Scientific advice on possible offshore Marine Conservation Zones considered for consultation in 2017

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1 Introduction

JNCC and Natural England have been requested by Defra to provide scientific advice on recommended MCZs (**rMCZs**) to be considered for a third tranche of MCZ designations. JNCC and Natural England have also been asked to provide scientific advice on any further options to fill any shortfalls predicted within Defra's contribution to the MPA network, as well as advice on MCZs proposed by third-parties for the conservation of highly mobile species (marine mammals, birds and fish). The aim is to complete the UK Blue Belt and the UK's contribution to the ecologically coherent network of MPAs in the North East Atlantic. The advice regarding options to fill shortfalls and highly mobile species will be provided within separate summary reports in February 2017.

This report details JNCC's site assessments for offshore rMCZs considered for possible consultation in Tranche Three by Defra to better inform the final decision-making process about which sites should go forward to a public consultation in 2018. JNCC's full scientific advice on all components of Tranche Three as requested by Defra is published on JNCC's website[1].

In total, 56 rMCZs are being considered for possible inclusion in the third consultation of MCZs (Tranche Three). 17 of these are found in the offshore environment (beyond 12 nautical miles offshore) or span the inshore-offshore boundary and fall under JNCC's auspices for advice and reporting. The remaining 39 sites are inshore (or span the boundary), and are under Natural England's direction. The offshore sites that are the focus of this report are listed below (Table 1), and presented in Figure 1.

[1] JNCC's Tranche Three Pre-Consultation Advice package. Available at: http://jncc.defra.gov.uk/page-7119

Table 1: JNCC led offshore sites proposed for designation within 2018

JNCC led offshore recommended MCZs considered for inclusion within the Tranche Three consultation	
Compass Rose rMCZ – *Site Code: NG12*	**Silver Pit rMCZ -** *Site Code: NG06*
East Meridian (Eastern Side) rMCZ – *Site Code: BS29.2*	**Slieve Na Griddle rMCZ -** *Site Code: ISCZ07*
Holderness Offshore rMCZ - *Site Code: NG09*	**South of Celtic Deep rMCZ -** *Site Code: FS09*
Inner Bank rMCZ - *Site Code: BS31*	**South of the Isles of Scilly rMCZ -** *Site Code:FS13*
Markham's Triangle rMCZ- *Site Code: NG07*	**South Rigg rMCZ -** *Site Code: ISCZ06*
Mud Hole rMCZ – *Site Code: ISCZ01*	**South-West Deeps (East) rMCZ -** *Site Code: FS03*
North-East Haig Fras rMCZ - *Site Code: FS08*	
JNCC led offshore designated MCZs with additional features considered for inclusion within the Tranche Three consultation	
East of Haig Fras MCZ - *Site code FS07*	**The Canyons MCZ -** *Site Code: FS01*
Swallow Sand MCZ - *Site Code: NG16*	
Area proposed by Northern Irish Fishermen considered for inclusion within the Tranche Three consultation	
Queenie Corner	

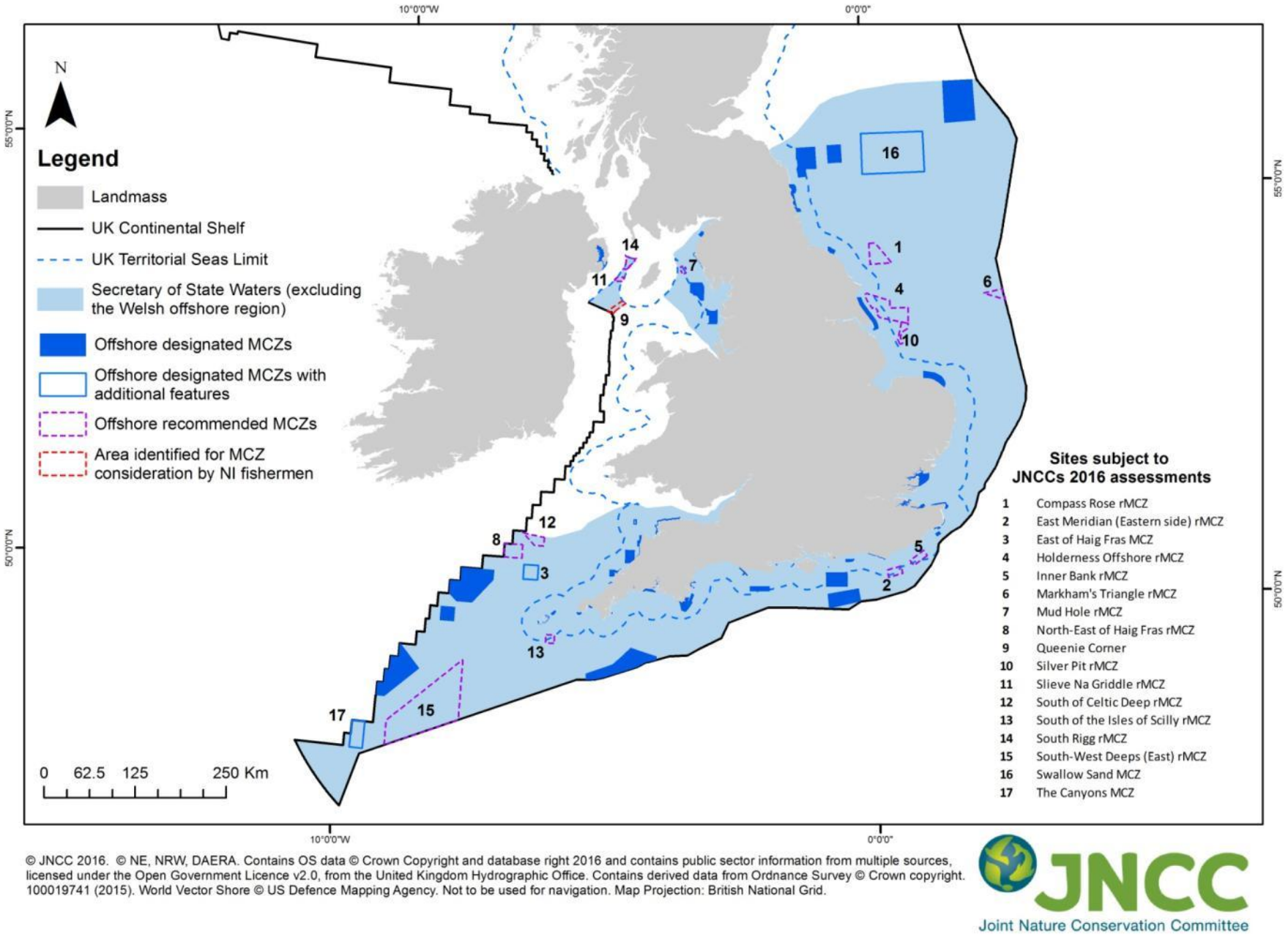

Figure 1: The offshore rMCZs and designated MCZs with additional features considered for designation within Tranche Three

2 Methods

JNCC completed the site assessments between January and August 2016 for 13 possible Tranche Three offshore rMCZs. During this time further assessments of possible additional features for three MCZs designated in January 2016 were completed. A site assessment was also completed for an area proposed by Northern Irish fishermen for consideration within the Tranche Three consultation. Our summary report describes the assessments of confidence in feature presence and feature extent; confidence in feature condition; feature vulnerability and feature risk and on where data support the designation of a feature or site from scientific evidence based perspective.

Our assessments followed published peer-reviewed protocols and used the best-available evidence which include new data and information collected since JNCC's previous advice[2], where it has become available. 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 previous advice remains up-to-date for those sites or features. Even where new data have become available, 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 in the post-consultation advice of Tranche Two[3] to identify those features for which new or updated advice was required. This process has been implemented for our 2016 Tranche Three pre-consultation advice and is available in Annex 1.

[2] JNCC's Tranche Two advice on offshore Marine Conservation Zones available at: http://jncc.defra.gov.uk/page-6658
[3] Scientific advice on offshore Marine Conservation Zones proposed for designation in 2015/16. Version 4.0, July 2015 Available at http://jncc.defra.gov.uk/PDF/MCZT2PostConsultationAdvice_v4.pdf

2.1 New data for 2016 assessments

Table 2: New evidence available for feature assessments in 2016

New Data
Defra contract MB0120[4]
Marine Aggregate Levy Sustainability Fund (**MALSF**) Regional Environmental Characterisation (**REC**) Surveys[5]
British Geological Survey Particle Size Analysis (**PSA**) data[6]
Irish Marine Institute and AFBI *Nephrops* Stock Assessment burrow counts – data from 2015 survey[7]
Marine Recorder snapshot[8]
JNCC 2015 monitoring surveys of East of Haig Fras MCZ and Swallow Sand MCZ[9]
CODEMAP2015 expedition ROV data of The Canyons[10]
Hornsea Windfarm Cable Route Environmental Survey 2011[11]
Hanson Aggregates Ltd commissioned survey in 2012[12]
Broad-scale Habitat Mapping Project surveys 1996-1998[13]
Civil Hydrography Programme[14]
BGS Geostatistical analysis of sediment samples from Swallow Sand MCZ[15]
Crown Estates – energy and infrastructure GIS downloads[16]

[4] Defra contract MB0120. Available at: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18983&FromSearch=Y&Publisher=1&SearchText=MB0129&SortString=ProjectCode&SortOrder=Asc&Paging=10

[5] Marine Aggregate Levy Sustainability Fund (MALSF) Regional Environmental Characterisation (REC) Surveys for the East Coast, Eastern Channel, Humber and South Coast. Available at: http://portal.oceannet.org/search/full/catalogue/dassh.ac.uk__MEDIN_2.3__52b208fc4f5bba371819fe5f67565643.xml

[6] An updated version of the BGS PSA dataset was downloaded from http://mapapps2.bgs.ac.uk/geoindex_offshore/home.html in August 2015 and translated into broad-scale habitats

[7] Note data available from 2001-2013 has previously been used in JNCC's scientific advice on the designation of MCZs. Irish Marine Institute and AFBI Nephrops Stock Assessment burrow count data available at: http://www.marine.ie/Home/marine-institute-request-digital-data

[8] JNCC Marine Recorder. Available at: http://jncc.defra.gov.uk/page-1599 [Dated 6th July 2016]

[9] A report of the monitoring is not available at present but will be referenced in JNCC's Tranche Three post-consultation advice should additional features for this MCZ be put forward for consultation by Defra

[10] Habitat mapping and ROV vibrocorer trials around Whittard Canyon and Haig Fras cruise report. Available at: http://eprints.soton.ac.uk/388470/1/NOC_CR_36_March_2016.pdf

[11] Translated grab samples collected by DONG energy during environmental surveys for the Hornsea Windfarm Cable Route in 2011

[12] Surveys and analysis conducted by Marine Ecological Surveys ltd, Fugro EMU and Marine Space on behalf of Hanson Aggregates Ltd.

[13] Surveys conducted between 1996 and 1998 which resulted in a habitat map for the Wash and the Lincolnshire and the north Norfolk coasts. Available at at http://www.emodnet-seabedhabitats.eu/default.aspx?page=1974&LAYERS=EUNISbroad&GUICode=GB000240&zoom=6&Y=52.51519786387988&X=2.269999999994852

[14] A systematic survey of coastal waters by the Maritime and Coastguard Agency with assistance from UK hydrographic Office. Available at: https://www.gov.uk/guidance/the-civil-hydrography-programme

[15] Mapping seabed sediments of the Swallow Sand and South-west Deeps (West) MCZs. BGS Open Report OR/14/015. Available at: http://nora.nerc.ac.uk/507070/1/OR14015.pdf

[16] Available at: http://www.thecrownestate.co.uk/energy-and-infrastructure/downloads/maps-and-gis-data/ [Accessed from January 2016]

UK Oil and Gas Data[17]
MMO Case Management System[18]

2.2 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[19], and the supporting guidance on its application[20]. Methods defined and described within JNCC's previous scientific advice[2] were applied where relevant. The full assessment will be provided in an Annex to the full report[21].

2.3 Confidence in feature condition

Where required, JNCC assessed the confidence in a feature's condition in line with MCZ Technical Protocol F[22]. The protocol outlines different approaches, depending on whether the feature's condition was assessed using direct evidence, or by way of the vulnerability assessment process. The assessment results are provided in the site-specific sections below. The full assessments will be provided in an Annex to the full report.

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

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[23], and updated where required. Any changes from previous advice[2] are highlighted in the site-specific sections below.

[17] Spatial data on the locations of infrastructure associated with oil and gas extraction. Available at: http://www.ukoilandgasdata.com [Accessed March 2016]

[18] An extract of the polygon features captured in the Marine Case Management System (MCMS). Available from http://www.geostore.com/environment-agency/WebStore?xml=environment-agency/xml/ogcDataDownload.xml [Accessed June 2016]

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

[20] 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

[21] Many offshore rMCZs are in moderate to high energy environments, as a result the spatial location of habitats will be dynamic. In these sites, habitats for which we have advised high or moderate confidence in extent could potentially move over time.

[22] 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

[23] 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.

2.5 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*'[24]. For each site, two risk scores are advised for each feature that considers 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[24].

2.6 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*'[24]. Firstly, JNCC's advice determines whether a feature has enough data to support its designation, using outputs of the application of Technical Protocol E[19] and its supplementary guidance[20].

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 2016 network analysis[25] along with expert judgement[26] taking into account new data and any changes in our knowledge of the sites since JNCC's previous scientific advice[2]. The assessment also considers risk (Section 2.5), and whether a precautionary approach should be taken to protect the feature.

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

[24] JNCC/NE, Advice on when data support a feature/site for designation from a scientific, evidence-based perspective, July 2014. Available at: http://jncc.defra.gov.uk/page-5999
[25] JNCC (2016). Assessing progress towards an ecologically coherent MPA network in Secretary of State Waters in 2016. http://jncc.defra.gov.uk/page-7119
[26] 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

2.7 Quality Assurance Process

When compiling our advice, JNCC has endeavoured to comply with the Government Chief Scientific Adviser's guidelines for preparing scientific advice[27], and the recommendations of the Graham-Bryce report[28] that reviewed the evidence process for selecting marine Special Areas of Conservation (**SACs**). JNCC has also applied its own internal Evidence Quality Assurance (**EQA**) Policy[29] to ensure our advice is scientifically robust.

The JNCC MCZ Evidence Quality Assurance (**EQA**) 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. The EQA group signed off the assessments once it was satisfied that all technical protocols had been followed.

Overall, we are content that our advice is a quality-assured product, fit for purpose, to assist the UK Government to make decisions on the designation of MCZs. Our advice has been quality assured through our internal systems, and reviewed and signed-off by our independent non-executive MPA Sub-Group.

Detailed information on the QA procedures followed during this advice package can be found in Annex 2 within the Evidence QA statement.

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

3 Results

3.1 Summary of assessments

Table 3: Site assessment summary table from JNCC's 2016 assessments

The following table summarises the outcomes of JNCC's 2016 assessments using evidence available up to 25th August 2016. The score from JNCC's previous assessment[2] is shown in *blue italic text*. Where the feature has not previously been advised on for a site an asterisk (*) is shown as there was no previous assessment.

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

Site Name (Code)	**Ecological Network Guidance (ENG) feature**	**Confidence in feature presence** (MCZ Technical Protocol E and guidance) *(Previous Assessment)*	**Confidence in feature extent/distribution**[30] (MCZ Technical Protocol E and guidance) *(Previous Assessment)*	**Confidence in feature condition** (MCZ Technical Protocol F) *(Previous Assessment)*	**General Management Approach advised** (MCZ Conservation Objective Guidance) *(Previous Assessment)*
Compass Rose rMCZ (NG12)	**Moderate energy circalittoral rock** (A4.2)	**No confidence** *(Low)*	**No confidence** *(Low)*	**Not assessed** *(*)*	**Not assessed** *(*)*
	Subtidal sand (A5.2)	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Maintain)*
	Subtidal coarse sediment (A5.1)	**High** *(High)*	**Low** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mixed sediments (A5.4)	**Moderate** *(Moderate)*	**Low** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal coarse sediment/Subtidal mixed sediments habitat mosaic (A5.1/A5.4)	**High** *(*)*	**Moderate** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Ocean quahog (*Arctica islandica*)	**High***(Low)*	**High***(Low)*	**Low** *(Low)*	**Recover** *(Maintain / Recover)*
East Meridian (Eastern Side) rMCZ (BS29.2)	**Moderate energy circalittoral rock** (A4.2)	**Low** *(*)*	**Low** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Subtidal coarse sediment (A5.1)	**High** *(*)*	**High** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Subtidal sand (A5.2)	**Moderate** *(Low)*	**Low** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mixed sediments (A5.4)	**Low** *(Low)*	**Low** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Ross worm (*Sabellaria spinulosa*) reefs	**Not Assessed** *(Low)*	**Not Assessed** *(Low)*	**Not Assessed** *(Low)*	**Not Assessed** *(*)*
	Undulate ray (*Raja undulata*)	**Moderate** *(*)*	**Moderate** *(*)*	**Not Assessed** *(*)*	**Not Assessed** *(*)*

[30] Distribution relates only to species FOCI whereas extent is applied to broad-scale habitats, geological/geomorphological features and habitat FOCI.

	English Channel outburst flood features (Quaternary fluvio-glacial erosion features)	**High** *(High)*	**High** *(High)*	**Not Assessed** *(*)*	**Not Assessed** *(*)*
East of Haig Fras MCZ (FS07)	**High energy circalittoral rock** (A4.1)	**High** *(High)*	**Moderate** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Sea-pen and burrowing megafauna communities	**High** *(*)*	**Low** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Fan mussel (*Atrina fragilis*)	**High** *(*)*	**High** *(*)*	**Low** *(*)*	**Recover** *(*)*
Holderness Offshore rMCZ (NG09)	**High energy circalittoral rock** (A4.1)	**Low** *(*)*	**Low** *(*)*	**Low** *(*)*	**Maintain** *(*)*
	Moderate energy circalittoral rock (A4.2)	**Moderate** *(*)*	**Low** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Subtidal coarse sediment (A5.1)	**High** *(Moderate)*	**Moderate** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal sand (A5.2)	**High** *(*)*	**Moderate** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Subtidal mud (A5.3)	**Low** *(*)*	**Low** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Subtidal mixed sediments (A5.4)	**High** *(Moderate)*	**Moderate** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Horse mussels (*Modiolus modiolus*) beds	**Not Assessed** *(*)*	**Not Assessed** *(*)*	**Not Assessed** *(*)*	**Not Assessed** *(*)*
	Ross worm (*Sabellaria spinulosa*) reefs	**Low** *(*)*	**Low** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Ocean quahog (*Arctica islandica*)	**Moderate** *(*)*	**Low** *(*)*	**Low** *(*)*	**Recover** *(*)*
	North Sea Glacial Tunnel Valleys (Inner Silver Pitt)	**High** *(*)*	**High** *(*)*	**High** *(*)*	**Maintain** *(*)*
Inner Bank rMCZ (BS31)	**Moderate energy infralittoral rock** (A3.2)	**No confidence** *(Low)*	**No confidence** *(Low)*	**Not Assessed** *(*)*	**Not Assessed** *(*)*
	Moderate energy circalittoral rock (A4.2)	**Moderate** *(Low)*	**Low** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal coarse sediment (A5.1)	**High** *(Low)*	**High** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal sand (A5.2)	**High** *(Moderate)*	**High** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mud (A5.3)	**Low** *(*)*	**Low** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Subtidal mixed sediments (A5.4)	**High** *(*)*	**High** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Native oyster beds	**Not Assessed** *(No confidence)*	**Not Assessed** *(No confidence)*	**Not Assessed** *(Not Assessed)*	**Not Assessed** *(Not Assessed)*
	Native oyster (*Ostrea edulis*)	**Low** *(No confidence)*	**Low** *(No confidence)*	**Low** *(Low)*	**Recover** *(Recover)*
Markham's Triangle rMCZ (NG07)	**Subtidal coarse sediment** (A5.1)	**High** *(Moderate)*	**High** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal sand (A5.2)	**High** *(Moderate)*	**High** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mud (A5.3)	**High** *(*)*	**High** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Subtidal mixed sediments (A5.4)	**High** *(*)*	**High** *(*)*	**Low** *(*)*	**Recover** *(*)*
Mud Hole rMCZ (ISCZ01)	**Subtidal mud** (A5.3)	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
	Sea-pen and burrowing megafauna communities	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
North-East of Haig Fras rMCZ (FS08)	**Subtidal coarse sediment** (A5.1)	**Moderate** *(Low)*	**Low** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal sand (A5.2)	**High** *(Moderate)*	**Low** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mud (A5.3)	**High** *(Low)*	**Low** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mixed sediments (A5.4)	**Low** *(Low)*	**Low** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
Queenie Corner (Alternative site	**Subtidal sand** (A5.2)	**Moderate** *(*)*	**Low** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Subtidal mud (A5.3)	**High** *(*)*	**High** *(*)*	**Low** *(*)*	**Recover** *(*)*

proposed by Northern Irish fishermen)	**Sea-pen and burrowing megafauna communities**	**High** *(*)*	**High** *(*)*	**Low** *(*)*	**Recover** *(*)*
Silver Pit rMCZ (NG06)	**Moderate energy circalittoral rock** (A4.2)	**Low** *(*)*	**Low** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Subtidal coarse sediment (A5.1)	**High** *(*)*	**Moderate** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Subtidal sand (A5.2)	**High** *(Moderate)*	**Moderate** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mud (A5.3)	**Moderate** *(*)*	**Low** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Subtidal mixed sediments (A5.4)	**High** *(Moderate)*	**High** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Horse mussel (*Modiolus modiolus*) beds	**Not Assessed** *(*)*	**Not Assessed** *(*)*	**Not Assessed** *(*)*	**Not Assessed** *(*)*
	Ross worm (*Sabellaria spinulosa*) reefs	**Moderate** *(Low)*	**Low** *(Not Assessed)*	**Low** *(Low)*	**Recover** *(Maintain)*
	Ocean quahog (*Arctica islandica*)	**Low** *(*)*	**Low** *(*)*	**Low** *(*)*	**Recover** *(*)*
	North Sea Glacial Tunnel Valleys (Inner Silver Pit)	**High** *(High)*	**High** *(High)*	**High** *(*)*	**Maintain** *(*)*
Slieve Na Griddle rMCZ (ISCZ07)	**Low energy circalittoral rock** (A4.3)	**Not Assessed** *(Not Assessed)*	**Not Assessed** *(Not Assessed)*	**Not Assessed** *(Not Assessed)*	**Not Assessed** *(Not Assessed)*
	Subtidal mud (A5.3)	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
	Sea-pen and burrowing megafauna communities	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
South of Celtic Deep rMCZ (FS09)	**Moderate energy circalittoral rock** (A4.2)	**High** *(High)*	**Moderate** *(Low)*	**Low** *(Low)*	**Recover** *(Maintain)*
	Subtidal coarse sediment (A5.1)	**High** *(High)*	**High** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal sand (A5.2)	**High** *(High)*	**High** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mud (A5.3)	**Moderate** *(Moderate)*	**Low** *(Low)*	**Low** *(Low)*	**Recover** *(Maintain)*
	Subtidal mixed sediments (A5.4)	**High** *(High)*	**High** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Ocean quahog (*Arctica islandica*)	**Low** *(Low)*	**Low** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
South of the Isles of Scilly rMCZ (FS13)	**Moderate energy circalittoral rock** (A4.2)	**Low** *(*)*	**Low** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Subtidal coarse sediment (A5.1)	**High** *(Low)*	**Moderate** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal sand (A5.2)	**High** *(Low)*	**High** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mixed sediments (A5.4)	**High** *(*)*	**Moderate** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Subtidal coarse sediment/Subtidal mixed sediments habitat mosaic (A5.1/A5.4)	**High** *(*)*	**High** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Ocean quahog (*Arctica islandica*)	**Low** *(*)*	**Low** *(*)*	**Low** *(*)*	**Recover** *(*)*
	Fan mussel (Atrina fragilis)	**Moderate** *(*)*	**Low** *(*)*	**Low** *(*)*	**Recover** *(*)*
South Rigg rMCZ (ISCZ06)	**High energy circalittoral rock** (A4.1)	**Low** *(*)*	**Low** *(*)*	**Low** *(*)*	**Maintain** *(*)*
	Moderate energy circalittoral rock (A4.2)	**Moderate** *(High)*	**Moderate** *(High)*	**Low** *(Low)*	**Maintain** *(Maintain)*
	Low energy circalittoral rock (A4.3)	**No Confidence** *(No Confidence)*	**No Confidence** *(No Confidence)*	**Not Assessed** *(Not Assessed)*	**Not Assessed** *(Not Assessed)*
	Subtidal coarse sediment (A5.1)	**High** *(*)*	**Moderate** *(*)*	**Low** *(*)*	**Maintain** *(*)*
	Subtidal sand (A5.2)	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mud (A5.3)	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mixed sediments (A5.4)	**High***(High)*	**Moderate** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Sea-pen and burrowing megafauna communities	**High** *(High)*	**High** *(High)*	**Low** *(Low)*	**Recover** *(Recover)*
	Ocean quahog (*Arctica islandica*)	**Low** *(Low)*	**Low** *(Low)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal coarse sediment (A5.1)	**High** *(Moderate)*	**High** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*

