	Multiple samples in combination with a habitat map demonstrate the extent of Subtidal sand in the site. However, very few of these points are located within the mapped extent, and some mapped areas have no corresponding ground-truth samples, thus expert judgement has been used to assign a Low confidence score.
Subtidal mixed sediments	BS_17_A5.4	20	N/A	N/A	N/A	No	N/A	**High**	There are 20 ground-truth points that confirm the presence of Subtidal mixed sediments in the site.	**Moderate**	Multiple samples occur within the mapped extent of the feature within the site, which is sufficient to assign Moderate confidence in the feature extent, noting there is some residual uncertainty in the feature's full extent.
Subtidal chalk	BS_17_HOCI_20	1	N/A	N/A	N/A	Yes	MCZ evidence QA group	**Moderate**	Presence of the feature is supported by a single one minute section of video displaying continuous occurrence of Subtidal chalk.	**Low**	A habitat map displays a significant area of Subtidal chalk within the site, however there are limited ground truth data to support this area. Therefore expert judgement has been used to assign a Low confidence in the extent of Subtidal chalk within Offshore Overfalls pMCZ.

Table 69: 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 2015 assessments?	Collection Method if point data	Number of points which verify the ENG feature	Number of points recording only the ENG 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
Subtidal mud	FS02_A5.3	BSH	New	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2013 (Survey ID: CEND0613)	PSA points	Yes	Grab	9	N/A	N/A	PSA samples collected during CEND0613, analysed to CEFAS data standards	Yes	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Subtidal mud	FS02_A5.3	BSH	New	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2013 (Survey ID: CEND0613)	Habitat map from survey	Yes	Acoustic and ground-truthing	N/A	N/A	N/A	Habitat map of 51% of the site created from acoustic data and ground-truth samples	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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	FS02_HOCI_13	HOCI	New	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2013 (Survey ID: CEND0613)	PSA Points	Yes	Grab	9	N/A	N/A	PSA samples collected during CEND0613, analysed to CEFAS data standards	Yes	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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	FS02_HOCI_13	HOCI	New	Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2013 (Survey ID: CEND0613)	Habitat map from survey	Yes	Acoustic and ground-truthing	N/A	N/A	N/A	Habitat map of 51% of the site created from acoustic data and ground-truth samples	No	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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 2015 assessments?	Collection Method if point data	Number of points which verify the ENG feature	Number of points recording only the ENG 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*)	FS02	SOCI		Defra R&D Data Collection Programme for recommended Marine Conservation Zones (rMCZ) - MB0120 Site verification survey in 2013 (Survey ID: CEND0613)	Image	Yes	Video tow	1	N/A	2013		N/A	Yes	Yes	Data acquired through the Cefas partnership. Report not currently published. Contact JNCC or Cefas directly 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
Fan mussel (*Atrina fragilis*)	FS02	SOCI				Yes	Grab	3	N/A	2013	Live individuals collected from grab samples and identified from the specimens. All three were juveniles	N/A	Yes	Yes	
Fan mussel (*Atrina fragilis*)	FS02	SOCI			Image	Yes	Still	1	N/A	2013		N/A	Yes	Yes	

Table 70: 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**
Subtidal mud	FS02_A5.3	9	N/A	N/A	N/A	Yes	Yes	**High**	The feature is identified by a habitat map from survey and is supported by nine ground-truth samples.	**High**	A partial habitat map from survey is available which covers approximately 50% of the site. The area of mud is well delineated in the mapped areas and although the MB0120 habitat map only covers part of the site, the data gave JNCC confidence that there were no significant areas of mud found outside of the mapped area in MB0120[18].
Mud habitats in deep water	FS02_HOCI_13	9	N/A	N/A	N/A	Yes	Yes	**High**	The feature is identified by a habitat map from survey and is supported by nine ground-truth samples	**High**	A habitat map from survey is available which includes transects across the site. The area of mud habitat is well delineated in the mapped transect lines and it is unlikely that there will be any large areas of the feature in unmapped areas.
Fan mussel (*Atrina fragilis*)	FS02	5	0	0	5	Yes	Yes	**High**	Five records of the species have been recorded in the site within the last six years.	**Moderate**	The records are from surveys within the last six years. However, they are dispersed across the site, and due to the features cryptic nature and dispersed distribution it is difficult to assess extent.