South-West Deeps (East) rMCZ (FS03)	**Subtidal sand** (A5.2)	**High** *(Moderate)*	**High** *(Moderate)*	**Low** *(Low)*	**Recover** *(Recover)*
	Subtidal mixed sediments (A5.4)	**Low** (*)	**Low** (*)	**Low** (*)	**Recover** (*)
	Deep-sea bed (A6)[31]	**High** *(High)*	**High** *(High)*	**Low** (*)	**Recover** (*)
	Celtic Sea Relict Sandbanks	**High** *(High)*	**High** *(High)*	**Low** (*)	**Maintain** (*)
	Ocean quahog (*Arctica islandica*)	**Low** (*)	**Low** (*)	**Low** (*)	**Maintain** (*)
	Fan mussel (Atrina fragilis)	**Low** (*)	**Low** (*)	**Low** (*)	**Recover** (*)
	Native oyster (Ostrea edulis)	**Low** (*)	**Low** (*)	**Low** (*)	**Maintain** (*)
Swallow Sand MCZ (NG16)	**Subtidal mud** (A5.3)	**High** (*)	**Moderate** (*)	**Low** (*)	**Recover** (*)
	Subtidal mixed sediments (A5.4)	**High** (*)	**Low** (*)	**Low** (*)	**Recover** (*)
	Ocean quahog (*Arctica islandica*)	**High** (*)	**High** (*)	**Low** (*)	**Recover** (*)
	Sea-pen and burrowing megafauna communities	**High** (*)	**Moderate** (*)	**Low** (*)	**Recover** (*)
The Canyons MCZ[31] (FS01)	**Coral Gardens**	**Moderate** (*)	**Low** (*)	**Low** (*)	**Recover** (*)
	Sea-pen and burrowing megafauna communities	**High** (*)	**Low** (*)	**Low** (*)	**Maintain** (*)

[31] Note that subsequent scientific advice on the designation of EUNIS Level 3 habitats falling within 'Deep-sea bed' will be provided in February 2017 as part of JNCC's scientific advice package on fillings shortfalls in the MPA network

3.2 Compass Rose rMCZ

Compass Rose rMCZ was recommended by the Net Gain regional MCZ project[38] for the designation of one broad-scale habitat; **Moderate energy circalittoral rock.** The regional MCZ project also noted the presence of **Subtidal coarse sediment** and **Subtidal sand** within the site but did not recommend them for designation. As part of JNCC's scientific advice to Defra in July 2014[2], all features with supporting data or recommended by the regional MCZ project for Compass Rose rMCZ were advised upon. Following JNCC's 2014 advice, a decision was made by Defra not to designate Compass Rose rMCZ through Tranche Two. The site however is now being further advised on following Defra's request to consider the site for Tranche Three in order to contribute to filling ecological gaps in the MPA network.

Data to support the original recommendation by the regional MCZ project was based primarily on modelled maps from EUSeaMap 2011. Additional data were gathered for the site from an MB0120 site survey in 2012, and old records from annual International Bottom Trawl Survey catch per unit effort data collated through Defra contract MB0116. Based on these new data, JNCC advised in 2014 on not only the three broad-scale habitats previously known to occur in the site, but also the broad-scale habitat **Subtidal mixed sediments** and the species FOCI **Ocean quahog (*Arctica islandica*)**.

Since the 2014 advice, JNCC has received further evidence of the presence **Ocean quahog (*Arctica islandica*)** occurring in the site from the MB0120 survey in 2012. A new broad-scale habitat map has also been created. This habitat map includes a mapped extent for a **Subtidal coarse sediment / Subtidal mixed sediments mosaic habitat**. In the present assessment, JNCC provide advice on **Moderate energy circalittoral rock**, **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mixed sediments, Subtidal coarse sediment/Subtidal mixed sediments mosaic habitat** and **Ocean quahog (*Arctica islandica*).**

Table 4: Compass Rose rMCZ 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
Compass Rose rMCZ (NG12)	**Moderate energy circalittoral rock**	**No confidence** (Low)	Owing to a new habitat map, revised advice is required for this habitat. The data no longer support the presence of the feature in the site. The only evidence for this feature comes from modelled maps. More recent survey data suggest other habitats are present in areas previously mapped as moderate energy circalittoral rock and therefore JNCC has no confidence in the presence of exposed rock in the site. This feature is not assessed further.	**No confidence** (Low)	Owing to a new habitat map, revised advice is required for this habitat. The data no longer support the presence of the feature in the site. The only evidence for this feature comes from modelled maps. More recent survey data suggest other habitats are present in areas previously mapped as moderate energy circalittoral rock and therefore JNCC has no confidence in the presence of exposed rock in the site. This feature is not assessed further.
	Subtidal sand	**High** (High)	A new habitat map is available; however the change in feature extent is considered minor and would be unlikely to result in the modification of our 2014 advice. The mapped extent from survey supports the ground-truth records which were used during our previous 2014 advice.	**High** (High)	A new habitat map is available; however the change in feature extent is considered minor and would be unlikely to result in the modification of our 2014 advice. The mapped extent from survey supports the ground-truth records which were used during our previous 2014 advice.
	Subtidal coarse sediment	**High** (High)	There are no new ground-truth data available for this feature; therefore the confidence in feature presence remains High as per previous JNCC advice.	**Low** (Low)	A new habitat map is available which includes a mapped extent of Subtidal coarse sediment/Subtidal mixed sediments habitat mosaic; however there is no additional extent information for the constituent features. Therefore no revised advice on the presence and extent of the feature is required.
	Subtidal mixed sediments	**Moderate** (Moderate)	There are no new ground-truth data available for this feature; therefore the confidence in feature presence remains Moderate as per previous JNCC advice.	**Low** (Low)	A new habitat map is available which includes a mapped extent of Subtidal coarse sediment/Subtidal mixed sediments habitat mosaic; however there is no additional extent information for the constituent features. Therefore no revised advice on the presence and extent of the feature is required.
	Subtidal coarse sediment/ Subtidal mixed sediments habitat mosaic	**High** (*)	The presence of the feature is supported by a habitat map from survey and multiple ground-truth records indicating the presence of the constituent broad-scale habitats. Therefore confidence in the presence of the feature is High	**Moderate** (*)	Confidence in the extent of the feature is Moderate because the acoustic information used to create the habitat map covers < 50% of the site and the ten ground-truth records are dispersed and mainly in the southern half of the site.
	Ocean quahog (*Arctica islandica*)	**High** (Low)	In total there are 11 records of Ocean quahog within the site. One record from a trawl survey in 2009 and ten records from grab samples collected during the MB0120 survey in	**High** (Low)	Records from the MB0120 survey contain information on the abundance of individuals found and the data are less than six years old. Available records indicate that Ocean quahog mainly occur in the middle of the

			2012. As there are over five records from within the last six years, confidence in feature presence is High		site. Therefore confidence in species distribution is High

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

Table 5: Summary of JNCC's conservation advice for features in Compass Rose rMCZ

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F[22])	General Management Approach advised (MCZ Conservation Objective Guidance)[32]	Rationale for conservation advice
Compass Rose rMCZ (NG12)	**Moderate energy circalittoral rock**	**Not Assessed** *(*)*	**Not Assessed** *(*)*	**N/A**
	Subtidal sand	**Low** *(Low)*	**Recover** *(Maintain)*	As the updated VMS data suggest the levels of fishing activity over the feature changed between 2006-2009 and 2009-2013 data sets, new advice was required. The level and distribution of fishing activity (otter and beam trawling from aggregated 2009-2013 VMS data) indicates this feature experiences moderate exposure to certain pressures to which it is moderately vulnerable. The feature is also considered to be experiencing low exposure to pressures associated with infrastructure (cables, pipelines).
	Subtidal coarse sediment	**Low** *(Low)*	**Recover** *(Recover)*	JNCC's previous 2014 advice assigned Recover objective due to the feature's exposure to pressures associated with benthic trawling as indicated by VMS data from 2006-2009. Updated aggregated VMS data (2009-2013) do not suggest a change in activity and the GMA remained the same (as per Decision Tree Process).
	Subtidal mixed sediments	**Low** *(Low)*	**Recover** *(Recover)*	
	Subtidal coarse sediment / Subtidal mixed sediments mosaic habitat	**Low** *(*)*	**Recover** *(*)*	The level and distribution of fishing activity (otter and beam trawling from aggregated 2009-2013 VMS data) indicates this feature experiences moderate exposure to certain pressures to which it is highly vulnerable. The feature is also considered to be experiencing low exposure to pressures associated with infrastructure (cables, pipelines).
	Ocean quahog (*Arctica islandica*)	**Low** *(Low)*	**Recover** *(Maintain/Recover)*	Previously the quality of available data was not enough to determine a GMA for this feature. As more records are now available, and with updated fishing information 2009-2013, new advice has been provided. The level and distribution of fishing activity (otter and beam trawling from aggregated 2009-2013 VMS data) indicates this feature experiences moderate exposure to certain pressures to which it is highly vulnerable. The feature is also considered to be experiencing low exposure to pressures associated with infrastructure (cables, pipelines).

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

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

Table 6: Compass Rose rMCZ feature risk assessment

Site (code)	Feature	Current risk	Future risk
Compass Rose rMCZ (NG12)	**Moderate energy circalittoral rock**	**Not assessed**	
	Subtidal sand	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling and infrastructure	**High** Feature is **highly sensitive** (with moderate/high confidence) to physical removal (extraction of substratum).
	Subtidal coarse sediment	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), surface abrasion: damage to seabed surface features and physical removal (extraction of substratum).
	Subtidal mixed sediments	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling and infrastructure.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical change (to another seabed type), physical loss (to land or freshwater habitat), penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration, physical removal (extraction of substratum), introduction of microbial pathogens, introduction or spread of non-indigenous species and removal of non-target species.
	Subtidal coarse sediment/Subtidal mixed sediments mosaic habitat	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical change (to another seabed type), physical loss (to land or freshwater habitat), penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration, physical removal (extraction of substratum), introduction of microbial pathogens, introduction or spread of non-indigenous species and removal of non-target species.
	Ocean quahog (*Arctica islandica*)	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration and physical removal (extraction of substratum).

Table 7: Compass Rose rMCZ feature data sufficiency assessment and additional conservation / ecological considerations

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	Q2a: Does the feature fill a 'gap' in the network AND have confidence score of at least moderate for feature presence?	Q2b: Is the feature at high risk of damage?	Outcome from Question 2 assessment
Compass Rose rMCZ (NG12)	**Subtidal sand**	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			
	Subtidal coarse sediment	**Yes** (High confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** the feature is already adequately protected within the region.	**Yes** (Current risk)	**Feature should be further considered** – JNCC advises the feature is designated as part of a mosaic habitat with Subtidal mixed sediments
	Subtidal mixed sediments	**Yes** (Moderate confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** the feature is already adequately protected within the region.	**No**	**Scientific evidence does not justify designation as this stage –** however JNCC notes that this feature is mapped as a mosaic feature with Subtidal coarse sediment and it would be difficult to manage Subtidal coarse sediment without the constituent other component of the mosaic habitat designated
	Subtidal coarse sediment /Subtidal mixed sediments mosaic habitat	**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 8: Compass Rose rMCZ site level assessment

Question	Response
Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?	Yes – Subtidal mixed sediments as it forms a mosaic habitat with Subtidal coarse sediment
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?	100%
Q3: Does this site fill a 'gap' in the network based on revised confidence assessments in feature presence and extent?	Yes – for Subtidal sand in the Northern North Sea Charting Progress 2 region. The Ecological Network Guidance[33] (ENG) minimum target for Subtidal sand (15%) has already been met in the Secretary of State waters part of the CP2 region. However, only 7.2% of the feature is designated within MPAs across the wider CP2 region (the target for the CP2 region is 10%). This site would add 0.3% to the shortfall.

[33] JNCC and Natural England, Ecological Network Guidance (ENG), 2012. Available at: http://jncc.defra.gov.uk/pdf/100705_ENG_v10.pdf

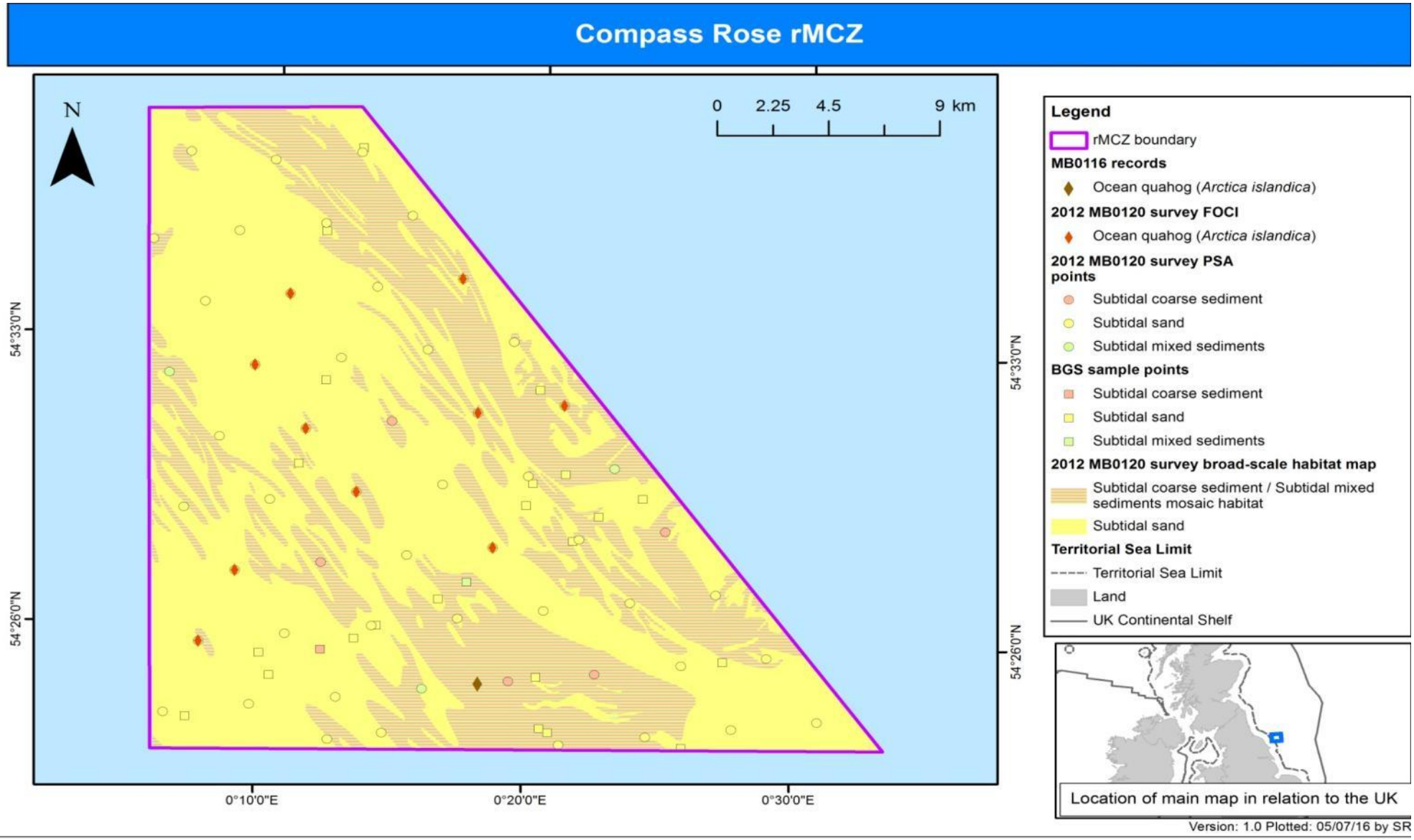

Figure 2: Map of broad scale habitats and species Features of Conservation Importance in Compass Rose rMCZ

3.3 East Meridian (Eastern Side) rMCZ

The Balanced Seas regional MCZ project[34] recommended East Meridian (Eastern Side) rMCZ, an area that encompasses the eastern part of East Meridian rMCZ. This smaller area was recommended in order to increase the potential amount of subtidal broad-scale habitats that may be protected within the region, and reduce the potential impacts on affected industries when management measures were introduced. East Meridian (Eastern Side) rMCZ was recommended for the broad scale habitat features **Subtidal sand** and **Subtidal mixed sediments** as well as the habitat FOCI **Subtidal sands and gravels**. The geomorphological FOCI **English Channel outburst flood features (Quaternary fluvio-glacial erosion features)**[35] occurs but was not recommended for designation.

A review of new data available since 2012 identified the presence of two additional broad-scale habitats: **Moderate energy circalittoral rock** and **Subtidal coarse sediment**. Data collated under the Defra contract MB0116 also identified the species FOCI **Undulate ray (*Raja undulata*)** and the habitat FOCI **Ross worm (*Sabellaria spinulosa*) reefs**.

No advice on **Subtidal sands and gravels** is provided in 2016 as this habitat is no longer a feature being considered through MCZ designations[36]. In the present assessment, JNCC provide advice on **Moderate energy circalittoral rock**, **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mixed sediments, Ross worm (*Sabellaria spinulosa*) reefs, Undulate ray (*Raja undulata*)** and **English Channel outburst flood features (Quaternary fluvio-glacial erosion features).**

[34] Balanced Seas Regional MCZ Project final report. Available at: http://publications.naturalengland.org.uk/publication/1463173
[35] English Channel outburst flood features (Quaternary fluvio-glacial erosion features) formed during the Pleistocene Epoch over 200,000years ago. A large glacial melt water lake burst its banks creating a vast discharge of sediment and water into the English Channel which carved out large-scale longitudinal valleys, subsequently submerged under water when sea levels rose.
[36] Review of the MCZ Features of Conservation Importance (Subtidal Sands and Gravels page 6) May 2016. Available here: http://jncc.defra.gov.uk/pdf/20160512_MCZReviewFOCI_v7.0.pdf

Table 9: East Meridian (Eastern Side) rMCZ 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 Meridian (Eastern Side) rMCZ (BS29.2)	**Moderate energy circalittoral rock**	**Low** (*)	The presence of this feature is supported with a mapped extent but with no ground-truthing data to verify whether the feature is exposed at the surface. Therefore JNCC have low confidence in the presence of the feature within either site.	**Low** (*)	Moderate energy circalittoral rock is mapped however there are no ground-truth data to support the feature's presence in the site (and therefore neither its extent). A Low confidence score for feature extent has been assigned in accordance with Technical Protocol E[19].
	Subtidal coarse sediment	**High** (*)	Multiple (44) ground-truthing points demonstrate the presence of this feature within East Meridian (Eastern Side) rMCZ. High confidence in feature presence is advised.	**High** (*)	Multiple (44) ground-truthing points are well distributed across the mapped extent of the feature in East Meridian (Eastern Side) rMCZ. High confidence in feature extent is advised.
	Subtidal sand	**Moderate** (Low)	The presence of this feature is supported by a mapped extent and two ground truth data points in both sites. Neither ground-truth data record supports this mapped extent. Only limited metadata on the ground-truth records are available. Expert judgement has been used to assign Moderate confidence in our knowledge of feature presence within East Meridian (Eastern Side) rMCZ.	**Low** (Low)	Subtidal sand is mapped the site but neither ground-truthing point support this mapped extent. Therefore, JNCC has Low confidence in the extent of the feature in both sites.
	Subtidal mixed sediments	**Low** (Low)	There is only one ground-truth data point to verify the presence of this feature and therefore confidence in feature presence is Low.	**Low** (Low)	JNCC has Low confidence in the extent of this feature within East Meridian (Eastern Side) rMCZ due to only a single data point supporting the feature and there being no mapped feature extent.
	Ross worm (*Sabellaria spinulosa*) reefs	**Not assessed** (Low)	The records for *Sabellaria spinulosa* indicate the presence of the species only, and do not give any indication that reef habitat is present. No assessment is made in the confidence of the feature being present as data do not confirm the presence of any reef habitat.	**Not assessed** (Low)	There is a lack of data confirming the presence of any reef habitat within the site; consequently feature extent cannot be assessed.
	Undulate ray (*Raja undulata*)	**Moderate** (*)	There are 18 samples identified over the last 28 years in East Meridian (Eastern Side) rMCZ. Four samples were collected in the last 12 years that demonstrate the presence of this feature in the site. Expert judgement has been used to assign Moderate confidence in	**Moderate** (*)	There are 18 samples identified over the last 28 years, with four samples occurring within the past 12 years in the north-west corner and central part of the southern boundary. Expert judgement has been used to assign Moderate

Site (Code)	Feature	Evidence Assessment Results			
		Confidence in presence	Rationale for confidence in Feature presence	Confidence in extent	Rationale for confidence in Feature extent
			feature presence due to the number of records collected in the last12 years, which are further supported by the large number of records collected in the site over the last 28 years.		confidence in the distribution of the feature within the site.
	English Channel outburst flood features (Quaternary fluvio-glacial erosion features)	**High** (High)	Confidence in feature presence is a direct parallel to confidence in the morphology of the geo-feature. Confidence in the maps of the English Channel Outburst feature in the site is high	**High** (High)	Confidence in feature presence is a direct parallel to confidence in the morphology of the geo-feature. Confidence in the maps of the English Channel Outburst feature in the site is high

The blue text represents the previous assessment score

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

Table 10: Summary of JNCC's conservation advice for features in East Meridian (Eastern Side) rMCZ

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F[22])	General Management Approach advised (MCZ Conservation Objective Guidance)[32]	Rationale for conservation advice
East Meridian (Eastern Side) rMCZ (BS29.2)	**Moderate energy circalittoral rock**	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicates boat dredging, beam and otter trawling activity occurring over the mapped extent. Due to the feature's moderate-high sensitivity to the pressures associated with benthic trawling JNCC advises a Recover objective. This feature is also considered to be experiencing low exposure to associated pressures from infrastructure (Cable and wrecks).
	Subtidal coarse sediment	**Low** *(*)*	**Recover** *(*)*	
	Subtidal sand	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) indicates boat dredging, beam and otter trawling activity occurring over the mapped extent. Due to the feature's moderate-high sensitivity to the pressures associated with benthic trawling JNCC continues to advise a Recover objective (as per JNCC 2012 advice).
	Subtidal mixed sediments	**Low** *(Low)*	**Recover** *(Recover)*	
	Ross worm (*Sabellaria spinulosa*) reefs	**Not Assessed** *(Low)*	**Not Assessed** *(*)*	N/A
	Undulate ray (*Raja undulata*)	**Not Assessed** *(*)*	**Not Assessed** *(*)*	Undulate ray (*Raja undulata*) are a highly mobile species and there is a lack of evidence to demonstrate any site within the offshore area is essential to the species life cycle or life history. Consequently no further advice is provided for this feature.
	English Channel outburst flood features (Quaternary fluvio-glacial erosion features)	**Not Assessed** *(*)*	**Maintain** *(*)*	N/A

The blue text represents the previous assessment score

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

Table 11: East Meridian (Eastern Side) rMCZ feature risk assessment

Site (code)	Feature	Current risk	Future risk
East Meridian (Eastern Side) rMCZ (BS29.2)	**Moderate energy circalittoral rock**	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to the removal of non-target species
	Subtidal coarse sediment	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), surface abrasion, damage to seabed surface features and physical removal (extraction of substratum).
	Subtidal sand	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to physical removal (extraction of substratum).
	Subtidal mixed sediments	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical change (to another seabed type), physical loss (to land or freshwater habitat), penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration, physical removal (extraction of substratum), introduction of microbial pathogens, introduction or spread of non-indigenous species and removal of non-target species.
	Ross worm (*Sabellaria spinulosa*) reefs	**Not Assessed**	
	Undulate ray (*Raja undulata*)	**Not Assessed**	
	English Channel outburst flood features (Quaternary fluvio-glacial erosion features)	**Not Assessed** - geological/geomorphological feature	

Table 12: East Meridian (Eastern Side) rMCZ feature data sufficiency assessment and additional conservation / ecological considerations

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	Q2a: Does the feature fill a '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
East Meridian (Eastern Side) rMCZ (BS29.2)	**Moderate energy circalittoral rock**	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** the feature is already adequately protected within the region.	**Yes** (Future risk)	**Conservation benefits support priority feature designation** - however JNCC advise that Defra do not designate this feature as there are no ground-truth data to support the feature occurring in the site
	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**	**Yes –** the feature is not adequately protected within the region however it is not mapped in any viable patch size to occur within the site and so it's contribution to the MPA network is unknown	**Yes** (Current and future risk)	**Conservation benefits support priority feature designation** - however JNCC advise that Defra do not designate this feature in this site as there are very limited data to support the feature and survey work has not identified a mapped extent for the feature
	Subtidal mixed sediments	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No** – while there is an adequacy gap for this habitat in the region, there is low confidence in feature presence	**Yes** (Current risk)	**Conservation benefits support priority feature designation** - however JNCC advise that Defra

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	Q2a: Does the feature fill a '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
								do not designate this feature in this site as there are very limited data to support the feature and survey work has not identified a mapped extent for the feature
	English Channel outburst flood features (Quaternary fluvio-glacial erosion features)	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			

Table 13: East Meridian (Eastern Side) rMCZ site level assessment

Question	Response
Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?	No
Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?	99.4%
Q3: Does this site fill a 'gap' in the network based on revised confidence assessments in feature presence and extent?	Yes – for Subtidal coarse sediment in the Eastern Channel CP2 region. Currently 8.5% of the feature is designated within MPAs (the minimum ENG target is 17%). This site would add 1.5% to the target,

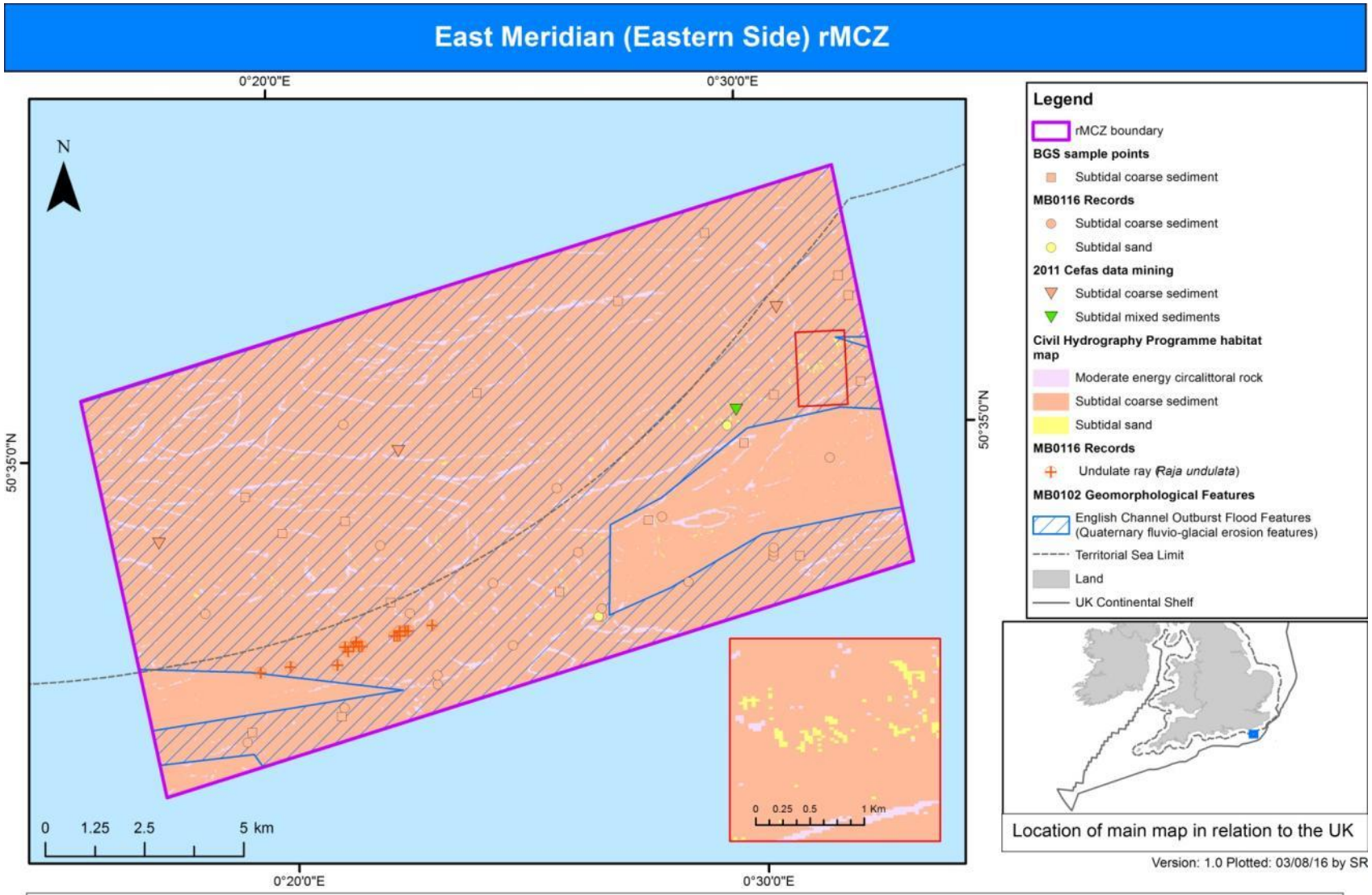

Figure 3: Map of broad scale habitats, species Features of Conservation Importance and geological feature in East Meridian (Eastern Side) rMCZ

3.4 East of Haig Fras MCZ

East of Haig Fras MCZ was designated in 2013 for **Moderate energy circalittoral rock, Subtidal coarse sediment/Subtidal mixed sediments habitat mosaic** and **Subtidal sand.** In 2014 and 2015, JNCC advised on the designation of **Subtidal mud** and this feature was designated to the site designation order in January 2016.

Data from an MB0120 survey in 2013 found evidence of **High energy circalittoral rock.** This feature was included in JNCC's 2015 advice, but was not designated during Tranche Two as it had not been subject to formal public consultation. In May 2015, a JNCC monitoring survey visited East of Haig Fras MCZ. The data indicate the presence of the species FOCI **Fan mussel (*Atrina fragilis*)** and the habitat FOCI **Sea-pen and burrowing megafauna communities** within the site. The MB0120 survey also recorded **Fan mussel (*Atrina fragilis*)** in 2013, however this data has not previously been used in advice[37].

The decision tree process (Annex 1) was used to determine any requirement for revisions to our existing advice (2015[2]) in light of any new data. New advice has been provided for **Sea-pen and burrowing megafauna communities** and **Fan mussel (*Atrina fragilis*).**

[37] Although a species of *Atrina* was recorded in 2013, it has not previously been advised on because JNCC were awaiting confirmation from Cefas that this was *Atrina fragilis.*

Table 14: East of Haig Fras MCZ Evidence Assessment Summary

	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 (FS 07)	**High energy circalittoral rock**	**High** (High)	There are no new data available pertaining the presence of the feature. The decision tree process was used and therefore no new advice is required.	**Moderate** (Moderate)	There are no new data available pertaining the extent of the feature. The decision tree process was used and therefore no new advice is required.
	Sea-pen and burrowing megafauna communities	**High** (*)	There are records of burrows noted from 30 tows. Burrow densities meet the threshold for the feature in five sections of video. Therefore confidence in feature presence is High.	**Low** (*)	There are records of burrows noted from 30 video tows which are widely dispersed through the site. Only ten videos have been analysed for the presence of the habitat FOCI. As the extent of the feature cannot be determined beyond these records, confidence in extent is Low.
	Fan mussel (*Atrina fragilis*)	**High** (*)	There are 87 records of the species in video tows and stills from 76 stations. Confidence in the presence of the feature is therefore High.	**High** (*)	There are a large number of records and they have all been collected within the last six years (2013 and 2015). The records suggest that the species mainly occurs in the south east of the site. As the distribution of the species can be estimated using the available data, confidence in the extent of the species is High.

The blue text represents the previous assessment score

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

Table 15: 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[22])	General Management Approach advised (MCZ Conservation Objective Guidance[32])	Rationale for conservation advice
East of Haig Fras MCZ (FS07)	**High energy circalittoral rock**	**Low** *(Low)*	**Recover** *(Recover)*	No new activities information is available to suggest a change in previously advised Recover GMA.
	Sea pen and burrowing megafauna communities	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicate benthic trawling occurs throughout the site. The feature is considered moderately sensitive to this activity due to associated pressures. The feature was assessed as having moderate to high vulnerability to benthic trawling and a recover objective is advised.
	Fan Mussel (*Atrina fragilis*)	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicate benthic trawling occurs throughout the site. The feature is considered moderately sensitive to this activity due to associated pressures. The feature was assessed as having moderate to high vulnerability to benthic trawling and a recover objective is advised. The feature is also considered to be exposed to pressures from infrastructure (cables) which it is considered to be moderately vulnerable to.

The blue text represents the previous assessment score

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

Table 16: East of Haig Fras MCZ rMCZ feature risk assessment

Site (code)	Feature	Current risk	Future risk
East of Haig Fras MCZ (FS07)	**High energy circalittoral rock**	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), physical change (to another seabed type), low and high siltation rate changes, penetration and/or disturbance of the substrate below the surface and penetration, surface abrasion: damage to seabed surface features, physical removal (extraction of substratum) and removal of target species.
	Sea-pen and burrowing megafauna communities	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to organic enrichment.
	Fan mussel (*Atrina fragilis*)	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), siltation rate changes (high), penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration, physical removal (extraction of substratum), introduction or spread of non-indigenous species and removal of non-target species.

Table 17: East of Haig Fras MCZ feature data sufficiency assessment and additional conservation / ecological considerations

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	Q2a: Does the feature fill a '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
East of Haig Fras MCZ (FS07)	**High energy circalittoral rock**	**Yes** (High confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**			
	Sea-pen and burrowing megafauna communities	**Yes** (High confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**Yes –** this habitat is not adequately replicated within the region	**Yes** (Future risk)	**Conservation benefits support priority feature designation**
	Fan mussel (*Atrina fragilis*)	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			

Table 18: 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?	N/A
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?	N/A
Q3: Does this site fill a 'gap' in the network based on revised confidence assessments in feature presence and extent?	**Yes –** for Sea-pen and burrowing megafauna communities and Fan mussel (*Atrina fragilis*) in the Western Channel & Celtic Seas CP2 region. Currently less than three replicates of both FOCI are designated as a feature of an MPA in the region and East of Haig Fras MCZ would help to fill these shortfalls in the CP2 region.

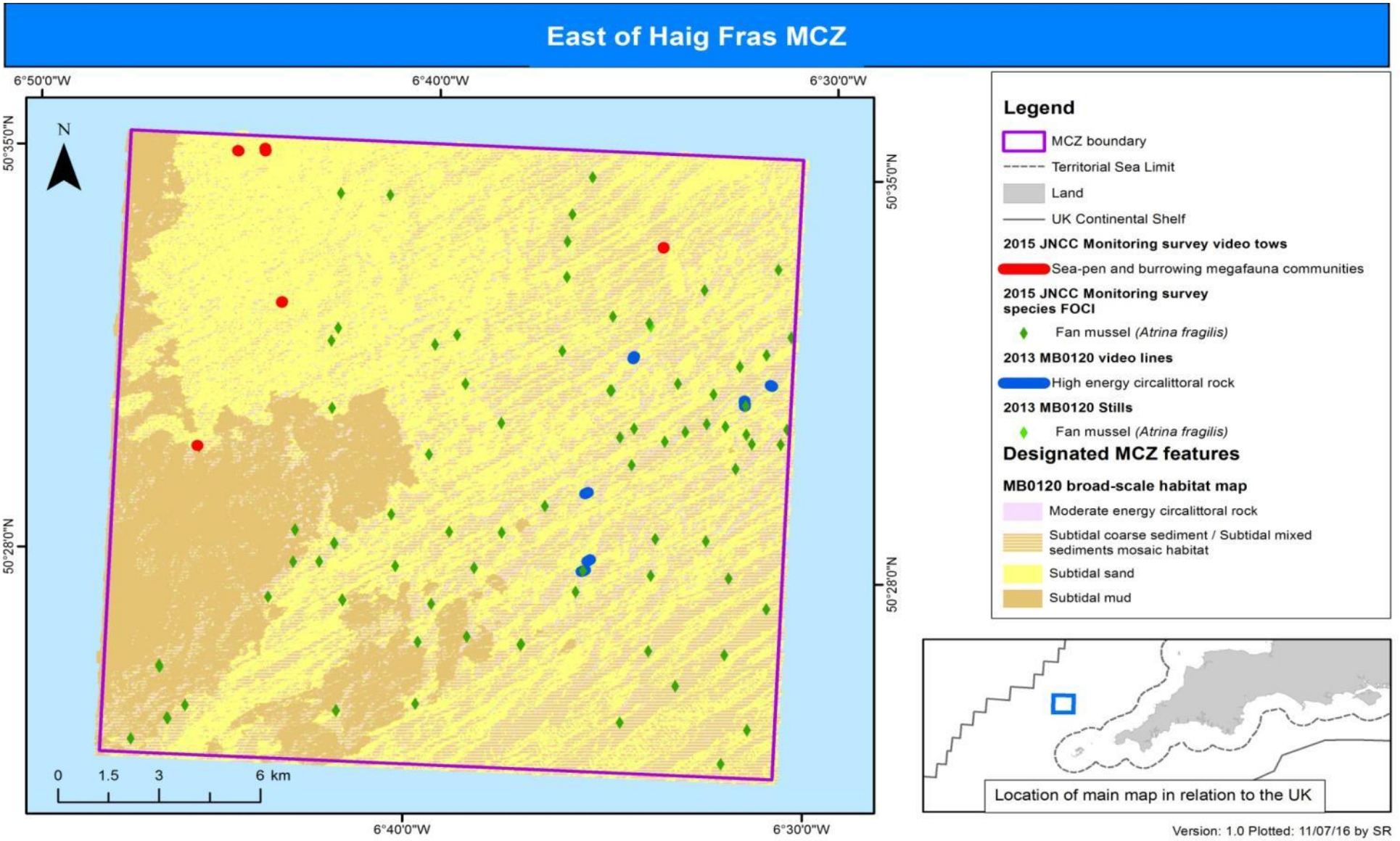

Figure 4: Map of broad scale habitats and species Features of Conservation Importance in East of Haig Fras MCZ

3.5 Holderness Offshore rMCZ

Holderness Offshore rMCZ was originally recommended for designation in 2011 by the Net Gain regional MCZ project for the broad-scale habitats **Subtidal coarse sediment** and **Subtidal mixed sediments**. The possible presence of the broad-scale habitat **Subtidal sand** and the habitat FOCI **Ross worm (*Sabellaria spinulosa*) reefs** were acknowledged in the regional MCZ project report[38] but neither were recommended for designation. Similarly, JNCC's 2012 advice only included **Subtidal coarse sediment** and **Subtidal mixed sediments**.

Due to additional data becoming available from surveys and data mining contracts, the present advice covers the broad-scale habitats; **High energy circalittoral rock**, **Moderate energy circalittoral rock, Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mud** and **Subtidal mixed sediments**, the habitat FOCIs **Horse mussel (*Modiolus modiolus*) beds** and **Ross worm (*Sabellaria spinulosa*) reefs** and the species FOCI **Ocean quahog (*Arctica islandica*)**. The geomorphological FOCI **North Sea Glacial Tunnel Valleys (Inner Silver Pit)** has also been advised on.

[38] Net Gain Regional Project MCZ report available at: http://webarchive.nationalarchives.gov.uk/20120502152849/http:/www.netgainmcz.org/index.php

Table 19: Holderness Offshore rMCZ 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
Holderness Offshore rMCZ (NG09)	**High energy circalittoral rock**	**Low** (*)	There are eight still images from three different video tows. There are no sections of continuous video supporting the presence of the feature which could be classified as meeting the minimum patch size. Therefore, confidence in feature presence is Low.	**Low** (*)	There are eight still images from three different video tows, but there are no sections of continuous video supporting the presence of the feature which meets minimum patch size criteria. The feature is also not supported by modelled maps. Therefore, confidence in feature extent is Low.
	Moderate energy circalittoral rock	**Moderate** (*)	Moderate confidence in the presence of the feature is supported by four sections of continuous video from three MB0120 tows[39]. EUSeaMap also indicates patches of the feature within the site.	**Low** (*)	Confidence in extent is advised as Low. This is because there are only a limited number of ground truth records supporting the presence of the feature, and these do not agree with the mapped habitats presented in EUSeaMap. In addition, the mapped patches of the feature from the modelled habitat map are contradicted by ground-truth records indicating the presence of sedimentary habitats.
	Subtidal coarse sediment	**High** (Moderate)	Presence of the feature is supported by 112 interpreted sediment samples from a range of surveys. EUSeaMap also suggests that the site is dominated by Subtidal coarse sediment.	**Moderate** (Moderate)	There are a large number of ground truth records that are well distributed throughout the site. However there is some uncertainty on the extent of this feature relative to Subtidal mixed sediments which are also present in the site. Based on the samples gathered through a Cefas MB0120 survey and BGS, expert judgement has been used to assign Moderate confidence in extent.
	Subtidal sand	**High** (*)	Nine interpreted sediment samples support the presence of the feature within the site. EUSeaMap also predicts patches of Subtidal sand occur within the site.	**Moderate** (*)	There are nine ground truth records of the feature and a modelled habitat map. The modelled patches are small but most contain a supporting ground-truth record from BGS. The ground-truth records are isolated from each other and occur throughout the site making it difficult to define the extent of the habitat. Therefore confidence in feature extent is Moderate.
	Subtidal mud	**Low** (*)	There is a single ground truth record from MB0120 to support the presence of the feature in the site. As a result, there is Low confidence in the presence of the feature	**Low** (*)	There is a single ground truth record from MB0120 to support the presence of the feature in the site. As a result, there is Low confidence in the extent of the feature

[39] Two sections of video which support the presence of Moderate energy circalittoral rock, do not meet the minimum requirement of one minute of continuous rock. Both sections did however contain continuous stretches of rock close to a minute in length. Given that the method of determining whether video tows observe rocky habitat is open to expert judgement and possible error due to uncertainties in the speed of the vessel, it was decided to use these records as evidence of the feature meeting the minimum patch size required to be a record of rock.