Annex 5: Assessment of feature condition

The tables in Annex 5 detail the assessment of feature condition for the 10 offshore sites being considered in Tranche Two of the MCZ designation process. The assessments take account of any new data, including survey data that have 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.

Table 71: East of Haig Fras MCZ Vulnerability Assessment

Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
FS 07	High energy circalittoral rock	Removal of non-target species (lethal)	Fishing - benthic trawling	M	Moderate	Patches of these features could occur throughout the site. Using UK and EU aggregated VMS data, exposure to demersal trawling ranges from 99 hours to a maximum of 570 hours between 2009 and 2013 inclusive. Highest levels occurred in the south-east corner. < 225 hours of activity from beam trawling occurred anywhere within the site.	Moderate
FS 07	High energy circalittoral rock	Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm	Fishing - benthic trawling	M-H	Low		Moderate
FS 07	High energy circalittoral rock	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	M-H	Moderate		High
FS 07	High energy circalittoral rock	Physical change (to another seabed type)	Fishing - hydraulic dredging	M-H	Low	EU and UK VMS 2009 - 2013 suggests that the feature might be exposed to >100 hours of this activity over five years in the north-west of the site.	Moderate
FS 07	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 features are commonly exposed to over 150hrs and to a maximum of ~420 hrs of beam and demersal activity between 2009 and 2013, with the highest level of activity focussed in the south-west corner of the site.	Moderate
FS 07	Subtidal mud	Removal of target species (lethal)	Fishing - benthic trawling	NS-M	Moderate		Moderate
FS 07	Subtidal mud	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	L-M	Moderate		Moderate

Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
FS 07	Mud habitats in deep water	Removal of non-target species (lethal)	Fishing - benthic trawling	M	Moderate		Moderate
FS 07	Mud habitats in deep water	Removal of target species (lethal)	Fishing - benthic trawling	L	Moderate		Moderate

Table 72: Farnes East pMCZ Vulnerability Assessment

Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
NG 14	Subtidal mud	Removal of non-target species (lethal)	Fishing - benthic trawling	M	High	Aggregated 2009-2013 VMS data indicates that demersal trawling activity occurs throughout the site. The data suggests the feature could be exposed to > 1200 hours in the south of the site	High
NG 14	Subtidal mud	Removal of target species (lethal)	Fishing - benthic trawling	NS-M	High		High
NG 14	Subtidal mud	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	L-M	High		High
NG 14	Sea-pen and burrowing megafauna communities	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	M	High		High
NG 14	Sea-pen and burrowing megafauna communities	Removal of target species (lethal)	Fishing - benthic trawling	M	High		High
NG 14	Sea-pen and burrowing megafauna communities	Removal of non-target species (lethal)	Fishing - benthic trawling	M	High		High
NG 14	Ocean quahog (*Arctica islandica*)	Removal of non-target species (lethal)	Fishing - benthic trawling	H	High	UK 2009-2013 VMS aggregated data indicates this activity is occurring over the feature, with total hours typically 10-100hrs over 5 years which rises to a maximum of 800hrs in the south-east corner of the site. EU fisheries demersal fisheries are present within the area, as outlined by aggregated VMS data 2009-2013, although the levels are so low it would it could equally be attributable to non-fishing activities e.g. paying out & hauling nets, waiting out bad weather.	High
NG 14	Ocean quahog (*Arctica islandica*)	Shallow abrasion/penetration: damage to seabed surface and	Fishing - benthic trawling	H	High		High

Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
		penetration ≤25mm					
NG 14	Mud habitats in deep water	Removal of non-target species (lethal)	Fishing - benthic trawling	M	High	Aggregated 2009-2013 VMS data indicates that demersal trawling activity occurs throughout the site. The data suggests the feature could be exposed to > 1200 hours in the south of the site.	High
NG 14	Mud habitats in deep water	Removal of target species (lethal)	Fishing - benthic trawling	L	High		Moderate