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** (Moderate)	Presence of the feature is supported by 40 interpreted sediment samples from a range of surveys. EUSeaMap also indicates large patches of Subtidal mixed sediments within the site	**Moderate** (Moderate)	There are a large number of ground truth records that are well distributed throughout the site. However there is some uncertainty on the extent of this feature relative to Subtidal coarse sediment which is also present in the site. Based on the samples from the Cefas MB0120 survey and BGS points, expert judgement has been used to assign Moderate confidence in extent.
	Horse mussel (*Modiolus modiolus*) beds	**Not assessed** (*)	There is a single grab sample which recorded 96 individual horse mussels. Identifying the presence of the habitat FOCI requires information on the age of individuals, associated communities and the area of the habitat[40]. The available data does not allow an assessment to be made against these criteria and it therefore cannot be determined whether there is a presence of a bed.	**Not assessed** (*)	There is a single grab sample which recorded 96 individual horse mussels. Identifying the presence of the habitat FOCI requires information on the age of individuals, associated communities and the area of the habitat. The available data does not allow an assessment to be made against these criteria and it therefore cannot be determined whether there is a presence of a bed
	Ross worm (*Sabellaria spinulosa*) reefs	**Low** (*)	A single sampling location was classified as Ross worm (*Sabellaria spinulosa)* reefs during the Humber REC survey based on expert judgement, but not using the standard reefiness criteria[41]. A habitat suitability model also suggests the potential presence of the feature within the site. Therefore confidence in feature presence is Low.	**Low** (*)	A single sampling location was classified as Ross worm (*Sabellaria spinulosa)* reefs during the Humber REC survey based on expert judgement but not using the standard reefiness criteria. A habitat suitability model also suggests the potential presence of the feature within the site. Therefore confidence in feature extent is Low.
	Ocean quahog *(Arctica islandica)*	**Moderate** (*)	The presence of the species is supported by three records. One of the records is less than six years old, while the other two are between six and 12 years old.	**Low** (*)	The records are all less than 12 years old; however there is little information on abundance and/or distribution. As there are so few records it is difficult to determine distribution of the species through the site. As a result, confidence in the distribution of the species is Low.
	North Sea Glacial Tunnel Valleys (Inner Silver Pit)	**High** (*)	Confidence in feature presence is a direct parallel to confidence in the morphology of the geomorphological-feature. Confidence in the maps of the feature in the site is High	**High** (*)	Confidence in feature extent is a direct parallel to confidence in the morphology of the geomorphological-feature. Confidence in the maps of the feature in the site is High

The blue text represents the previous assessment score

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

[40] Defining Annex I biogenic *Modiolus modiolus* reef habitat under the Habitats Directive: Report of an inter-agency workshop (2014). Available at http://jncc.defra.gov.uk/pdf/Report_531_web.pdf

[41] Defining and managing *Sabellaria spinulosa* reefs: Report of an inter-agency workshop (2007). Available at: http://jncc.defra.gov.uk/pdf/405_web.pdf

Table 20: Summary of JNCC's conservation advice for features in Holderness Offshore rMCZ

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F[22])	General Management Approach advised (MCZ Conservation Objective Guidance)[32]	Rationale for conservation advice
Holderness Offshore rMCZ (NG09)	**High energy circalittoral rock**	**Low** *(*)*	**Maintain** *(*)*	This feature is not exposed to benthic trawling activity or infrastructure and the advised GMA is therefore Maintain.
	Moderate energy circalittoral rock	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicate benthic trawling occurs throughout the site. This feature experiences low exposure to pressures associated with benthic trawling activity, and is considered as having moderate vulnerability to those pressures. This feature has minimal exposure to infrastructure (oil and gas) in the site.
	Subtidal coarse sediment	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) indicate benthic trawling occurs throughout the site. This feature experiences high exposure to pressures associated with benthic trawling activity and is considered as having high vulnerability to those pressures. The majority of the oil and gas related infrastructure occurs within the extent of this feature, along with wrecks distributed across the site exposing the feature to associated pressures. The feature is assessed as moderately / highly sensitive to these associated pressures and is at least moderately vulnerable to infrastructure. Based on the combined exposure to fishing activity and / or infrastructure the advised GMA for this feature is Recover.
	Subtidal sand	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicate benthic trawling occurs throughout the site. This feature experiences moderate exposure to pressures associated with benthic trawling activity, and is considered as having moderate vulnerability to those pressures. The infrastructure related to oil and gas (pipelines) intersects with this feature exposing it to associated pressures. The feature is assessed as highly sensitive to these associated pressures and is moderately vulnerable to infrastructure. Based on the combined exposure to fishing activity and / or infrastructure the advised GMA for this feature is Recover.
	Subtidal mud	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicate benthic trawling occurs throughout the site. This feature experiences moderate exposure to pressures associated with benthic trawling activity, and is considered as having moderate vulnerability to those pressures. Based on exposure to fishing activity the advised GMA for this feature is Recover.
	Subtidal mixed sediments	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) indicate benthic trawling occurs throughout the site. This feature experiences high exposure to pressures associated with benthic trawling activity, and is considered as having moderate / high vulnerability to those pressures. The majority of the oil and gas related infrastructure occurs within the potential extent of this feature, along with wrecks distributed across the site exposing the feature to associated pressures. The feature is assessed as highly sensitive to some associated pressures and is at least moderately vulnerable to infrastructure. Based on the combined exposure to fishing activity and / or infrastructure the advised GMA for this feature is Recover.
	Horse mussels (*Modiolus modiolus*) beds	**Not Assessed** *(*)*	**Not Assessed** *(*)*	The available data does not allow an assessment to be made regarding this feature's presence and extent within the site and is therefore not assessed for conservation advice.

	Ross worm (Sabellaria spinulosa) reefs	**Low** *(*)*	**Recover** *(*)*	This feature is not exposed to benthic trawling activity. The infrastructure related to oil and gas (pipelines) intersects with this feature exposing it to associated pressures. The feature is assessed as highly sensitive to these associated pressures and is moderately vulnerable to infrastructure. Based on the exposure to infrastructure the advised GMA for this feature is Recover.
	Ocean quahog (*Arctica islandica*)	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicate benthic trawling occurs throughout the site. This feature experiences moderate exposure to pressures associated with benthic trawling activity and is considered as having moderate / high vulnerability to those pressures. Based on exposure to fishing activity the advised GMA for this feature is Recover.
	North Sea Glacial Tunnel Valleys (Inner Silver Pit)	**High** *(*)*	**Maintain** *(*)*	For all geomorphological features the default GMA is set to Maintain

The blue text represents the previous assessment score

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

Table 21: Holderness Offshore rMCZ feature risk assessment

Site (code)	Feature	Current risk	Future risk
Holderness Offshore rMCZ (NG09)	**High energy circalittoral rock**	**Low** Feature is **not moderately or highly vulnerable** to any pressures.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), physical change (to another seabed type), low and high siltation rate changes, penetration and/or disturbance of the substrate below the surface and penetration, surface abrasion: damage to seabed surface features, physical removal (extraction of substratum) and removal of target species.
	Moderate energy circalittoral rock	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to the removal of non-target species.
	Subtidal coarse sediment	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling and infrastructure.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), surface abrasion: damage to seabed surface features and physical removal (extraction of substratum).
	Subtidal sand	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling and infrastructure.	**High** Feature is **highly sensitive** (with moderate/high confidence) to physical removal (extraction of substratum).

Site (code)	Feature	Current risk	Future risk
	Subtidal mud	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), organic enrichment and the removal of target and non-target species.
	Subtidal mixed sediments	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling, oil and gas extraction and infrastructure.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical change (to another seabed type), physical loss (to land or freshwater habitat), penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration, physical removal (extraction of substratum), introduction of microbial pathogens, introduction or spread of non-indigenous species and removal of non-target species.
	Ross worm reefs (Sabellaria spinulosa)	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with infrastructure.	**High** Feature is **highly sensitive** (with moderate/high confidence) to shallow abrasion/penetration: damage to seabed surface and penetration and the removal of non-target species.
	Horse mussel (*Modiolus modiolus)* beds	**Not Assessed**	
	Ocean quahog (*Arctica islandica*)	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration and physical removal (extraction of substratum).
	North Sea Glacial Tunnel Valleys (Inner Silver Pit)	**Not Assessed** - geological/geomorphological feature	

Table 22: Holderness Offshore rMCZ feature data sufficiency assessment and additional conservation / ecological considerations

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	Q2a: Does the feature fill a '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
Holderness Offshore rMCZ (NG09)	**High energy circalittoral rock**	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** the feature is already adequately protected within the region and has low confidence.	**No**	**Scientific evidence does not justify designation as this stage**
	Moderate energy circalittoral rock	**Yes** (Moderate confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** the feature is already adequately protected within the region.	**Yes** (Future risk)	**Feature should be further considered –** JNCC consider that there are sufficient data for the feature to be designated in the site, although it should be noted that the extent of the feature is unknown beyond ground-truthing data.
	Subtidal coarse sediment	**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	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No** – the feature is already adequately protected within the region and has low confidence.	**No**	**Scientific evidence does not justify designation as this stage**
	Subtidal mixed sediments	**Yes** (High confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**			
	Ross worm (*Sabellaria spinulosa*) reefs	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No** – this species is adequately replicated within the region	**Yes** (Future risk)	**Feature should be further considered –** JNCC advise that this feature should not be

								designated as there are limited data to support its presence in the site
	Ocean quahog (*Arctica islandica*)	**Yes** (Moderate confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**Yes** – this species is not adequately replicated within the region	**Yes** (Current and Future risk)	**Conservation benefits support priority feature designation**
	North Sea Glacial Tunnel Valleys (Inner Silver Pitt)	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			

Table 23: Holderness Offshore rMCZ site level assessment

Question	Response
Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?	No
Q2: Where this can be answered, what proportion of area do the features that meet Q1 in the 'Feature Assessment' above cover within the site?	99.9%
Q3: Does this site fill a 'gap' in the network based on revised confidence assessments in feature presence and extent?	Yes - for Subtidal mixed sediments and Ocean quahog (*Arctica islandica*) in the Southern North Sea CP2 region. Currently 10.5% of Subtidal mixed sediments is designated within MPAs (the minimum ENG target is 16%). This site would add 3.0% to the target, Furthermore there are currently less than three replicates of Ocean quahog (*Arctica islandica*) designated as a feature of an MPA in the region, The designation of this species in Holderness Offshore rMCZ would fill this shortfall in replication in the CP2 region.

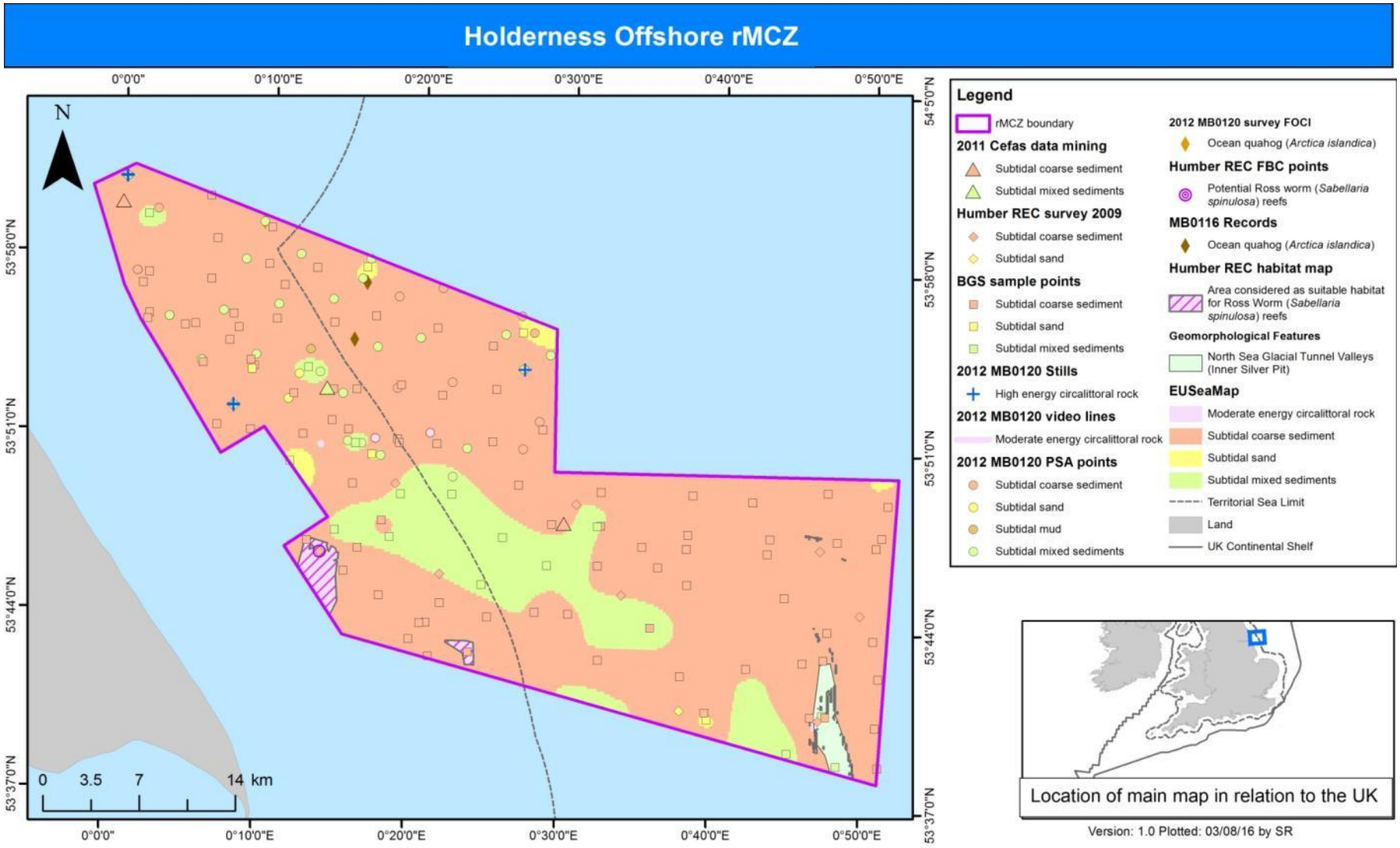

Figure 5: Map of broad scale habitats and species Features of Conservation Importance in Holderness Offshore rMCZ

3.6 Inner Bank rMCZ

Inner Bank rMCZ was originally recommended by the Balanced Seas regional MCZ project[34] for the broad-scale habitats **Moderate energy infralittoral rock**, **Moderate energy circalittoral rock**, **Subtidal coarse sediment** and **Subtidal sand.** The habitat Feature of Conservation Importance (FOCI) **Native Oyster beds** and species FOCI **Native Oyster (*Ostrea edulis)*** were also recommended by the regional MCZ project for designation in this site. JNCC's 2012 scientific advice on the regional MCZ project recommendation for Inner Bank rMCZ provided advice on these features.

An MB0120 survey was undertaken in 2014 and identified the broad-scale habitat features **Subtidal mud** and **Subtidal mixed sediments** as occurring in the site. This 2016 advice package updates our 2012 advice and provides advice on these additional features observed since 2012.

Table 24: Inner Bank rMCZ 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
Inner Bank rMCZ (BS31)	**Moderate energy infralittoral rock**	**No confidence** (Low)	JNCC have No confidence in the presence of this feature within the site as there is no direct evidence to verify its presence in the site. The habitat map used by the regional MCZ project to recommend this feature (UKSeaMap (2010) has been superseded by an MB0120 habitat map. The MB0120 map does not indicate the feature is present in the site and there are no further data to support its presence in the site.	**No confidence** (Low)	JNCC have no confidence in the presence of this feature within the site as there is no direct evidence to verify its presence in the site. The habitat map used by the regional MCZ project to recommend this feature (UKSeaMap (2010) has been superseded by an MB0120 habitat map. The MB0120 map does not indicate the feature is present in the site and there are no further data to support its extent in the site.
	Moderate energy circalittoral rock	**Moderate** (Low)	Three instances of one minute continuous video on a single tow provide ground-truthing records to verify the presence of Moderate energy circalittoral rock in the centre of the site. There is no mapped extent of this feature within the MB0120 habitat map so Moderate confidence is advised based on expert judgement.	**Low** (Low)	Moderate energy circalittoral rock is not mapped in the MB0120 habitat map despite there being three ground-truthing records available for the feature. JNCC therefore have Low confidence in the extent of this feature in the site as there is no mapped extent and the point data overlay area mapped as sedimentary habitat.
	Subtidal coarse sediment	**High** (Low)	Multiple (36) ground-truth data points confirm the presence of this feature within the site.	**High** (Low)	There are multiple (36) ground truth points well distributed throughout the site. The majority of data points correlate with the MB0120 habitat map, however there are some Subtidal sand and Subtidal mixed sediments data points that conflict with the mapped area of the feature. Community analysis of MB0120 data show the presence of communities associated with Subtidal coarse sediment over the mapped extent of the feature. Based on the high number of PSA data points that are distributed across the mapped area of the feature, and the supporting community analysis data, High confidence in extent is advised.
	Subtidal sand	**High** (Moderate)	Multiple (49) ground-truth data points confirm the presence of this feature within the site.	**High** (Moderate)	Multiple (49) ground truth records are well distributed throughout the site. Most of these records are located across the areas mapped as Subtidal sand. However, some ground truth data points show Subtidal coarse sediment and Subtidal mixed sediments are present in the mapped extent of Subtidal sand. Community analysis of MB0120 data show the presence of communities associated with Subtidal sand over the mapped extent of the feature. Based on the high number of PSA data points that are distributed across the mapped area of the feature, and the supporting community analysis data, high confidence in extent is advised.

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 mud	**Low** (*)	One ground-truth sample point verifies the presence of this feature within the site.	**Low** (*)	A single ground-truth data point is available to support the feature. Whilst this agrees with the mapped extent of the feature, a Low confidence score for extent has been assigned due to the lack of ground truthing data available.
	Subtidal mixed sediments	**High** (*)	Multiple (16) ground-truth data points confirm the presence of this feature within the site.	**High** (*)	Multiple (16) ground-truthing data support a modelled extent of this feature in the site. However, some PSA data points show Subtidal coarse sediment and Subtidal sand are present in the mapped extent of Subtidal mixed sediments. Community analysis of MB0120 PSA data show the presence of communities associated with Subtidal mixed sediments over the mapped extent of the feature. Based on the number of PSA data points that are distributed across the mapped area of the feature, and the supporting community analysis data, high confidence in extent is advised.
	Native oyster beds	**Not assessed** (No confidence)	A single record of an individual native oyster specimen exists for the site. There is no evidence of a native oyster bed being present.	**Not assessed** (No confidence)	This feature has not been assessed due to there being no evidence of a native oyster bed being present in the site.
	Native oyster (*Ostrea edulis*)	**Low** (No confidence)	There a single record of this feature in the site identified in a 1999 beam trawl survey. The location has since been surveyed repeatedly with no further observations made to support the feature's presence. JNCC advise Low confidence in the presence of this feature in the site.	**Low** (No confidence)	JNCC have Low confidence in the presence of this feature in the site and therefore equally have Low confidence in the distribution of the feature in Inner Bank rMCZ.

The blue text represents the previous assessment score

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

Table 25: Summary of JNCC's conservation advice for features in Inner Bank rMCZ

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F[22])	General Management Approach advised (MCZ Conservation Objective Guidance[32])	Rationale for conservation advice
Inner Bank rMCZ (BS31)	**Moderate energy infralittoral rock**	**Not Assessed** *(Not Assessed)*	**Not Assessed** *(Not Assessed)*	N/A
	Moderate energy circalittoral rock	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) indicate benthic trawling (beam & otter trawling) occurs throughout the site. Less trawling effort is recorded within the mapped extent of this feature; however it is still considered a high enough exposure to advise a GMA of Recover.
	Subtidal coarse sediment	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) indicate benthic trawling (beam & otter trawling) occurs throughout the site. The highest level of effort occurs over mapped extent of this feature. The feature is considered to be moderately sensitive to associated pressures (surface abrasion) and assessed as having moderate to high vulnerability. The feature is also considered to be experiencing low exposure to associated pressures with infrastructure (cables and wrecks), to which it is considered sensitive. Based on the combined exposure to fishing and infrastructure the advised GMA for this feature is Recover.
	Subtidal sand	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) indicate benthic trawling (beam & otter trawling) occurs throughout the site. The highest level of effort occurs over mapped extent of this feature. The feature is considered to be moderately sensitive to associated pressures (surface abrasion) and assessed as having moderate to high vulnerability. The feature is also considered to be experiencing low exposure to associated pressures with infrastructure (cables and wrecks), to which it is considered sensitive. Based on the combined exposure to fishing and infrastructure the advised GMA for this feature is Recover.
	Subtidal mud	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicate benthic trawling (beam & otter trawling) occurs throughout the site. Less trawling effort is recorded within the mapped extent of this feature; however it is still considered a high enough exposure to advise a GMA of Recover.
	Subtidal mixed sediments	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicate benthic trawling (beam & otter trawling) occurs throughout the site. The highest level of effort occurs over mapped extent of this feature. The feature is considered to be moderately sensitive to associated pressures (surface abrasion) and assessed as having moderate to high vulnerability. The feature is also considered to be experiencing low exposure to associated pressures with infrastructure (cables and wrecks), to which it is considered sensitive. Based on the combined exposure to fishing and infrastructure the advised GMA for this feature is Recover.
	Native oyster beds	**Not Assessed** *(Not Assessed)*	**Not Assessed** *(Not Assessed)*	N/A
	Native oyster (*Ostrea edulis*)	**Low** *(Low)*	**Recover** *(Recover)*	The feature is considered moderately to highly sensitive to pressures associated with benthic trawling. Aggregated VMS data (2009-2013) indicate benthic trawling occurs throughout the site. The feature was assessed as having moderate to high vulnerability to benthic trawling and a recover GMA is advised.

The blue text represents the previous assessment score

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

Table 26: Inner Bank rMCZ feature risk assessment

Site (code)	Feature	Current risk	Future risk
Inner Bank rMCZ (BS31)	**Moderate energy infralittoral rock**	**Not assessed**	
	Moderate energy circalittoral rock	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to the removal of non-target species.
	Subtidal coarse sediment	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), surface abrasion: damage to seabed surface features and physical removal (extraction of substratum).
	Subtidal sand	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to physical removal (extraction of substratum).
	Subtidal mud	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), organic enrichment and the removal of target and non-target species.
	Subtidal mixed sediments	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical change (to another seabed type), physical loss (to land or freshwater habitat), penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration, physical removal (extraction of substratum), introduction of microbial pathogens, introduction or spread of non-indigenous species and removal of non-target species.
	Native oyster beds	**Not assessed**	
	Native Oyster (*Ostrea edulis*)	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to physical change (to another seabed type), removal of target species, introduction of microbial pathogens and introduction or spread of non-indigenous species.

Table 27: Inner Bank rMCZ feature data sufficiency assessment and additional conservation / ecological considerations

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	Q2a: Does the feature fill a '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
Inner Bank rMCZ (BS31)	**Moderate energy circalittoral rock**	**Yes** (Moderate confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** the feature is already adequately protected within the region	**Yes** (Current risk)	**Feature should be further considered** – however JNCC advise that Defra do not designate this feature in this site as there are very limited data to support the feature and survey work has not identified a mapped extent for the 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	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** although the feature is not adequately protected within the region, confidence is low in feature presence.	**Yes** (Current risk)	**Feature should be further considered - the feature is at high risk of damage and is not adequately protected in the region, so although only one ground-truthing point confirms its presence, JNCC would still advise that this feature is designated.**

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	Q2a: Does the feature fill a '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
	Subtidal mixed sediments	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			
	Native oyster (*Ostrea edulis*)	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** the feature is already replicated within the region.	**Yes** (Future risk)	**Feature should be further considered** – however JNCC advise that this feature should not be designated as only a single record is available to support the species occurring in the site, despite further survey work

Table 28: Inner Bank rMCZ site level assessment

Question	Response
Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?	N/A
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?	99.2%
Q3: Does this site fill a 'gap' in the network based on revised confidence assessments in feature presence and extent?	Yes - for Subtidal coarse sediment, Subtidal sand, Subtidal mud and Subtidal mixed sediments in the Eastern Channel CP2 region. Currently 8.5% of Subtidal coarse is designated within MPAs (the minimum ENG target is 17%). The site would add 0.3% to the target. Additionally, 3.5% of Subtidal sand is designated within MPAs (the minimum ENG target is 15%). The site would add 3.6% to the target. Also, 1.9% of Subtidal mud is designated within MPAs (the minimum ENG target is 15%). The site would add 0.1% to the target. And finally, 8.9% of Subtidal mixed sediments is designated within MPAs (the minimum ENG target is 16%). This site would add 1.9% to the target.

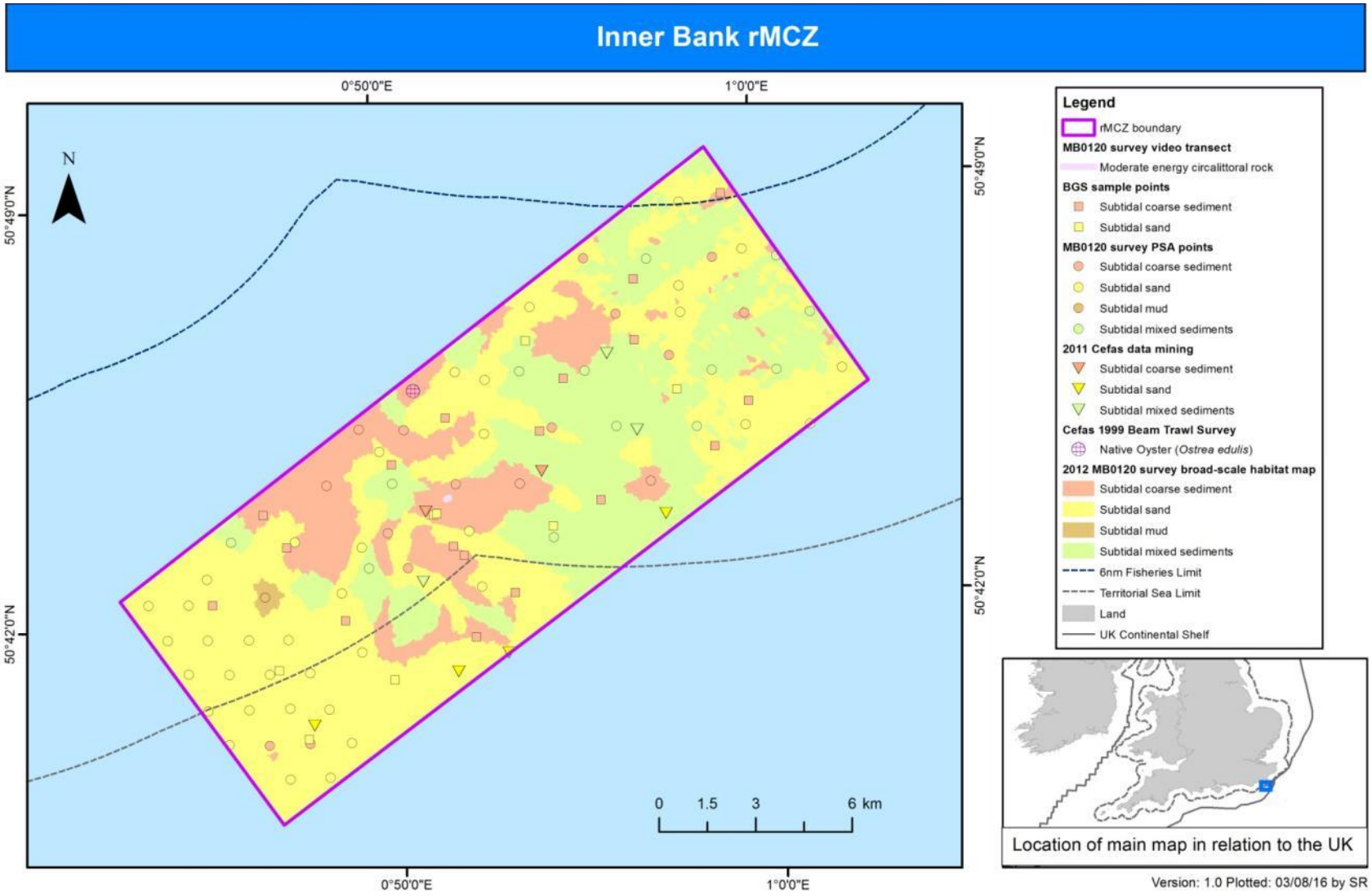

Figure 6: Map of broad scale habitats and species Features of Conservation Importance in Inner Bank rMCZ

3.7 Markham's Triangle rMCZ

Markham's Triangle rMCZ was recommended by the Net Gain regional MCZ project[38] for the broad-scale habitats **Subtidal coarse sediment** and **Subtidal sand.**

Additional data were gathered within this site as part of an MB0120 survey in 2012[42]. The survey collected grabs, video tows and camera stills, and full coverage acoustic data. Further features to those recommended by the regional MCZ project were identified within the site: **Subtidal mud** and **Subtidal mixed sediments**. The ground-truth data from the 2012 MB0120 survey data support the presence of **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mud** and **Subtidal mixed sediments** features, which are all advised on in the present advice package. These data were used to produce a full coverage habitat map of Markham's Triangle rMCZ.

[42] Markham's Triangle MCZ Summary Site Report. Available at: http://randd.defra.gov.uk/Document.aspx?Document=12836_MarkhamsTrianglerMCZSummarySiteReport_v6.pdf

Table 29: Markham's Triangle rMCZ Evidence Assessment Summary

Site (NG07)	Feature	Evidence Assessment Results			
		Confidence in presence	Rationale for confidence in Feature presence	Confidence in extent	Rationale for confidence in Feature extent
Markham's Triangle rMCZ (NG07)	**Subtidal coarse sediment**	**High** (Moderate)	High confidence in the presence of Subtidal coarse sediment is supported by a full coverage habitat map from survey with 35 supporting ground-truth sample data from BGS and the MB0120 survey.	**High** (Moderate)	Interpreted ground-truth data are well distributed through the site. There is also a full coverage habitat map from survey that corresponds well with the ground-truth data. Therefore confidence in feature extent has been assessed as high.
	Subtidal sand	**High** (Moderate)	High confidence in the presence of Subtidal sand is supported by a full coverage habitat map from survey with 11 supporting ground-truth sample data from BGS and the MB0120 survey.	**High** (Low)	Interpreted ground-truth data are well distributed through the site. There is also a full coverage habitat map from survey that corresponds well with the ground-truth data. Therefore confidence in feature extent has been assessed as high.
	Subtidal mud	**High** (*)	High confidence in the presence of Subtidal mud is supported by a full coverage habitat map from survey with three supporting ground-truth sample data from the MB0120 survey.	**High** (*)	Interpreted ground-truth data are well distributed through the site. There is also a full coverage habitat map from survey that corresponds well with the ground-truth data. Therefore confidence in feature extent has been assessed as high.
	Subtidal mixed sediments	**High** (*)	High confidence in the presence of Subtidal mixed sediments is supported by a full coverage habitat map from survey with 14 supporting ground-truth sample data from the MB0120 survey.	**High** (*)	Interpreted ground-truth data are well distributed through the site. There is also a full coverage habitat map from survey that corresponds well with the ground-truth data. Therefore confidence in feature extent has been assessed as high.

The blue text represents the previous assessment score

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

Table 30: Summary of JNCC's conservation advice for features in Markham's Triangle rMCZ

Site (NG07)	Feature	Confidence in Feature condition (MCZ Technical Protocol F[22])	General Management Approach advised (MCZ Conservation Objective Guidance[32])	Rationale for conservation advice
Markham's Triangle rMCZ (NG07)	**Subtidal coarse sediment**	**Low** *(Low)*	**Recover** *(Recover)*	VMS data from 2009-13 indicates moderate to high levels of benthic trawling activity across the site, in particular from beam trawling. Highest levels of effort are located within the mapped extent of this feature. JNCC continues to advise Recover due to the exposure to pressures associated with benthic trawling.
	Subtidal sand	**Low** *(Low)*	**Recover** *(Recover)*	
	Subtidal mud	**Low** *(*)*	**Recover** *(*)*	VMS data from 2009-13 indicates moderate to high levels of benthic trawling activity across the site, in particular from beam trawling. The feature is considered to be moderately to highly sensitive to pressures associated with benthic trawling. JNCC advises Recover as the GMA.
	Subtidal mixed sediments	**Low** *(*)*	**Recover** *(*)*	

The blue text represents the previous assessment score

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

Table 31: Markham's Triangle rMCZ feature risk assessment

Site (NG07)	Feature	Current risk	Future risk
Markham's Triangle rMCZ (NG07)	**Subtidal coarse sediment**	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), surface abrasion: damage to seabed surface features and physical removal (extraction of substratum).
	Subtidal sand	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to physical removal (extraction of substratum).
	Subtidal mud	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), organic enrichment and the removal of target and non-target species.
	Subtidal mixed sediments	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical change (to another seabed type), physical loss (to land or freshwater habitat), penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration, physical removal (extraction of substratum), introduction of microbial pathogens, introduction or spread of non-indigenous species and removal of non-target species.

Table 32: Markham's Triangle rMCZ feature data sufficiency assessment and additional conservation / ecological considerations

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	Q2a: Does the feature fill a '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
Markham's Triangle rMCZ (NG07)	**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**			

Table 33: Markham's Triangle rMCZ site level assessment

Question	Response
Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?	N/A
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?	100%
Q3: Does this site fill a 'gap' in the network based on revised confidence assessments in feature presence and extent?	Yes - for Subtidal mixed sediments in the Southern North Sea CP2 region. Currently 10.5% of Subtidal mixed sediments is designated within MPAs (the minimum ENG target is 16%). This site would add 0.7% to the target.

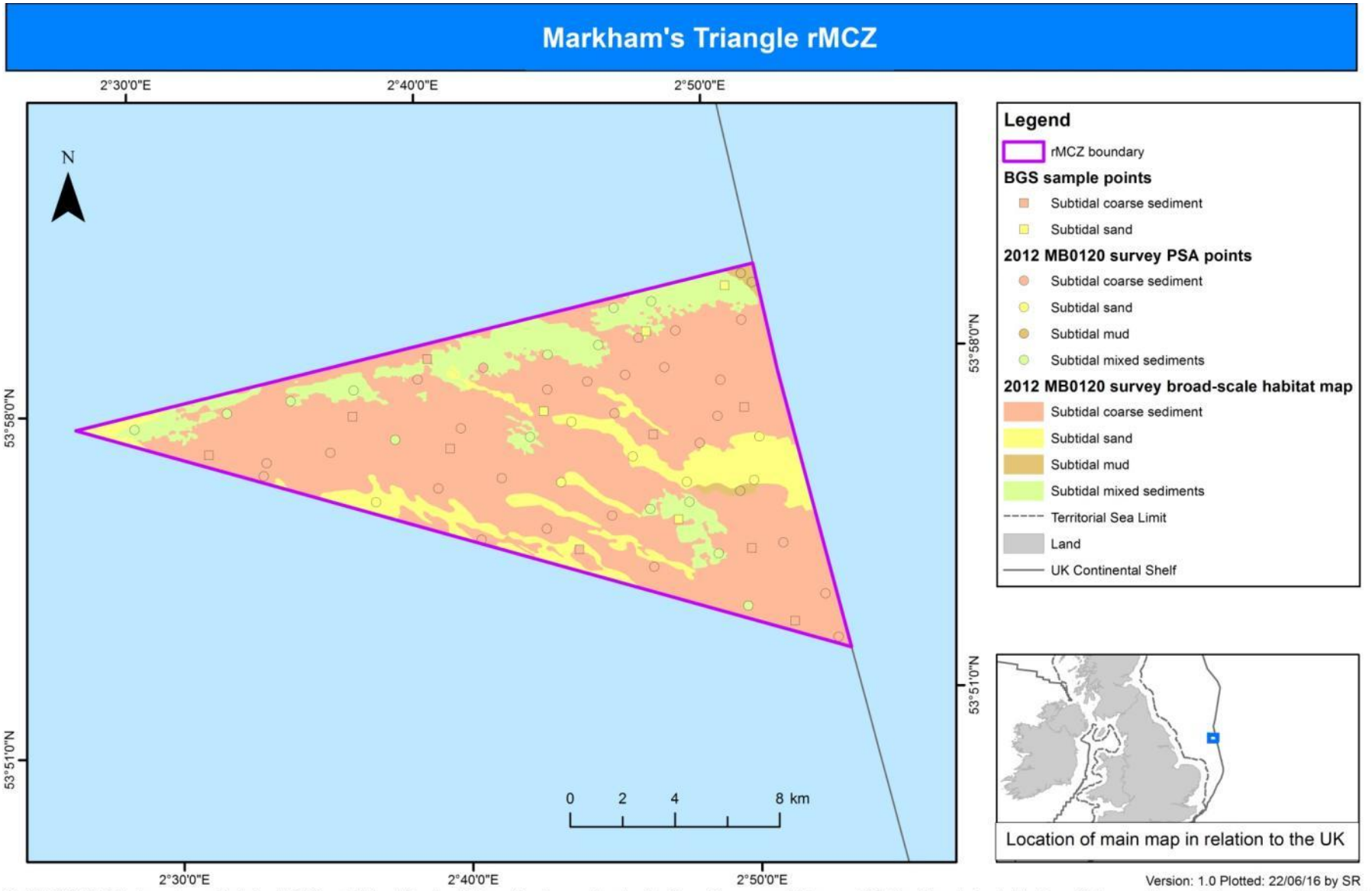

Figure 7: Map of broad scale habitats in Markham's Triangle rMCZ

3.8 Mud Hole rMCZ

Mud Hole rMCZ was recommended by the Irish Sea Conservation Zones regional MCZ project[43] for the following three features; the broad-scale habitat **Subtidal mud** and two habitat Features of Conservation Importance - **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities**. Mud habitats in deep water are no longer considered a protected feature for MCZs and therefore this feature is not considered further within this advice[44].

In 2012 an MB0120 survey collected further evidence for Mud Hole rMCZ[45]. The survey confirmed the presence of the features recommended for the site and a new habitat map was developed from these survey data, which included multiple ground-truth validation points.

As part of JNCC's scientific advice to Defra in July 2014, all features with supporting data or recommended by the regional MCZ project for Mud Hole rMCZ were advised upon. Following JNCC's 2014 advice, a decision was made by Defra to not designate Mud Hole rMCZ through Tranche Two. The site however is now being further advised on in Tranche Three in order to consider this site for filling ecological gaps in the MPA network. JNCC assessed the requirement to revise our existing advice in light of any new data available for the features of the site. The assessment followed the JNCC MCZ decision tree process (Annex 1).

[43] Irish Sea Conservation Zones regional MCZ project report. Available at: http://webarchive.nationalarchives.gov.uk/20120502154706/http:/www.irishseaconservation.org.uk/
[44] JNCC and Natural England Review of the MCZ Features of Conservation Importance (2016): http://jncc.defra.gov.uk/pdf/20160512_MCZReviewFOCI_v7.0.pdf
[45] Mud Hole rMCZ Summary Site Report (2012) Available from: http://randd.defra.gov.uk/Document.aspx?Document=12844_MudHolerMCZ_SummarySiteReport_V10.pdf

Table 34: Mud Hole rMCZ 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
Mud Hole rMCZ (ISCZ01)	**Subtidal mud**	**High** (High)	There are no new data available since JNCC's previous advice. JNCC continues to have High confidence in the presence of the feature due to the volume of supporting data and high resolution habitat map. No revised advice is required.	**High** (High)	There are no new data available since JNCC's previous advice. JNCC continues to have High confidence in the extent due to the volume of supporting data and high resolution habitat map. No revised advice is required.
	Sea-pen and burrowing megafauna communities	**High** (High)	There are no new data available since JNCC's previous advice. JNCC continues to have High confidence in the presence of the feature due to the volume of supporting data and high resolution habitat map (submitted in the 2014 advice). No revised advice is required.	**High** (High)	There are no new data available since JNCC's previous advice. JNCC continues to have High confidence in the extent due to the volume of supporting data and high resolution habitat map (submitted in the 2014 advice). No revised advice is required.

The blue text represents the previous assessment score

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

Table 35: Summary of JNCC's conservation advice for features in Mud Hole rMCZ

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F[22])	General Management Approach advised (MCZ Conservation Objective Guidance[32])	Rationale for conservation advice
Mud Hole rMCZ (ISCZ01)	**Subtidal mud**	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) broadly agrees with number of hours presented in gridded 2006-09 VMS data for bottom contacting gears coincident with the feature. No revised GMA required – Recover GMA still advised.
	Sea-pen and burrowing megafauna communities	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) broadly agrees with number of hours presented in gridded 2006-09 VMS data for bottom contacting gears coincident with the feature. No revised GMA required – Recover GMA still advised.

The blue text represents the previous assessment score

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

Table 36~: Mud Hole rMCZ feature risk assessment

Site (code)	Feature	Current risk	Future risk
Mud Hole rMCZ (ISCZ01)	**Subtidal mud**	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), organic enrichment and the removal of target and non-target species.
	Sea-pen and burrowing megafauna communities	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to organic enrichment.

Table 37: Mud Hole rMCZ feature data sufficiency assessment and additional conservation / ecological considerations

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	Q2a: Does the feature fill a '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
Mud Hole rMCZ (ISCZ01)	**Subtidal mud**	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			
	Sea-pen and burrowing megafauna communities	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			

Table 38: Mud Hole rMCZ site level assessment

Question	Response
Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?	N/A
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?	100%
Q3: Does this site fill a 'gap' in the network based on revised confidence assessments in feature presence and extent?	Yes - for Subtidal mud in the Irish Sea CP2 region. Currently 10.8% of Subtidal mud is designated within MPAs in the Secretary of State waters part of the CP2 region (the minimum ENG target is 15%). The site would add 1.8% to the target.

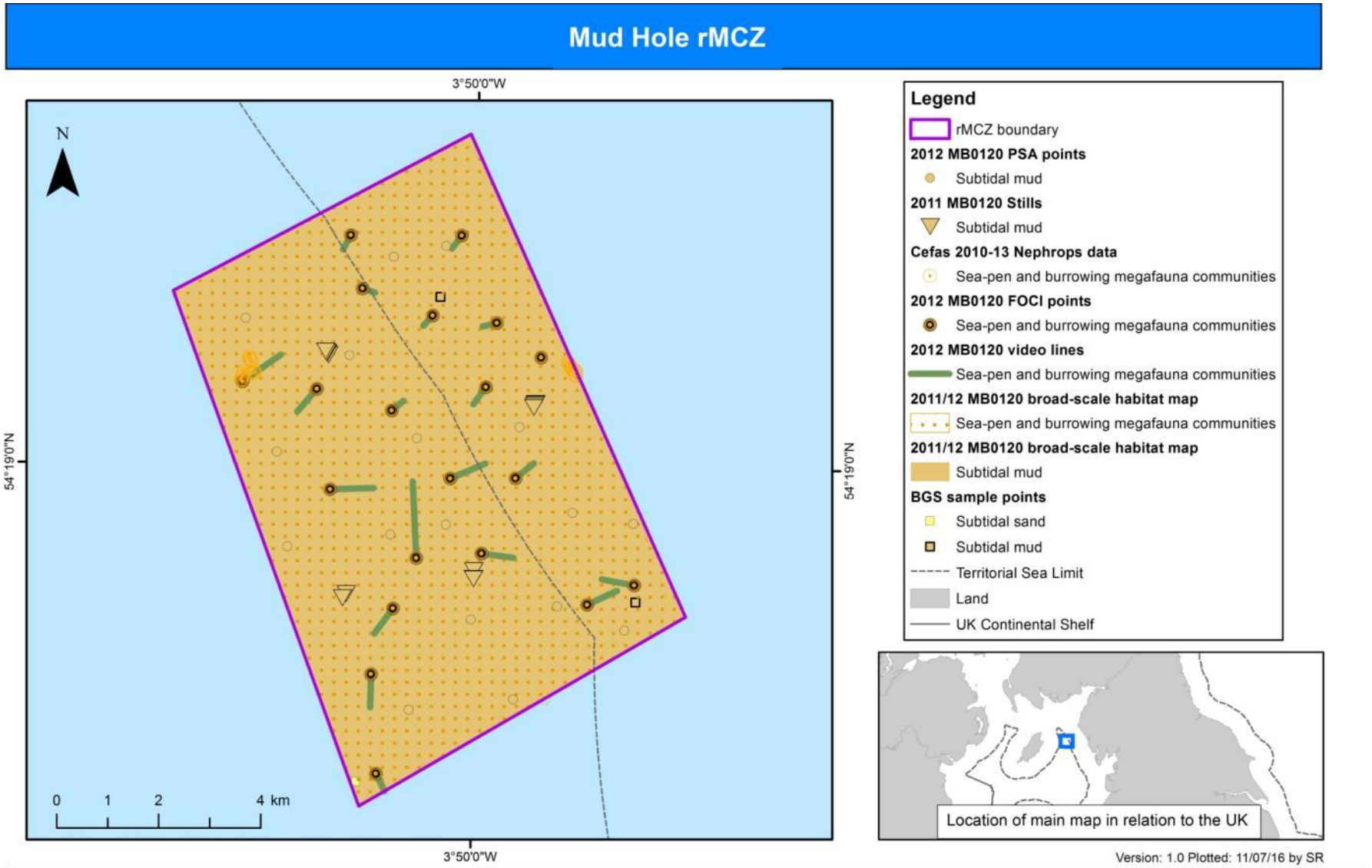

Figure 8: Map of broad scale habitats and species Features of Conservation Importance in Mud Hole rMCZ

3.9 North-East of Haig Fras rMCZ

North-East of Haig Fras MCZ was recommended by the Finding Sanctuary regional MCZ project[46] for the broad-scale habitats **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mud**, and **Subtidal mixed sediments**. JNCC has not provided scientific advice on the features found within North-East of Haig Fras MCZ since JNCC and Natural England's 2012 scientific advice on the regional MCZ project's recommendations[47].