Table 73: Fulmar pMCZ Vulnerability Assessment

Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
NG 17	Subtidal coarse sediment	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	NS-H	Low	Fishing effort >15m: EU beam and demersal 2006 -2009 overlaps with the east of the site max 87hrs. EU VMS pings 2009-2013 identifies that bottom contacting gear is continuing at a low level within this area. It also shows that there is very limited activity along the western edge of the site. UK 2006-2009 identifies minimal activity across the extent of the feature, with bottom contacting gears totalling 20-30hrs each. UK VMS data 2009-2012 identifies the presence of otter and pair trawls, in the East of the site.	Moderate

Table 74: Greater Haig Fras pMCZ Vulnerability Assessment

Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
FS 05	Subtidal coarse sediment	Removal of non-target species (lethal)	Fishing - benthic trawling	NS-M	High	Aggregated 2009-2013 VMS data indicates that demersal trawling activity occurs throughout the site. The data suggests moderate to high levels of exposure to the pressure over areas where Subtidal coarse sediments could occur, with hours being >305 in many areas and exceeding 1000 hours over the five years in the south.	High
FS 05	Subtidal coarse sediment	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	NS-H	High		High
FS 05	Subtidal sand	Removal of non-target species (lethal)	Fishing - benthic trawling	NS-M	High	VMS data indicate that at least low levels of exposure occurs throughout the site. Exposure levels vary across the extent of Subtidal sand but are >700 hours in the south and west.	High
FS 05	Subtidal sand	Surface abrasion: damage to seabed	Fishing - benthic trawling	NS-M	High		High

Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
		surface features					
FS 05	Subtidal mud	Removal of target species (lethal)	Fishing - benthic trawling	NS-M	High	Aggregated 2009-2013 VMS data indicates that demersal trawling activity occurs throughout the site. The data suggests moderate to high levels of exposure to the pressure over areas where Subtidal mud occurs, with hours being >305 in many areas and exceeding 1050 hours over the five years in the south and east of the site. Tracks of French vessels suggest that the areas of Subtidal mud are targeted by their demersal fishery.	High
FS 05	Subtidal mud	Removal of non-target species (lethal)	Fishing - benthic trawling	M	High		High
FS 05	Subtidal mud	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	L-M	High		High
FS 05	Subtidal mixed sediments	Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm	Fishing - benthic trawling	H	Low	Aggregated 2009-2013 VMS data indicates that demersal trawling activity occurs throughout the site. Activity exceeds 1000 hours over the 5 years in some areas. Despite the extent of the activity in the site, the penetration associated with trawl gear is such that there is low exposure to this pressure.	Moderate
FS 05	Subtidal mixed sediments	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	M	High	Aggregated 2009-2013 VMS data indicates that demersal trawling activity occurs throughout the site. The data suggests moderate to high levels of exposure to the pressure over areas where Subtidal mixed sediments could occur, with hours being >305 in many areas and exceeding 1000 hours over the five years in the south.	High
FS 05	Subtidal mixed sediments	Removal of non-target species (lethal)	Fishing - benthic trawling	M	High		High
FS 05	Subtidal mixed sediments	Removal of target species (lethal)	Fishing - benthic trawling	L	High		Moderate
FS 05	Mud habitats in deep water	Removal of non-target species (lethal)	Fishing - benthic trawling	M (Based on Subtidal mud)	High	Aggregated 2009-2013 VMS data indicates that demersal trawling activity occurs throughout the site. The data suggests moderate to high levels of exposure to the pressure over areas where Subtidal mud occurs, with hours being >305 in many areas and exceeding 1050 hours over the five years in the south and east of the site. Tracks of French vessels suggest that the areas of Subtidal mud are targeted by their demersal fishery.	High
FS 05	Mud habitats in deep water	Removal of target species (lethal)	Fishing - benthic trawling	NS-M (Based on Subtidal mud)	High		High
FS 05	Mud habitats in deep water	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	L-M (Based on subtidal mud)	High		High
FS 05	Sea-pen and burrowing megafauna communities	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	M	High		High

Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
FS 05	Sea-pen and burrowing megafauna communities	Removal of non-target species (lethal)	Fishing - benthic trawling	M	High		High
FS 05	Sea-pen and burrowing megafauna communities	Removal of target species (lethal)	Fishing - benthic trawling	M	High		High
FS 05	Subtidal coarse sediment / Subtidal mixed sediments mosaic	Removal of non-target species (lethal)	Fishing - benthic trawling	M	High	Aggregated 2009-2013 VMS data indicates that demersal trawling activity occurs throughout the site. The data suggests moderate to high levels of exposure to the pressure over areas were the habitat mosaic occurs, with hours being >305 in many areas and exceeding 1000 hours over the five years in the south.	High
FS 05	Subtidal coarse sediment / Subtidal mixed sediments mosaic	Removal of target species (lethal)	Fishing - benthic trawling	L	High		Moderate
FS 05	Subtidal coarse sediment / Subtidal mixed sediments mosaic	Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm	Fishing - benthic trawling	H	Low	Aggregated 2009-2013 VMS data indicates that demersal trawling activity occurs throughout the site. Activity exceeds 1000 hours over the 5 years in some areas. Despite the extent of the activity in the site, the penetration associated with trawl gear is such that this is a low exposure to this pressure.	Moderate
FS 05	Subtidal coarse sediment / Subtidal mixed sediments mosaic	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	NS-H	High	Aggregated 2009-2013 VMS data indicates that demersal trawling activity occurs throughout the site. The data suggests moderate to high levels of exposure to the pressure over areas were the habitat mosaic occurs, with hours being >305 in many areas and exceeding 1000 hours over the five years in the south.	High

Table 75: North-West of Jones Bank pMCZ Vulnerability Assessment

Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
FS 04	Subtidal coarse sediment	Removal of non-target species (lethal)	Fishing - benthic trawling	NS-M	High	EU aggregated demersal trawling activity reaches a maximum of 670 hrs per VMS grid over 5 years, across the feature.	High
FS 04	Subtidal coarse sediment	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	NS-H	High		High
FS 04	Subtidal sand	Removal of non-target species (lethal)	Fishing - benthic trawling	NS-M	High	EU aggregated demersal trawling activity reaches a maximum of 941 hrs over 5 years, across the feature.	High

Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
FS 04	Subtidal sand	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	NS-M	High	EU aggregated demersal trawling activity reaches a maximum of 941 hrs over 5 years, across the feature.	High
FS 04	Subtidal mud	Removal of non-target species (lethal)	Fishing - benthic trawling	M	High		High
FS 04	Subtidal mud	Removal of target species (lethal)	Fishing - benthic trawling	NS-M	High		High
FS 04	Subtidal mud	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	L-M	High		High
FS 04	Subtidal mixed sediments	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	M	Moderate	EU aggregated demersal trawling activity reaches a maximum of 473 hrs over 5 years, across the feature.	Moderate
FS 04	Subtidal mixed sediments	Removal of non-target species (lethal)	Fishing - benthic trawling	M	Moderate		Moderate
FS 04	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 941 hrs over 5 years, across the feature.	High
FS 04	Mud habitats in deep water	Removal of target species (lethal)	Fishing - benthic trawling	L	High		Moderate
FS 04	Sea-pen and burrowing megafauna communities	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	M	High		High
FS 04	Sea-pen and burrowing megafauna communities	Removal of target species (lethal)	Fishing - benthic trawling	M	High		High
FS 04	Sea-pen and burrowing megafauna communities	Removal of non-target species (lethal)	Fishing - benthic trawling	M	High		High