JNCC assessed the requirement to revise our existing advice in light of any new data available for the features of the site. The assessment followed the JNCC MCZ decision tree process (Annex 1).

[46] Finding Sanctuary Regional MCZ project report available at: http://publications.naturalengland.org.uk/publication/1561560
[47] JNCC's scientific advice on Tranche One MCZs (2012-2013). Available at: http://jncc.defra.gov.uk/page-6460

Table 39: North-East of Haig Fras rMCZ 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
North-East of Haig Fras rMCZ (FS08)	**Subtidal coarse sediment**	**Moderate** (Low)	While no new biophysical data are available, previously used British Geological Survey (BGS) ground truthing data have undergone a Quality Assurance (QA) procedure and therefore JNCC's 2012 scientific advice on the confidence of the feature's presence has increased to moderate. Two seabed sediment ground-truthing records are available to support the presence of Subtidal coarse sediment within the site. There is no in-situ habitat map available to provide a mapped extent of the feature, therefore Moderate confidence in feature presence is advised.	**Low** (Low)	A modelled habitat map is the only habitat map available for the site and limited ground-truth data are available to support the feature. Therefore a Low confidence score for extent has been assigned in accordance with Technical Protocol E.
	Subtidal sand	**High** (Moderate)	While no new biophysical data are available, previously used British Geological Survey (BGS) ground truthing data have undergone a Quality Assurance (QA) procedure and therefore JNCC's 2012 scientific advice on the confidence of the feature's presence has increased to High. Seven ground-truthing records are available to support the presence of Subtidal sand within the site.	**Low** (Low)	Ground truthing data covers part of the modelled feature extent, however seabed sediment data indicating the presence of Subtidal sand have been found within the modelled extent for Subtidal mud, suggesting the Subtidal sand feature may extend further than the current modelled extent of the feature. This uncertainty in the modelled extent of Subtidal sand means that only Low confidence is assigned.
	Subtidal mud	**High** (Low)	While no new biophysical data are available, previously used British Geological Survey (BGS) ground truthing data have undergone a Quality Assurance (QA) procedure and therefore JNCC's 2012 scientific advice on the confidence of the feature's presence has increased to High. Five ground-truthing records are available to support the presence of Subtidal mud within the site.	**Low** (Low)	The modelled extent of this feature is supported by ground truthing data covering part of the feature. There are also ground truthing records that conflict with the modelled extent for the feature. Seabed sediment data suggest the area modelled as subtidal mud has a high sand content. This uncertainty in the modelled extent of Subtidal mud means that only Low confidence is assigned.
	Subtidal mixed sediments	**Low** (Low)	While no new biophysical data are available, previously used British Geological Survey (BGS) ground truthing data have undergone a Quality Assurance (QA) procedure. Whilst this has improved our confidence in the dataset, JNCC's 2012 scientific advice on confidence in the feature's presence and extent would not change owing to limited data available to support the feature in the site. No revised advice is required.	**Low** (Low)	While no new biophysical data are available, previously used British Geological Survey (BGS) ground truthing data have undergone a Quality Assurance (QA) procedure. Whilst this has improved our confidence in the dataset, JNCC's 2012 scientific advice on confidence in the feature's presence and extent would not change owing to limited data available to support the feature in the site. No revised advice is required.

The blue text represents the previous assessment score

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

Table 40: Summary of JNCC's conservation advice for features in North-East of Haig Fras rMCZ

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F[22])	General Management Approach advised (MCZ Conservation Objective Guidance[32])	Rationale for conservation advice
North-East of Haig Fras rMCZ (FS08)	**Subtidal coarse sediment**	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) indicate demersal trawling is occurring at the site, less trawling effort is recorded within the mapped extent of this feature. However the exposure levels remain high enough that no new advice is required: a Recover objective is still advised.
	Subtidal sand	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) indicate demersal trawling is occurring at the site and the highest levels of effort overlap with the mapped extent of this feature. The exposure levels remain high enough that no new advice is required: a Recover objective is still advised.
	Subtidal mud	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) indicate demersal trawling is occurring at the site and the highest levels of effort overlap with the mapped extent of this feature. The exposure levels remain high enough that no new advice is required: a Recover objective is still advised.
	Subtidal mixed sediments	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) indicate demersal trawling is occurring at the site, less trawling effort is recorded within the mapped extent of this feature. However the exposure levels remain high enough that no new advice is required: a Recover objective is still advised.

The blue text represents the previous assessment score

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

Table 41: North-East of Haig Fras rMCZ feature risk assessment

Site (code)	Feature	Current risk	Future risk
North East of Haig Fras rMCZ (FS08)	**Subtidal coarse sediment**	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), surface abrasion: damage to seabed surface features and physical removal (extraction of substratum).
	Subtidal sand	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to physical removal (extraction of substratum).
	Subtidal mud	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), organic enrichment and the removal of target and non-target species.
	Subtidal mixed sediments	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical change (to another seabed type), physical loss (to land or freshwater habitat), penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration, physical removal (extraction of substratum), introduction of microbial pathogens, introduction or spread of non-indigenous species and removal of non-target species.

Table 42: North-East of Haig Fras rMCZ feature data sufficiency assessment and additional conservation / ecological considerations

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	Q2a: Does the feature fill a 'gap' in the network AND have confidence score of at least moderate for feature presence?	Q2b: Is the feature at high risk of damage?	Outcome from Question 2 assessment
North-East of Haig Fras rMCZ (FS08)	**Subtidal coarse sediment**	**Yes** (Moderate confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**Yes -** the feature is not adequately protected within the region.	**No**	**Conservation benefits support priority feature designation**
	Subtidal sand	**Yes** (High confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**Yes -** the feature is not adequately protected within the region.	**Yes** (Current and Future risk)	**Conservation benefits support priority feature designation**
	Subtidal mud	**Yes** (High confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** the feature is already adequately protected within the region.	**Yes** (Current risk)	**Feature should be further considered** – JNCC advise that the feature should be designated as there is sufficient evidence that it occurs in the site and would ensure most features found in the site are designated
	Subtidal mixed sediments	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** the feature is already adequately protected within the region and confidence in feature presence is low.	**No**	**Scientific evidence does not justify designation as this stage**

Table 43: North-East of Haig Fras rMCZ site level assessment

Question	Response
Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?	N/A
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?	0%
Q3: Does this site fill a 'gap' in the network based on revised confidence assessments in feature presence and extent?	Yes - for Subtidal coarse sediment and Subtidal sand in the Western Channel & Celtic Seas CP2 region. Currently 7.1% of Subtidal coarse is designated within MPAs in the Secretary of State waters part of the CP2 region (the minimum ENG target is 17%). The site would add 0.2% to the target. Additionally, 8.9% of Subtidal sand is designated within MPAs in the Secretary of State waters part of the CP2 region (the minimum ENG target is 15%). The site would add 0.6% to the target.

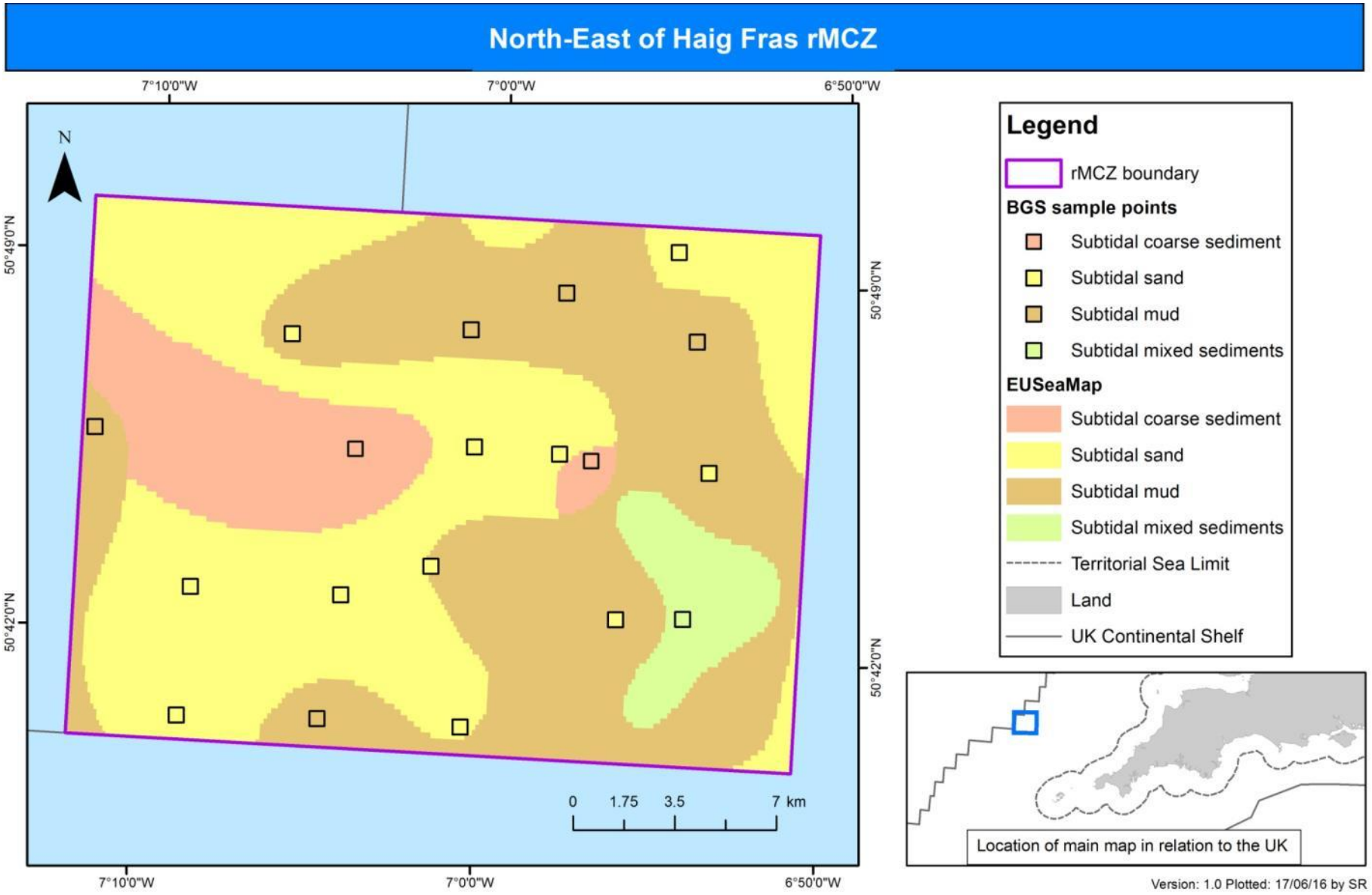

Figure 9: Map of broad scale habitats in North-East of Haig Fras rMCZ

3.10 Queenie Corner

Queenie Corner is an area proposed by Northern Irish Fishermen for consideration within the Tranche Three consultation for the designation of Subtidal mud and Sea-pen and burrowing megafauna communities in the Irish Sea. The proposal came from a stakeholder workshop in 2014 which included representatives from the fishing industry, NGOs and government bodies. The proposal was made by representatives from the Northern Ireland fishing industry[48]. The current proposed boundary for Queenie Corner is a combination of three candidate sites suggested for the western Irish Sea at a stakeholder workshop in 2014. The site was put forward to Defra as an alternative to Mud Hole rMCZ, Slieve Na Griddle rMCZ and South Rigg rMCZ, as it is expected by NI fishermen that management in the location of Queenie Corner could have a lower impact on fishing activity.

Queenie Corner was not included in the regional project MCZ recommendations and nor has it previously been considered during MCZ designations that took place in Tranche One or Tranche Two. Therefore no previous scientific advice for the designation of this area as an MCZ exists. While the area was proposed by stakeholders for the designation of **Subtidal mud** and **Sea-pen and burrowing megafauna communities,** data exist to suggest the presence of **Subtidal sand** within the area and therefore this feature is also included within our advice.

[48] Alternative Marine Conservation Zones in Irish Sea mud habitat: potential for fisheries displacement and an assessment of habitat condition and potential management scenarios. (AFBI / SeaFish. 2015). Available at: http://www.seafish.org/media/Publications/Seafish_2015_Alternative_MCZs_in_Irish_Seafinal.pdf

Table 44: Queenie Corner 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
Queenie Corner	**Subtidal sand**	**Moderate** (*)	Moderate confidence in the presence of the feature is supported by two interpreted ground-truth records and a modelled habitat map.	**Low** (*)	There are only two ground-truth records and much of the modelled extent of the feature contains ground-truth records indicating the presence of Subtidal mud. Confidence in the extent of Subtidal sand is therefore Low.
	Subtidal mud	**High** (*)	There are a total of 83 ground-truth records supporting the presence of Subtidal mud from a variety of surveys. EUSeaMap also predicts the presence of the feature in the area. Confidence in the presence of Subtidal mud is therefore High.	**High** (*)	High confidence in the extent of the feature is supported by 83 interpreted ground-truth records which are well distributed through the area.
	Sea-pen and burrowing megafauna communities	**High** (*)	High confidence in the presence of the feature is supported by 35 sample points with burrow densities >0.2 m^{-2} from the Marine Institute *Nephrops* surveys.	**High** (*)	The ground-truth records supporting the presence of the feature are well distributed through the area. Confidence in the extent of the feature is therefore High.

The blue text represents the previous assessment score

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

Table 45: Summary of JNCC's conservation advice for features in Queenie Corner

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F[22])	General Management Approach advised (MCZ Conservation Objective Guidance[32])	Rationale for conservation advice
Queenie Corner	**Subtidal sand**	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicates demersal trawling activity occurs throughout the site. The feature is considered to be experiencing high levels of exposure to associated pressures and is at least moderately sensitive to these pressures. Therefore the feature is considered highly vulnerable to benthic trawling and a GMA of Recover has been advised. A licence was granted by MMO (2002-2003) for the disposal of the chemical Rhodamine WT in the area, the impact of this activity on the feature is considered none.
	Subtidal mud	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicates demersal trawling activity occurs throughout the site. The feature is considered to be experiencing high levels of exposure to associated pressures from demersal trawling activity and is at least moderately sensitive to these pressures. Therefore the feature is considered highly vulnerable to benthic trawling and a GMA of Recover has been advised. A gas pipeline crosses the mapped extent of this feature and has potential to exert pressures, however at a minimal exposure level. A licence was granted by MMO (2002-2003) for the disposal of the chemical Rhodamine WT in the area, the impact of this activity on the feature is considered none.
	Sea-pen and burrowing megafauna communities	**Low** *(*)*	**Recover** *(*)*	

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

Table 46: Queenie Corner feature risk assessment

Site (code)	Feature	Current risk	Future risk
Queenie Corner	**Subtidal sand**	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to physical removal (extraction of substratum).
	Subtidal mud	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), organic enrichment and the removal of target and non-target species.
	Sea-pen and burrowing megafauna communities	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to organic enrichment.

Table 47: Queenie Corner feature data sufficiency assessment and additional conservation / ecological considerations

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	Q2a: Does the feature fill a '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
Queenie Corner	**Subtidal sand**	**Yes** (Moderate confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** the feature is already adequately protected within the region	**Yes** (Current and future risk)	**Feature should be further considered** – however JNCC advise that Defra do not designate this feature in this site as there are very limited data to support the feature and much data to support alternative habitats in the modelled area of Subtidal sand. It is therefore likely that much of the site is actually Subtidal mud.
	Subtidal mud	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			
	Sea-pen and burrowing megafauna communities	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			

Table 48: Queenie Corner 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?	**N/A**
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?	**57.1%** - noting that the extent of Subtidal mud is likely to be greater than that modelled within the area at present

Q3: Does this site fill a 'gap' in the network based on revised confidence assessments in feature presence and extent?	**Yes** - for Subtidal mud in the Irish Sea CP2 region. Currently 10.8% of Subtidal mud is designated within MPAs in the Secretary of State waters part of the CP2 region (the minimum ENG target is 15%). The site would add 2.1%[49] to the target.

[49] Since this advice was provided a new habitat map has confirmed our understanding of the extent of mud within the site and updated our understanding with regards to the percentage area contribution that this site could make to the mud protected in the MPA network in the Irish Sea region; which has increased to 3.6%. This new mapped product will be used to inform JNCC's post-consultation advice.

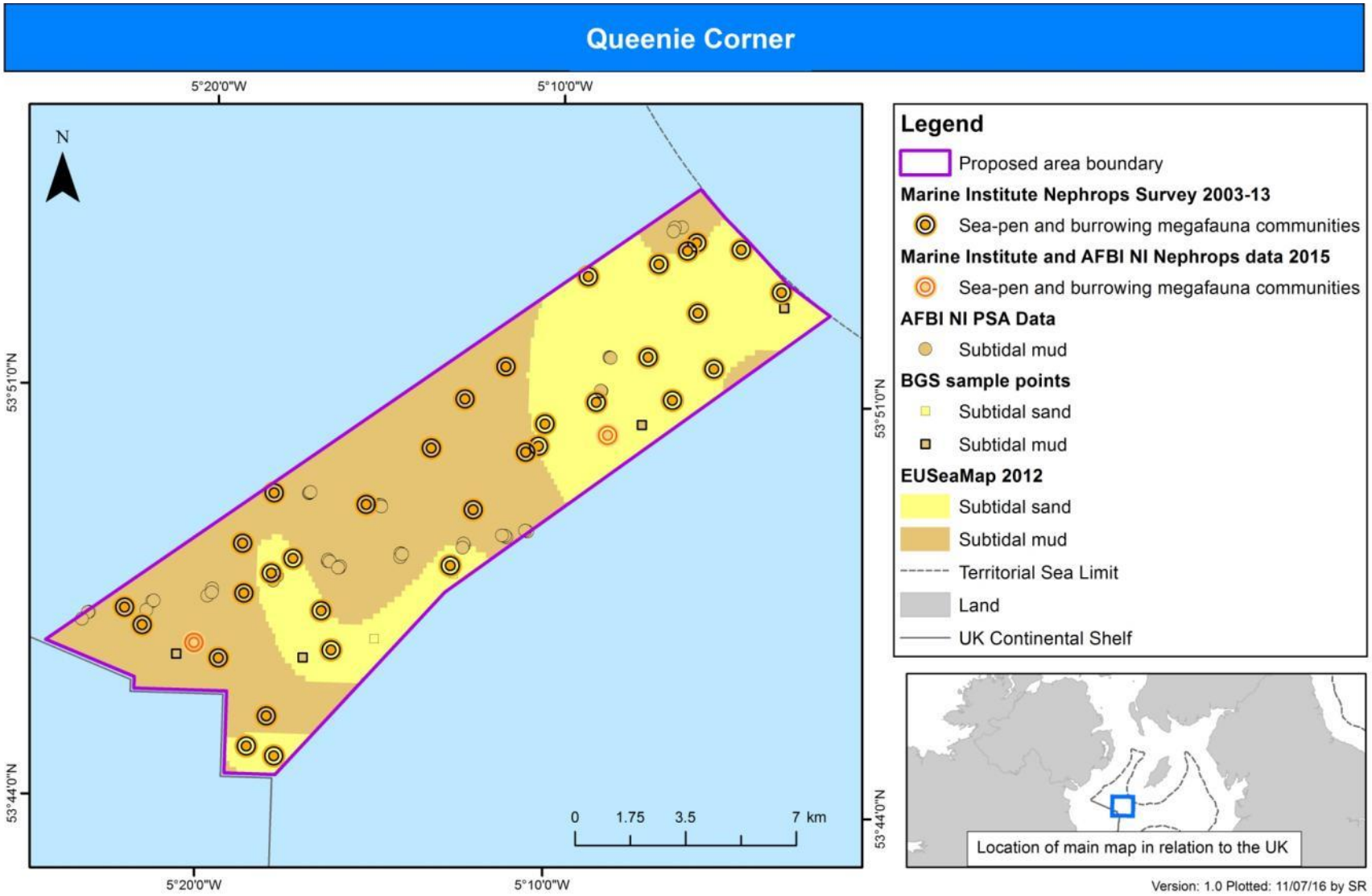

Figure 10: Map of broad scale habitats and species Features of Conservation Importance in Queenie Corner

3.11 Silver Pit rMCZ

Silver Pit rMCZ was originally recommended by the NetGain regional MCZ project[38] for the broad-scale habitats **Subtidal sand** and **Subtidal mixed sediments**, the habitat FOCI **Ross worm (*Sabellaria spinulosa*) reefs** and the geomorphological FOCI – **North Sea Glacial Tunnel Valleys (Inner Silver Pit).** The regional MCZ project noted evidence of the presence of the species FOCI **Ocean quahog (*Arctica islandica*)** but did not put the feature forward for designation as there was only one record available at the time. In JNCC's 2012 advice[47], it was suggested that **Ocean quahog (*Arctica islandica*)** could be put forward for designation as a feature within the site.

Since JNCC's 2012 advice, new data from surveys and data mining contracts have become available. These data provide evidence of additional features within the site. As a result, the current advice includes **Moderate energy circalittoral rock, Subtidal coarse sediment, Subtidal mud, Horse mussel (*Modiolus modiolus*) beds** and **Ocean quahog (*Arctica islandica*)**, along with the previously recommended features **Subtidal sand**, **Subtidal mixed sediments, Ross worm (*Sabellaria spinulosa*) reefs** and **North Sea Glacial Tunnel Valleys (Inner Silver Pit)**.

Table 49: Silver Pit rMCZ 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
Silver Pit rMCZ (NG06)	**Moderate energy circalittoral rock**	**Low** (*)	The feature is only supported by a modelled habitat map with no ground-truth records to support it.	**Low** (*)	The feature is only supported by a modelled habitat map with no ground-truth records to support it.
	Subtidal coarse sediment	**High** (*)	High confidence in presence is supported by 35 interpreted ground-truth records and the Broadscale Mapping Project[50] habitat map.	**Moderate** (*)	The ground-truth records are well distributed through the site and support the mapped extent of the feature. There is disagreement between the mapped extent of Subtidal sand and ground-truth records for Subtidal coarse sediment in the south of the site, therefore confidence in feature extent is Moderate.
	Subtidal sand	**High** (Moderate)	High confidence in presence is supported by eight interpreted ground-truth points and a habitat map from survey	**Moderate** (Moderate)	The ground-truth records are scattered throughout the site. They generally support the mapped extent from the BMP map[50]; however the mapped extent covers a large area and disagrees with many of the intersecting ground-truth records. Confidence in extent is therefore Moderate.
	Subtidal mud	**Moderate** (*)	There are three ground-truth records which support the presence of the feature in the site. As a result, confidence in the feature extent is Moderate.	**Low** (*)	The three ground-truth records are widely dispersed and cannot be used to identify a specific patch of the habitat within the site. The feature is not included on either the modelled habitat map or the BMP habitat map. Therefore, confidence in feature extent is Low.
	Subtidal mixed sediments	**High** (Moderate)	High confidence in presence is supported by 13 ground-truth records, the BMP habitat map and the modelled habitat map[51].	**High** (Moderate)	Two of the mapped patches of the feature are supported by a ground-truth record. Most of the ground-truth records occur in clusters and can be used to delineate possible patches of the habitat. Therefore, confidence in extent of the feature is High.
	Horse mussel (*Modiolus modiolus*) beds	**Not assessed** (*)	There is a single grab sample which recorded 32 individual horse mussels. Identifying the presence of the habitat FOCI requires information on the age of individuals, associated communities and the area of the	**Not assessed** (*)	There is a single grab sample which recorded 32 individual horse mussels. Identifying the presence of the habitat FOCI requires information on the age of individuals, associated communities and the area of the habitat. The available data does not allow an assessment to be made against these criteria.

[50] The Broadscale Mapping Project (BMP). More information is available at: http://www.envision.uk.com/downloads/technical%20report.pdf

[51] Two of the mapped patches of Subtidal mixed sediments include a supporting ground-truth record within Silver Pit rMCZ. Other mapped areas which overlap with the site boundary contain supporting records located outside the site. For example, the area of Subtidal mixed sediments in the north west of Silver Pit rMCZ is verified by two BGS records just outside the site boundary.

Site (Code)	Feature	Evidence Assessment Results			
		Confidence in presence	Rationale for confidence in Feature presence	Confidence in extent	Rationale for confidence in Feature extent
			habitat. The available data does not allow an assessment to be made against these criteria.		
	Ross worm (*Sabellaria spinulosa*) reefs	**Moderate** (Low)	Moderate confidence is supported by three ground-truth records that indicate the presence of the feature, one with a medium reefiness score and two with a low reefiness score. A mapped extent has also been created using sidescan sonar information and mapped polygons include a supporting ground-truth record. In addition, there are nine ground-truth records which have been identified as potential reef.	**Low** (Not assessed)	There is a mapped extent from survey, however there is uncertainty regarding the distribution of the feature in areas where records of potential Ross worm (*Sabellaria* spinulosa) reefs have been recorded. Based on this information, confidence in feature extent is Low
	Ocean quahog (*Arctica islandica*)	**Low** (*)	There are two records, one from 2009 and one from 1992. Confidence in presence of the feature is Low because there is only one record from within the last 12 years.	**Low** (*)	One record is over 6 years old, the other is over 12. In addition, there is little information on abundance and/or distribution of the species across the site. As there are so few records it is difficult to determine distribution of the species through the site and as a result confidence in the distribution Low.
	North Sea Glacial Tunnel Valleys (Inner Silver Pit)	**High** (High)	Confidence in feature presence is a direct parallel to confidence in the morphology of the geomorphological-feature. Confidence in the maps of the North Sea Glacial Tunnel Valley feature in the site is High	**High** (High)	Confidence in feature extent is a direct parallel to confidence in the morphology of the geomorphological-feature. Confidence in the maps of the North Sea Glacial Tunnel Valley feature in the site is High

The blue text represents the previous assessment score

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

Table 50: Summary of JNCC's conservation advice for features in Silver Pit rMCZ

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F[22])	General Management Approach advised (MCZ Conservation Objective Guidance[32])	Rationale for conservation advice
Silver Pit rMCZ (NG06)	**Moderate energy circalittoral rock**	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicates that otter trawling takes place within the mapped extent of this feature, exposing it to associated pressures. Oil and gas infrastructure (surface and subsurface) and wrecks are present within the site, exposing the feature to pressures such as physical change in seabed type. Based on the combined exposure to fishing and infrastructure the advised GMA for this feature is Recover.
	Subtidal coarse sediment	**Low** *(*)*	**Recover** *(*)*	
	Subtidal sand	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) indicates that otter trawling takes place within the mapped extent of this feature, exposing it to associated pressures. Oil and gas infrastructure (surface and subsurface) and wrecks are present within the site, exposing the feature to pressures such as physical change in seabed type. This feature is also potentially moderately vulnerable to pressures from sand and gravel extraction. Based on the combined exposure to fishing, infrastructure and possible aggregate extraction the advised GMA for this feature is Recover.
	Subtidal mud	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicates that otter trawling takes place within the mapped extent of this feature, exposing it to associated pressures. Due to the feature's sensitivity to these pressures JNCC advise a Recover GMA.
	Subtidal mixed sediments	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) indicates that otter trawling takes place within the mapped extent of this feature, exposing it to associated pressures. Oil and gas infrastructure (surface and subsurface) and wrecks are present within the site, exposing the feature to pressures such as physical change in seabed type. This feature is also potentially moderately vulnerable to pressures from sand and gravel extraction. Based on the combined exposure to fishing, infrastructure and possible aggregate extraction the advised GMA for this feature is Recover.
	Horse mussel (*Modiolus modiolus*) beds	**Not Assessed** *(*)*	**Not Assessed** *(*)*	The available data does not allow an assessment to be made regarding this feature's presence and extent within the site and is therefore not assessed for conservation advice.
	Ross worm reefs (*Sabellaria spinulosa*)	**Low** *(Low)*	**Recover** *(Maintain)*	Aggregated VMS data (2009-2013) indicates that otter trawling takes place within the mapped extent of this feature, exposing it to associated pressures. . This feature is also potentially exposed to siltation through the extraction of sand and gravel for aggregates, a pressure this feature is considered moderately vulnerable to. Due to the feature's sensitivity to these pressures JNCC advise a Recover GMA.
	Ocean quahog (*Arctica islandica*)	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicates that otter trawling takes place within the mapped extent of this feature, exposing it to associated pressures. Oil and gas infrastructure (surface and subsurface) and wrecks are present within the site, exposing the feature to pressures such as physical change in seabed type. Based on the combined exposure to fishing and infrastructure the advised GMA for this feature is Recover.

	North Sea Glacial Tunnel Valleys (Inner Silver Pit)	**High** *(*)*	**Maintain** *(*)*	For all geomorphological features the default GMA is set to Maintain.

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

Table 51: Silver Pit rMCZ feature risk assessment

Site (code)	Feature	Current risk	Future risk
Silver Pit rMCZ (NG06)	**Moderate energy circalittoral rock**	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling and infrastructure.	**High** Feature is **highly sensitive** (with moderate/high confidence) to the removal of non-target species
	Subtidal coarse sediment	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling and infrastructure.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), surface abrasion: damage to seabed surface features and physical removal (extraction of substratum).
	Subtidal sand	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to physical removal (extraction of substratum).
	Subtidal mud	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), organic enrichment and the removal of target and non-target species.
	Subtidal mixed sediments	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical change (to another seabed type), physical loss (to land or freshwater habitat), penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration, physical removal (extraction of substratum), introduction of microbial pathogens, introduction or spread of non-indigenous species and removal of non-target species.

Site (code)	Feature	Current risk	Future risk
	Ross worm reefs (*Sabellaria spinulosa*)	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to shallow abrasion/penetration: damage to seabed surface and penetration and the removal of non-target species.
	Horse mussel (*Modiolus modiolus*) beds	**Not assessed**	
	Ocean quahog (*Arctica islandica*)	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration and physical removal (extraction of substratum).
	North Sea Glacial Tunnel Valleys (Inner Silver Pit)	**Not assessed** - geological/geomorphological feature	

Table 52: Silver Pit rMCZ feature data sufficiency assessment and additional conservation / ecological considerations

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	Q2a: Does the feature fill a '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
Silver Pit rMCZ (NG06)	**Moderate energy circalittoral rock**	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** the feature is already adequately protected within the region and there is low confidence in feature presence.	**Yes** (Future risk)	**Feature should be further considered –** JNCC advise that this feature should not be designated as there are no data to support its presence in the site

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	Q2a: Does the feature fill a '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
	Subtidal coarse sediment	**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** (Moderate confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** the feature is already adequately protected within the region.	**Yes** (Current risk)	**Feature should be further considered –** JNCC advise that this feature should not be designated as there are limited data to support its presence in the site
	Subtidal mixed sediments	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			
	Ross worm (*Sabellaria spinulosa*) reefs	**Yes** (Moderate confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No** – this species is adequately replicated within the region	**Yes** (Current and future risk)	**Feature should be further considered –** JNCC advise that this feature should be designated as there are sufficient data to indicate the feature occurs in the site and further data are still to be analysed which may increase the amount of habitat known to occur in Silver Pit rMCZ
	Ocean quahog (*Arctica islandica*)	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No** – there is a replication gap in the region for this species but there is low confidence in feature presence in this site	**Yes** (Current and future risk)	**Feature should be further considered –** JNCC advise that this feature should not be designated as there are limited data to

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	Q2a: Does the feature fill a '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
								support its presence in the site
	North Sea Glacial Tunnel Valleys (Inner Silver Pit)	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			

Table 53: Silver Pit rMCZ site level assessment

Question	Response
Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?	N/A
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?	96.0%
Q3: Does this site fill a 'gap' in the network based on revised confidence assessments in feature presence and extent?	Yes - for Subtidal mixed sediments and Ocean quahog (*Arctica islandica*) in the Southern North Sea CP2 region. Currently 10.5% of Subtidal mixed sediments is designated within MPAs (the minimum ENG target is 16%). This site would add 0.6% to the target, Furthermore there are currently less than three replicates of Ocean quahog (*Arctica islandica*) are designated as a feature of an MPA in the region. The designation of this species in Silver Pit rMCZ would fill this shortfall in replication in the CP2 region. However data for this species in the site are limited and JNCC advise that it is not designated in Silver Pit rMCZ, instead Holderness Offshore rMCZ.

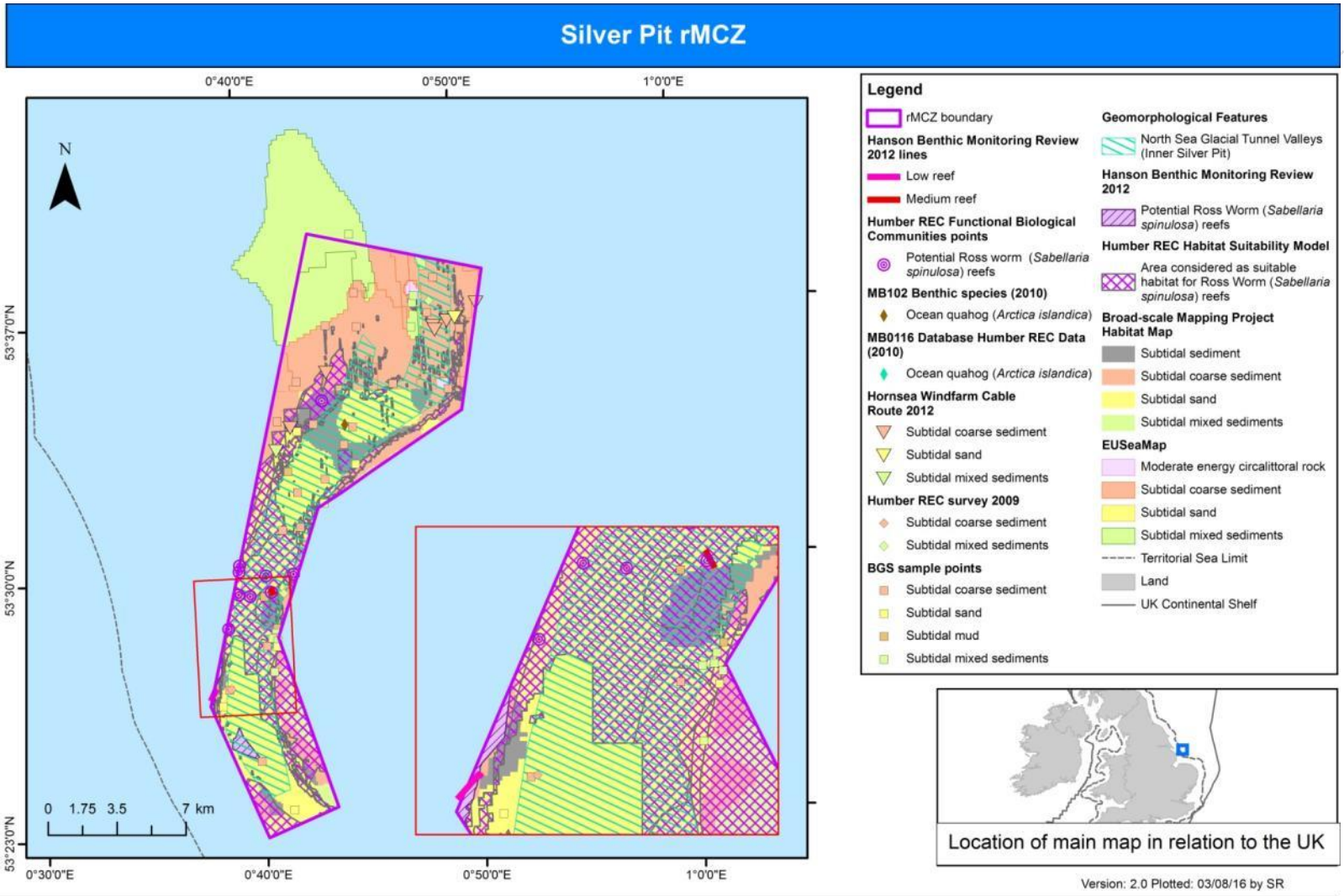

Figure 11: Map of broad scale habitats, species Features of Conservation Importance and geological feature in Silver Pit rMCZ

3.12 Slieve Na Griddle rMCZ

Slieve Na Griddle rMCZ was recommended by the Irish Sea Conservation Zone regional MCZ project[43] for the broad-scale habitat **Low energy circalittoral rock** and **Subtidal mud** and the habitat Feature of Conservation Importance (FOCI) **Mud habitats in deep water.** Mud habitats in deep water are no longer considered a protected feature for MCZs and therefore this feature is not considered further within this advice[44]. As part of JNCC's scientific advice to Defra in July 2014, all features with supporting data or recommended by the regional MCZ project for Slieve Na Griddle rMCZ were advised upon. We also advised on the habitat FOCI **Sea-pen and burrowing megafauna communities** following MB0120 survey data provided evidence of this feature in the site. Following JNCC's 2014 advice, a decision was made by Defra to not designate Slieve Na Griddle rMCZ through Tranche Two. The site however is now being further advised on in Tranche Three in order to consider this site for filling ecological gaps in the MPA network.

Since the 2014 advice, JNCC has received further evidence of the presence of **Subtidal mud** and **Sea-pen and burrowing megafauna communities** through the Irish Marine Institute Nephrops Stock Assessment burrow counts data points (2003-2015). In this present assessment JNCC provide advice on these two features. JNCC assessed the requirement to revise our existing advice in light of any new data available for the features of the site. The assessment followed the JNCC MCZ decision tree process (Annex 1).

Table 54: Slieve Na Griddle rMCZ 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
Slieve Na Griddle rMCZ (ISCZ07)	**Low energy circalittoral rock**	**Not Assessed** *(Not Assessed)*	No assessment required for this feature as it is protected through the Pisces Reef Complex cSAC/SCI and as a result it should not be a feature within the MCZ. No revised advice required.	**Not Assessed** *(Not Assessed)*	No assessment required for this feature as it is protected through the Pisces Reef Complex cSAC/SCI and as a result it should not be a feature within the MCZ. No revised advice required.
	Subtidal mud	**High** *(High)*	New data available from the Irish Marine Institute Nephrops Stock Assessment burrow counts data (2003-2015) providing additional evidence for feature's presence within the site. JNCC continues to have High confidence in the presence of the feature due to the volume of supporting data and high resolution habitat map. No revised advice is required.	**High** *(High)*	New data available from the Irish Marine Institute Nephrops Stock Assessment burrow counts data (2003-2015) providing additional evidence for feature's presence within the site. JNCC continues to have High confidence in the extent of the feature due to the volume of supporting data and high resolution habitat map. No revised advice is required.
	Sea-pen and burrowing megafauna communities	**High** *(High)*	New data available from the Irish Marine Institute Nephrops Stock Assessment burrow counts data (2003-2015) providing additional evidence for feature's presence within the site. JNCC continues to have High confidence in the presence of the feature due to the volume of supporting data and high resolution habitat map. No revised advice is required.	**High** *(High)*	New data available from the Irish Marine Institute Nephrops Stock Assessment burrow counts data (2003-2015) providing additional evidence for feature's presence within the site. JNCC continues to have High confidence in the extent of the feature due to the volume of supporting data and high resolution habitat map. No revised advice is required.

The blue text represents the previous assessment score

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

Table 55: Summary of JNCC's conservation advice for features in Slieve Na Griddle rMCZ

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F[22])	General Management Approach advised (MCZ Conservation Objective Guidance[32])	Rationale for conservation advice
Slieve Na Griddle rMCZ (ISCZ07)	**Subtidal mud**	**Low** (*)	**Recover** (*)	Aggregated VMS data (2009-2013) indicates demersal trawling activity occurs throughout the site, broadly agreeing with previous data. The feature is considered to still be experiencing high levels of exposure to associated pressures (surface abrasion) and is moderately to highly sensitive to these pressures. Therefore the features are considered highly vulnerable to benthic trawling activity and no revisions to the previously advised Recover GMAs are required.
	Sea-pen and burrowing megafauna communities	**Low** (*)	**Recover** (*)	

The blue text represents the previous assessment score

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

Table 56: Slieve Na Griddle rMCZ feature risk assessment

Site (code)	Feature	Current risk	Future risk
Slieve Na Griddle rMCZ (ISCZ07)	**Low energy circalittoral rock**	**Not assessed**	
	Subtidal mud	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), organic enrichment and the removal of target and non-target species.
	Sea-pen and burrowing megafauna communities	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to organic enrichment.

Table 57: Slieve Na Griddle rMCZ feature data sufficiency assessment and additional conservation / ecological considerations

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	Q2a: Does the feature fill a '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
Slieve Na Griddle rMCZ (ISCZ07)	**Subtidal mud**	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			
	Sea-pen and burrowing megafauna communities	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			

Table 58: Slieve Na Griddle rMCZ site level assessment

Question	Response
Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?	**N/A**
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?	**N/A**
Q3: Does this site fill a 'gap' in the network based on revised confidence assessments in feature presence and extent?	**Yes** - for Subtidal mud in the Irish Sea CP2 region. Currently 10.8% of Subtidal mud is designated within MPAs in the Secretary of State waters part of the CP2 region (the minimum ENG target is 15%). The site would add 1.5% to the target.

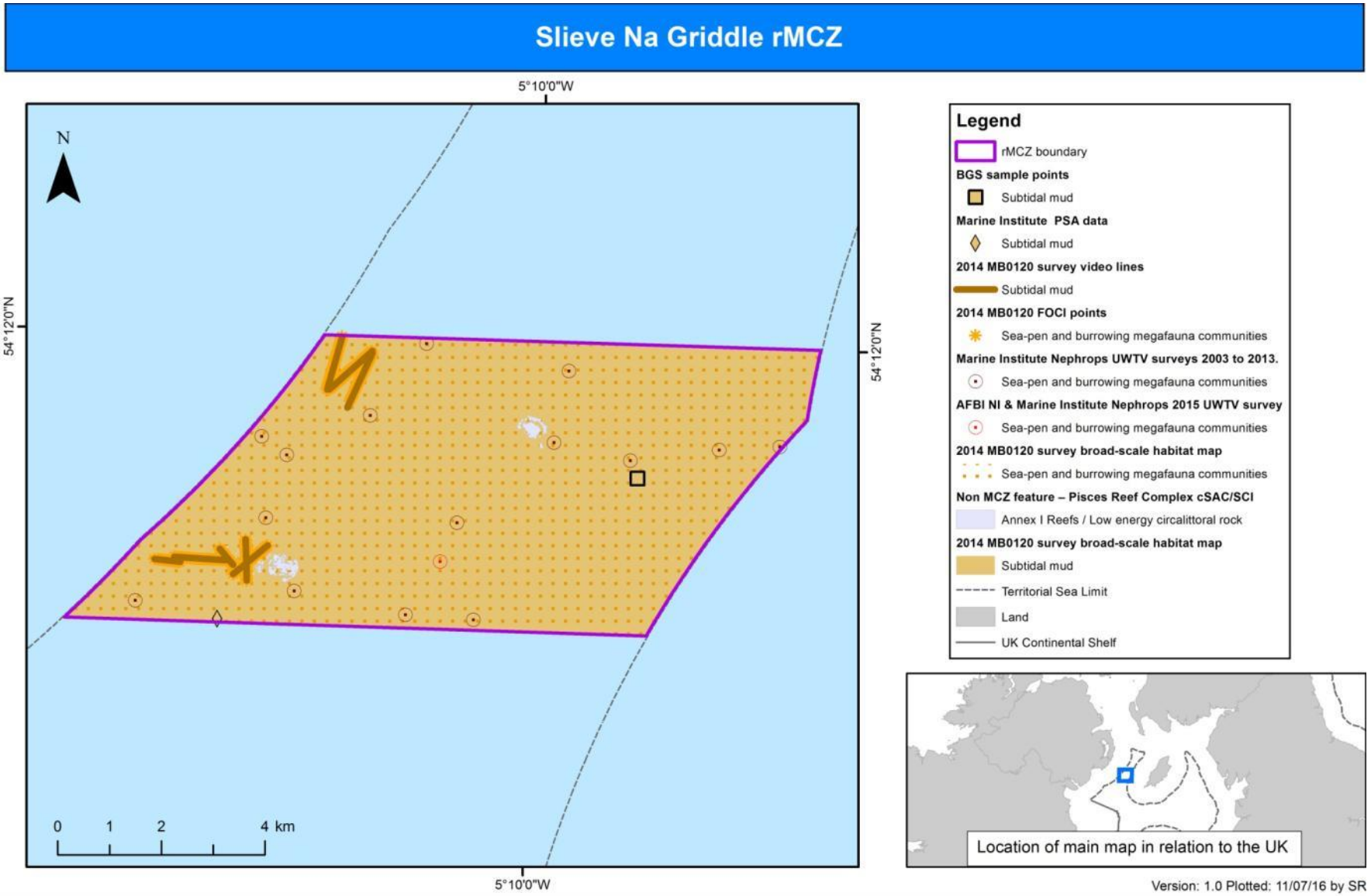

Figure 12: Map of broad scale habitats and species Features of Conservation Importance in Slieve Na Griddle rMCZ

3.13 South of Celtic Deep rMCZ

South of Celtic Deep rMCZ was recommended by the Finding Sanctuary regional MCZ project[46] for the broad-scale habitats **Subtidal coarse sediment, Subtidal Sand** and **Subtidal mixed sediments**. The presence of the broad-scale habitat **Subtidal mud** was noted by the Regional MCZ project but not put forward for recommendation[46]; however this feature was advised on by JNCC in our 2014 scientific advice on South of Celtic Deep rMCZ[2].