Table 76: Offshore Brighton pMCZ Vulnerability Assessment

Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
BS 14	High energy circalittoral rock	Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm	Fishing - benthic trawling	H*	Low	Fishing effort >15m: No UK benthic trawling activity over the feature from the VMS data 2009-2013. Moderate EU demersal trawling activity across the feature with a maximum of 475 hrs over 5 yrs 2009-2013.	Moderate
BS 14	High energy circalittoral rock	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	H*	Moderate		High
BS 14	High energy circalittoral rock	Removal of non-target species (lethal)	Fishing - benthic trawling	M	Moderate		Moderate
BS 14	Subtidal coarse sediment	Removal of non-target species (lethal)	Fishing - benthic trawling	NS-M	High	Fishing effort >15m: EU demersal and dredge activity 2009-2013 overlaps the feature extent. Activity is predominately demersal, with peak values in excess of 500hrs. No UK benthic trawling activity over the feature from the 2009-2013 VMS data.	High
BS 14	Subtidal coarse sediment	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	NS-H	High		High
BS 14	Subtidal mixed sediments	Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm	Fishing - benthic trawling	H	Low	Fishing effort >15m: Fishing activity take place over the north-east of the feature extent. UK 2009-2013 VMS data shows a maximum of 350 hrs of dredge activity, and EU 2009-2013 VMS data shows a max. 750hrs demersal trawling activity, as well as low levels of beam trawls and dredges	Moderate
BS 14	Subtidal mixed sediments	Structural abrasion/penetration: Structural damage to seabed >25mm	Fishing – hydraulic dredging	H	Low	Fishing effort >15m: EU dredge and UK dredge activity 2009-2013 are recorded across the feature, with the highest levels located in the north east corner of the feature with a maximum of 350hrs.	Moderate
BS 14	Subtidal mixed sediments	Physical change (to another seabed type)	Fishing – hydraulic dredging	H	Low		Moderate
BS 14	Subtidal mixed sediments	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	M	High	Fishing effort >15m: High levels of fishing activity take place over the north-east of the feature extent. UK 2009-2013 VMS data shows a maximum of 350 hrs of dredge activity, and EU 2009-2013 VMS data shows a high level of demersal trawling activity (max. 750hrs) as well as low levels of beam trawls and dredges	High
BS 14	Subtidal mixed sediments	Removal of non-target species (lethal)	Fishing - benthic trawling	M	High		High

Table 77: Offshore Overfalls pMCZ Vulnerability Assessment

Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
BS 17	Moderate energy circalittoral rock	Removal of non-target species (lethal)	Fishing - benthic trawling	M-H	Moderate	VMS indicates Low levels of dredging (up to 100hrs 2009-'3) and low levels of beam trawling (30 hrs '09-'13), occurring predominantly in the portion of the feature in the east of the site by the UK >15m fleet. Aggregated VMS data shows high levels of demersal fishing (up to 853 hrs '09-'13) and low levels of Dredging (63hrs '09-'13) and low levels of beam trawling (88 hrs '09-'13) from the EU >15m fleet. Pelagic trawling is also occurring across the distribution of this feature.	High
BS 17	Moderate energy circalittoral rock	Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm	Fishing - benthic trawling	M-H	Low		Moderate
BS 17	Moderate energy circalittoral rock	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	L-H	Moderate		High
BS 17	Subtidal coarse sediment	Removal of non-target species (lethal)	Fishing - benthic trawling	NS-M	Moderate	VMS indicates low levels of beam trawling (approx 100 hr 2009-13) and dredging (55 hrs '09-'13) in the North East of the site by the UK >15m fleet. Aggregated VMS data shows high levels of demersal trawling (up to 803hrs '09-'13) from the EU >15m fleet. There are also Low levels of Dredging (74hrs '09-'13) and beam trawling (39hrs '09-'13) from the EU >15m Fleet. VMS ping data ('09-'13) confirms this activity is happening in the vicinity of the feature. Pelagic trawling from the UK and EU fleet is also occurring within the site.	Moderate
BS 17	Subtidal coarse sediment	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	NS-H	High		High
BS 17	Subtidal sand	Removal of non-target species (lethal)	Fishing - benthic trawling	NS-M	High	VMS indicates low levels of beam trawling (approx 100 hr 2009-13) and dredging (273 hrs '09-'13) in the north-east of the site by the UK >15m fleet. Aggregated VMS data shows high levels of demersal trawling (up to 844hrs '09-'13) from the EU >15m fleet. There are also Low levels of Dredging (50hrs '09-'13) and beam trawling (216hrs '09-'13) from the EU >15m fleet. Ping data ('09-'13) confirms this activity is happening in the vicinity of the feature. Pelagic trawling from the UK and EU fleet is also occurring within the site.	High
BS 17	Subtidal sand	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	NS-M	High		High
BS 17	Subtidal mixed sediments	Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm	Fishing - benthic trawling	H	Low	VMS indicates low levels of beam trawling (approx 85 hr 2009-13) and dredging (273 hrs '09-'13) in the north-east of the site by the UK >15m fleet. Aggregated VMS data shows demersal trawling (up to 769hrs '09-'13 but typically over 350hrs '09-'13) from the EU >15m fleet. There are	Moderate

Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
BS 17	Subtidal mixed sediments	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	M	High	also Low levels of Dredging (50hrs '09-'13) and beam trawling (216hrs '09-'13) from the EU >15m fleet in the north-east of the site. Ping data ('09-'13) confirms this activity is happening in the vicinity of the feature. Pelagic trawling from the UK and EU fleet is also occurring within the site.	High
BS 17	Subtidal mixed sediments	Removal of non-target species (lethal)	Fishing - benthic trawling	M	High		High

Table 78: South-West Deeps (West) MCZ Vulnerability Assessment

Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
FS 02	Subtidal mud	Removal of non-target species (lethal)	Fishing - benthic trawling	M	Moderate	EU and UK 2009-2013 aggregated VMS indicates the presence of this activity occurring over the feature. Levels are Moderate, with effort across the feature generally in excess of 250hrs, with a maximum value of ~550hrs over a 5 year period, for the combined EU and UK fisheries.	Moderate
FS 02	Subtidal mud	Removal of target species (lethal)	Fishing - benthic trawling	NS-M	Moderate		Moderate
FS 02	Subtidal mud	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	L-M	Moderate		Moderate
FS 02	Mud habitats in deep water	Removal of non-target species (lethal)	Fishing - benthic trawling	M (Based on Subtidal mud)	Moderate		Moderate
FS 02	Mud habitats in deep water	Removal of target species (lethal)	Fishing - benthic trawling	NS-M (Based on Subtidal Mud)	Moderate		Moderate
FS 02	Mud habitats in deep water	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	L-M (Based on Subtidal mud)	Moderate		Moderate
FS 02	Fan mussel (*Atrina fragilis*)	Shallow abrasion/penetration: damage to seabed surface and penetration ≤25mm	Fishing - benthic trawling	High	Low	EU and UK 2009-2013 aggregated VMS indicates the presence of this activity within the site. In areas around the known records of Fan mussel levels are between 50 and 350 hours of exposure to demersal trawl activity over the 5 years. This is a low level of exposure to subsurface pressures associated with demersal trawling	Moderate
FS 02	Fan mussel (*Atrina fragilis*)	Removal of non-target species (lethal)	Fishing - benthic trawling	High	Moderate		High
FS 02	Fan mussel (*Atrina fragilis*)	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	M	Moderate		Moderate

Table 79: Western Channel pMCZ Vulnerability Assessment

Site Code	Feature	Pressure	Activity	Sensitivity	Exposure	Comment	Vulnerability
FS 12	Subtidal coarse sediment	Removal of non-target species (lethal)	Fishing - benthic trawling	NS-M	High	Fishing effort >15m EU fleet is high: with up to 1930 hrs EU demersal trawling over the 5 year period 2009-2013. Low levels of >15m UK Beam trawling: a maximum of 116 hrs over 2009-2013.	High
FS 12	Subtidal coarse sediment	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	NS-H	High		High
FS 12	Subtidal sand	Removal of non-target species (lethal)	Fishing - benthic trawling	NS-M	High		High
FS 12	Subtidal sand	Surface abrasion: damage to seabed surface features	Fishing - benthic trawling	NS-M	High		High