Further data acquired during an MB0120 survey in February 2012 found evidence of **Moderate energy circalittoral rock** and **Ocean quahog (*Arctica islandica*)**; as a result, these features were included in JNCC's 2014 advice[2]. Since JNCC's previous advice, a new full coverage habitat map of the site has been produced based on the ground-truth data collected during 2012 and acoustic data collected during 2013.

The original boundary for South of Celtic Deep rMCZ which was recommended by the Finding Sanctuary Regional Project spanned the boundary between offshore English and offshore Welsh territorial waters. All previous advice from JNCC for the site has been for this whole recommended area, however as proposed through the St David's Day agreement in 2015, the waters offshore of Wales are being considered for devolution to Welsh Government[52]. Therefore, our current advice only relates to confidence in the feature presence and extent and feature risk in the area of the original proposal which is in English offshore waters.

[52] St David's Day Agreement 2015 available at: https://www.gov.uk/government/news/landmark-funding-announcement-and-new-powers-for-wales-in-st-davids-day-agreement

Table 59: South of Celtic Deep rMCZ 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 of Celtic Deep rMCZ (FS09)	**Moderate energy circalittoral rock**	**High** (High)	The presence of the feature is supported by a habitat map from survey and six video tows containing at least one section indicating the occurrence of continuous rock.	**Moderate** (Low)	The spatial extent of the feature is mapped on a full coverage habitat map from survey, which suggests confidence in feature extent could be high. However there are several patches of the feature mapped and only one contains a video tow indicating the presence of Moderate energy circalittoral rock. The other ground truth points for the feature are located away from the mapped patches. As a result, expert judgement has been used to assign Moderate confidence in feature extent.
	Subtidal coarse sediment	**High** (High)	Multiple interpreted ground-truth records (from 17 sediment samples) from BGS and the MB0120 survey support the presence of Subtidal coarse sediment within the rMCZ.	**High** (Moderate)	The habitat map from survey covers 100% of the rMCZ. The mapped extent of Subtidal coarse sediment corresponds well with the ground-truth records, which are well distributed through the site. Therefore confidence in feature extent has been assessed as High.
	Subtidal sand	**High** (High)	The presence of Subtidal sand is demonstrated by 22 interpreted ground-truth records from BGS and the MB0120 survey.	**High** (Moderate)	The habitat map from survey covers 100% of the rMCZ. The mapped extent of Subtidal sand corresponds well with the ground-truth records, which are well distributed through the site. Therefore confidence in feature extent has been assessed as High.
	Subtidal mud	**Moderate** (Moderate)	The presence of the feature within the site is indicated by a single ground-truth record from BGS and the habitat map from the MB0120 survey[53].	**Low** (Low)	There is a large disagreement between the mapped extent of the Subtidal mud in the site and the BGS record. In addition only two ground-truth records of the feature were collected from the whole MB0120 survey (which covered the original site area) and only one of these is within the mapped extent. Therefore expert judgement has been used to assign Low confidence in extent.
	Subtidal mixed sediments	**High** (High)	The presence of Subtidal mixed sediments is demonstrated by 12 interpreted ground-truth records from BGS and the MB0120 survey.	**High** (Moderate)	The habitat map from survey covers 100% of the rMCZ. The mapped extent of Subtidal mixed sediments corresponds well with the ground-truth records, which are well distributed through the site. Therefore confidence in feature extent has been assessed as High.

[53] There are no supporting ground-truth records for the Subtidal mud from the MB0120 survey in English offshore waters, however there are two records from the survey in waters offshore to Wales. One of the MB0120 records is within the mapped area of Subtidal mud that crosses into English offshore waters. This indicates that the presence of the mapped area of Subtidal mud in the site is supported by a ground-truth record.

Site (Code)	Feature	Evidence Assessment Results			
		Confidence in presence	Rationale for confidence in Feature presence	Confidence in extent	Rationale for confidence in Feature extent
	Ocean quahog (Arctica islandica)	**Low** (Low)	There is only a single record of the species within the site.	**Low** (Low)	There is only a single record of the species within the site.

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

Table 60: Summary of JNCC's conservation advice for features in South of Celtic Deep rMCZ

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F[22])	General Management Approach advised (MCZ Conservation Objective Guidance[32])	Rationale for conservation advice
South of Celtic Deep rMCZ (FS09)	**Moderate energy circalittoral rock**	**Low** *(Low)*	**Recover** *(Maintain)*	Aggregated VMS data (2009-2013) indicated benthic trawling (otter and beam) occurs throughout the site. The feature is considered as experiencing at least low exposure to associated pressures and is moderately to highly sensitive to these pressures. The revised GMA for this feature is due to a change in the mapped location of the feature and more recent fisheries information being used.
	Subtidal coarse sediment	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) indicated benthic trawling (otter and beam) occurs throughout the site. The feature is considered as experiencing moderate exposure to associated pressures and is moderately sensitive to these pressures.
	Subtidal sand	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) indicated benthic trawling (otter and beam) occurs throughout the site. The feature is considered as experiencing moderate exposure to associated pressures and is moderately sensitive to these pressures. In addition to fishing there is one wreck located within the mapped extent of this feature. The presence of this infrastructure further supports the advised Recover GMA.
	Subtidal mud	**Low** *(Low)*	**Recover** *(Maintain)*	Aggregated VMS data (2009-2013) indicated benthic trawling (otter and beam) occurs throughout the site. The feature is considered as experiencing moderate exposure to associated pressures and is moderately sensitive to these pressures. The revised GMA for this feature is due to a change in the mapped location of the feature and more recent fisheries information being used.

	Subtidal mixed sediments	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) indicated benthic trawling (otter and beam) occurs throughout the site. The feature is considered as experiencing moderate exposure to associated pressures and is moderately sensitive to these pressures. In addition to fishing this feature is also exposed to one exploration well. The presence of this infrastructure further supports the advised Recover GMA.
	Ocean quahog (*Arctica islandica*)	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) indicated benthic trawling (otter and beam) occurs throughout the site. The feature is considered as experiencing moderate exposure to associated pressures and is moderately to highly sensitive to these pressures.

The blue text represents the previous assessment score

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

Table 61: South of Celtic Deep rMCZ feature risk assessment

Site (code)	Feature	Current risk	Future risk
South of Celtic Deep rMCZ (FS09)	**Moderate energy circalittoral rock**	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to the removal of non-target species.
	Subtidal coarse sediment	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), surface abrasion: damage to seabed surface features and physical removal (extraction of substratum).
	Subtidal sand	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling and infrastructure.	**High** Feature is **highly sensitive** (with moderate/high confidence) to physical removal (extraction of substratum).
	Subtidal mud	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), organic enrichment and the removal of target and non-target species.
	Subtidal mixed sediments	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling and infrastructure.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical change (to another seabed type), physical loss (to land or freshwater habitat), penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration, physical removal (extraction of substratum), introduction of microbial pathogens, introduction or spread of non-indigenous species and removal of non-target species.
	Ocean quahog (*Arctica islandica*)	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration and physical removal (extraction of substratum).

Table 62: South of Celtic Deep rMCZ feature data sufficiency assessment and additional conservation / ecological considerations

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	Q2a: Does the feature fill a 'gap' in the network AND have confidence score of at least moderate for feature presence?	Q2b: Is the feature at high risk of damage?	Outcome from Question 2 assessment
South of Celtic Deep rMCZ (FS09)	**Moderate 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 sand	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			
	Subtidal mud	**Yes** (Moderate confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** the feature is already adequately protected within the region	**No**	**Scientific evidence does not justify designation as this stage**
	Subtidal mixed sediments	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			
	Ocean quahog (*Arctica islandica*)	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No** – while there is a replication gap for this species in the region, there is low confidence in feature presence	**Yes** (Current and future risk)	**Feature should be further considered –** JNCC advise that this feature should not be designated as there are limited data to support its presence in the site

Table 63: South of Celtic Deep rMCZ site level assessment

Question	Response
Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?	**N/A**
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?	**99.2%**
Q3: Does this site fill a 'gap' in the network based on revised confidence assessments in feature presence and extent?	**Yes** - for Subtidal coarse sediment, Subtidal sand and Ocean quahog (*Arctica islandica*) in the Western Channel & Celtic Seas CP2 region. Currently 7.1% of Subtidal coarse is designated within MPAs in the Secretary of State waters part of the CP2 region (the minimum ENG target is 17%). The site would add 0.4% to the target. Additionally, 8.9% of Subtidal sand is designated within MPAs in the Secretary of State waters part of the CP2 region (the minimum ENG target is 15%). The site would add 0.4% to the target. Furthermore there is currently less than three replicates of Ocean quahog (*Arctica islandica*) designated as a feature of an MPA in the region. The designation of this species in South of Celtic Deep rMCZ would fill this shortfall in replication in the CP2 region. However data for this species in the site are limited and JNCC advise that it is not designated in South of Celtic Deep rMCZ.

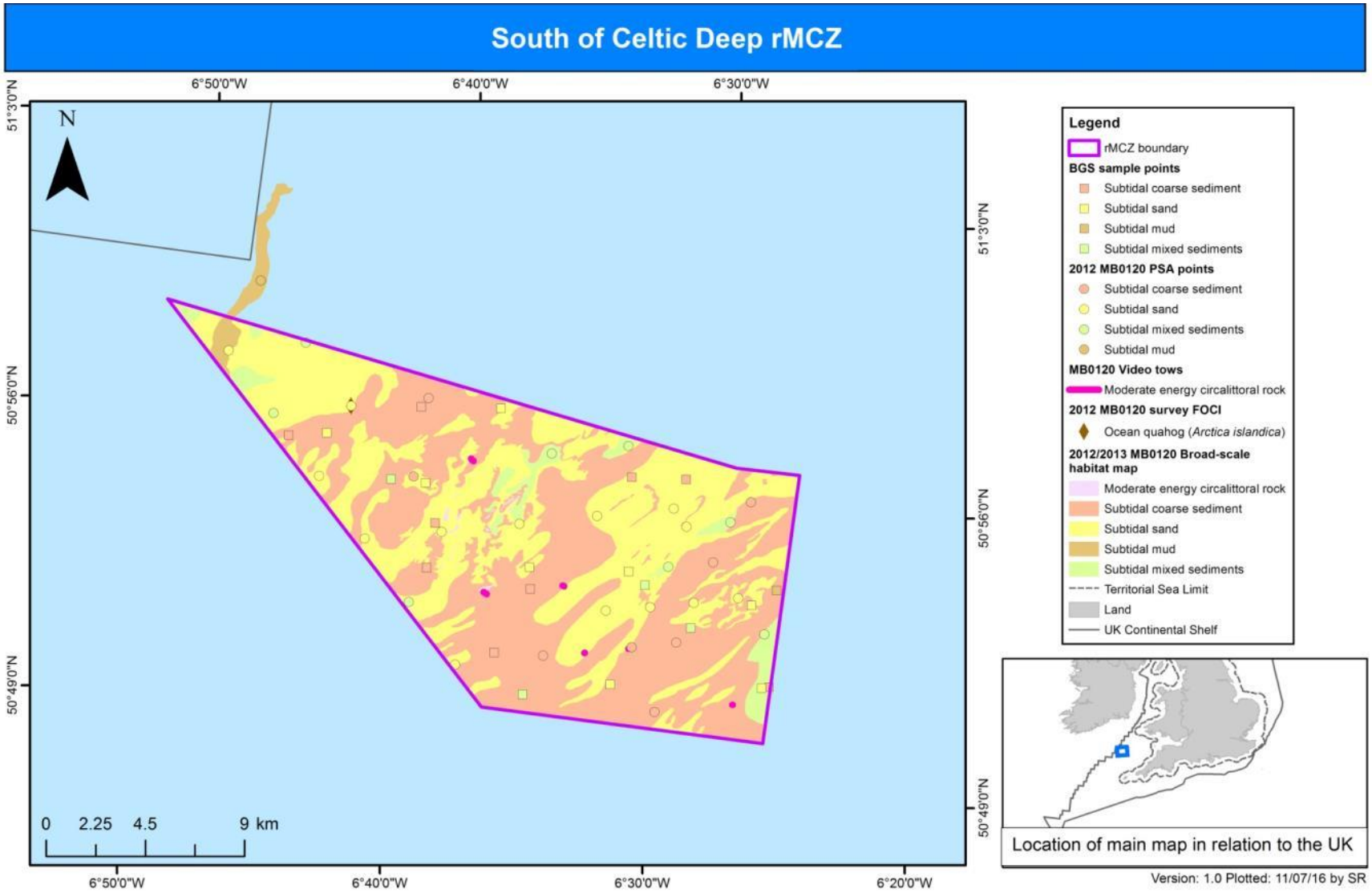

Figure 13: Map of broad scale habitats and species Features of Conservation Importance in South of Celtic Deep rMCZ

3.14 South of the Isles of Scilly rMCZ

South of the Isles of Scilly rMCZ was recommended by the Finding Sanctuary regional MCZ project[46] for the broad-scale habitats **Subtidal coarse sediment** and **Subtidal sand**. JNCC provided scientific advice on these two features in 2012. The current advice includes all features which were recommended by the regional MCZ project and/or have any supporting data. Since 2012, additional survey data have become available. As a result, in the present assessment JNCC provide advice on the broad-scale habitats; **Moderate energy circalittoral rock**, **Subtidal coarse sediment**, **Subtidal sand**, **Subtidal mixed sediments** and a **Subtidal coarse sediment/Subtidal mixed sediments mosaic habitat**, and the species FOCI **Ocean quahog (*Arctica islandica*)** and **Fan mussel (*Atrina fragilis*)**.

Table 64: South of the Isles of Scilly rMCZ 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 of the Isles of Scilly rMCZ (FS13)	**Moderate energy circalittoral rock**	**Low** (*)	There are three records of the feature from stills collected from two video tows. There are no sections of continuous video supporting the presence of the feature which could be classified as meeting the minimum patch size. Therefore, confidence in feature presence is Low.	**Low** (*)	There are three records of the feature from stills collected from two video tows. There are no sections of continuous video supporting the presence of the feature which could be classified as meeting the minimum patch size. Therefore, confidence in feature extent is Low.
	Subtidal coarse sediment	**High** (Low)	High confidence in the presence of the feature is supported by 31 interpreted ground-truth records.	**Moderate** (Low)	The presence of the feature is supported by multiple ground-truth records and a habitat map from survey which covers >98% of the site. However, the spatial extent of Subtidal coarse sediment could not be distinguished from Subtidal mixed sediments and they are mapped as a habitat mosaic. As a result confidence in the feature extent is Moderate.
	Subtidal sand	**High** (Low)	A habitat map from survey and 13 interpreted ground-truth records indicate the presence of the feature. Confidence in the presence of the feature is High	**High** (Low)	There are 13 ground-truth records and a habitat map from survey which covers >98% of the site. Confidence in the presence of the feature is therefore High.
	Subtidal mixed sediments	**High** (*)	High confidence in the presence of the feature is supported by 13 interpreted ground-truth records.	**Moderate** (*)	The presence of the feature is supported by multiple ground-truth records and a habitat map from survey which covers >98% of the site. However, the spatial extent of Subtidal mixed sediments could not be distinguished from Subtidal coarse sediment and they are mapped as a habitat mosaic. As a result confidence in the feature extent is Moderate.
	Subtidal coarse sediment/ Subtidal mixed sediments mosaic habitat	**High** (*)	The presence of the feature is supported by a habitat map from survey and multiple ground-truth records indicating the presence of the constituent broad-scale habitats. Therefore confidence in the presence of the feature is High	**High** (*)	The feature is included on a habitat map from survey which covers >98% of the site. There are ground-truth records for the two constituent broad-scale habitats throughout the mapped extent of the mosaic with only a few contradictory ground-truth records. Therefore, confidence in the extent of the feature is High
	Ocean quahog *(Arctica islandica)*	**Low** (*)	There is a single record of the species from 2013. Confidence in the presence of the feature is Low.	**Low** (*)	As there is only one record of the species, it is not possible to determine its distribution within the site beyond the single data point. Confidence in the distribution of the species has been advised as Low.

Site (Code)	Feature	Evidence Assessment Results			
		Confidence in presence	Rationale for confidence in Feature presence	Confidence in extent	Rationale for confidence in Feature extent
	Fan mussel *(Atrina fragilis)*	**Moderate** (*)	There are records of two individuals from two grabs within the last six years.	**Low** (*)	The records are less than six years old and have associated abundance information, however as there are so few records it is difficult to determine distribution of the species through the site. As a result confidence in the distribution of the species is Low.

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

Table 65: Summary of JNCC's conservation advice for features in South of the Isles of Scilly rMCZ

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F[22])	General Management Approach advised (MCZ Conservation Objective Guidance[32])	Rationale for conservation advice
South of the Isles of Scilly rMCZ (FS13)	**Moderate energy circalittoral rock**	**Low** (*)	**Recover** (*)	Aggregated VMS data (2009-2013) indicate that demersal trawling (otter, beam and boat dredging) activities occur within the site. The levels of activity show that the feature experienced at least moderate exposure to associated pressures and due to its sensitivity to these pressures, vulnerability is considered high and a recover GMA is advised.
	Subtidal coarse sediment	**Low** (*Low*)	**Recover** (*Recover*)	Aggregated VMS data (2009-2013) indicate that demersal trawling (otter, beam and boat dredging) activities occur within the site. The levels of activity show that the feature experienced at least moderate exposure to associated pressures. The mapped extent of this feature also intersects with infrastructure (cables and wrecks) exerting associated pressures such as physical change in seabed type. Due to the feature's sensitivity to these pressures, vulnerability is considered high and a Recover GMA is advised.
	Subtidal sand	**Low** (*Low*)	**Recover** (*Recover*)	
	Subtidal mixed sediments	**Low** (*)	**Recover** (*)	
	Subtidal coarse/mixed sediments mosaic	**Low** (*)	**Recover** (*)	
	Ocean quahog *(Arctica islandica)*	**Low** (*)	**Recover** (*)	Aggregated VMS data (2009-2013) indicate that demersal trawling (otter, beam and boat dredging) activities occur within the site. The levels of activity show that the feature experienced at least moderate exposure to associated pressures, due to its sensitivity to these pressures, vulnerability is considered high and a Recover GMA is advised.
	Fan mussel *(Atrina fragilis)*	**Low** (*)	**Recover** (*)	

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

Table 66: South of the Isles of Scilly rMCZ feature risk assessment

Site (code)	Feature	Current risk	Future risk
South of the Isles of Scilly rMCZ (FS13)	**Moderate energy circalittoral rock**	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to the removal of non-target species.
	Subtidal coarse sediment	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), surface abrasion: damage to seabed surface features and physical removal (extraction of substratum).
	Subtidal sand	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to physical removal (extraction of substratum).
	Subtidal mixed sediments	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical change (to another seabed type), physical loss (to land or freshwater habitat), penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration, physical removal (extraction of substratum), introduction of microbial pathogens, introduction or spread of non-indigenous species and removal of non-target species.
	Subtidal coarse/mixed sediments mosaic	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical change (to another seabed type), physical loss (to land or freshwater habitat), penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration, physical removal (extraction of substratum), introduction of microbial pathogens, introduction or spread of non-indigenous species and removal of non-target species.
	Ocean quahog *(Arctica islandica)*	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration and physical removal (extraction of substratum).
	Fan mussel *(Atrina fragilis)*	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), siltation rate changes (high), penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration, physical removal (extraction of substratum), introduction or spread of non-indigenous species and removal of non-target species.

Table 67: South of the Isles of Scilly rMCZ feature data sufficiency assessment and additional conservation / ecological considerations

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	Q2a: Does the feature fill a 'gap' in the network AND have confidence score of at least moderate for feature presence?	Q2b: Is the feature at high risk of damage?	Outcome from Question 2 assessment
South of the Isles of Scilly rMCZ (FS13)	**Moderate energy circalittoral rock**	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** the feature is already adequately protected within the region	**Yes** (Current and Future risk)	**Feature should be further considered –** JNCC advise that this feature should not be designated as there are limited data to support its presence in the site
	Subtidal coarse sediment	**Yes** (High confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**			
	Subtidal sand	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			
	Subtidal mixed sediments	**Yes** (High confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**			
	Subtidal coarse/mixed sediments mosaic[54]	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			
	Ocean quahog *(Arctica islandica)*	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No** – while there is a replication gap for this species in the region, there is low confidence in feature presence	**Yes** (Current and future risk)	**Feature should be further considered –** JNCC advise that this feature should not be designated as there are limited data to support its presence in the site

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	Fan mussel *(Atrina fragilis)*	**Yes** (Moderate confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**Yes** – this species is not adequately replicated within the region	**Yes** (Current risk)	**Conservation benefits support priority feature designation**

Table 68: South of the Isles of Scilly rMCZ site level assessment

Question	Response
Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?	**N/A**
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?	**98.6%**
Q3: Does this site fill a 'gap' in the network based on revised confidence assessments in feature presence and extent?	**Yes** - for Subtidal coarse sediment, Subtidal sand, Ocean quahog (*Arctica islandica*) and Fan mussel *(Atrina fragilis*) in the Western Channel & Celtic Seas CP2 region. Currently 7.1% of Subtidal coarse is designated within MPAs in the Secretary of State waters part of the CP2 region (the minimum ENG target is 17%). The site would add 0.1% to the target. Additionally, 8.9% of Subtidal sand is designated within MPAs in the Secretary of State waters part of the CP2 region (the minimum ENG target is 15%). The site would add 0.2% to the target. Furthermore, there are currently fewer than three replicates of Ocean quahog (*Arctica islandica*) designated as a feature of an MPA in the region. The designation of this species in South of the Isles of Scilly rMCZ would fill this shortfall in replication in the CP2 region. However, data for this species in the site are limited and JNCC advise that it is not designated in South of the Isles of Scilly rMCZ. Finally, there are currently less than three replicates of Fan mussel (*Atrina fragilis*) designated as a feature of an MPA in the region. The designation of this species in South of the Isles of Scilly rMCZ – along with the designation of the species in East of Haig Fras MCZ – would fill this shortfall in replication in the CP2 region.

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[55] Footnote for site map on next page: The abrupt boundaries between habitats on the habitat map are only indicative; it is more likely that there will be a gradual transition between areas that are predominantly Subtidal sand and the mosaic habitat.

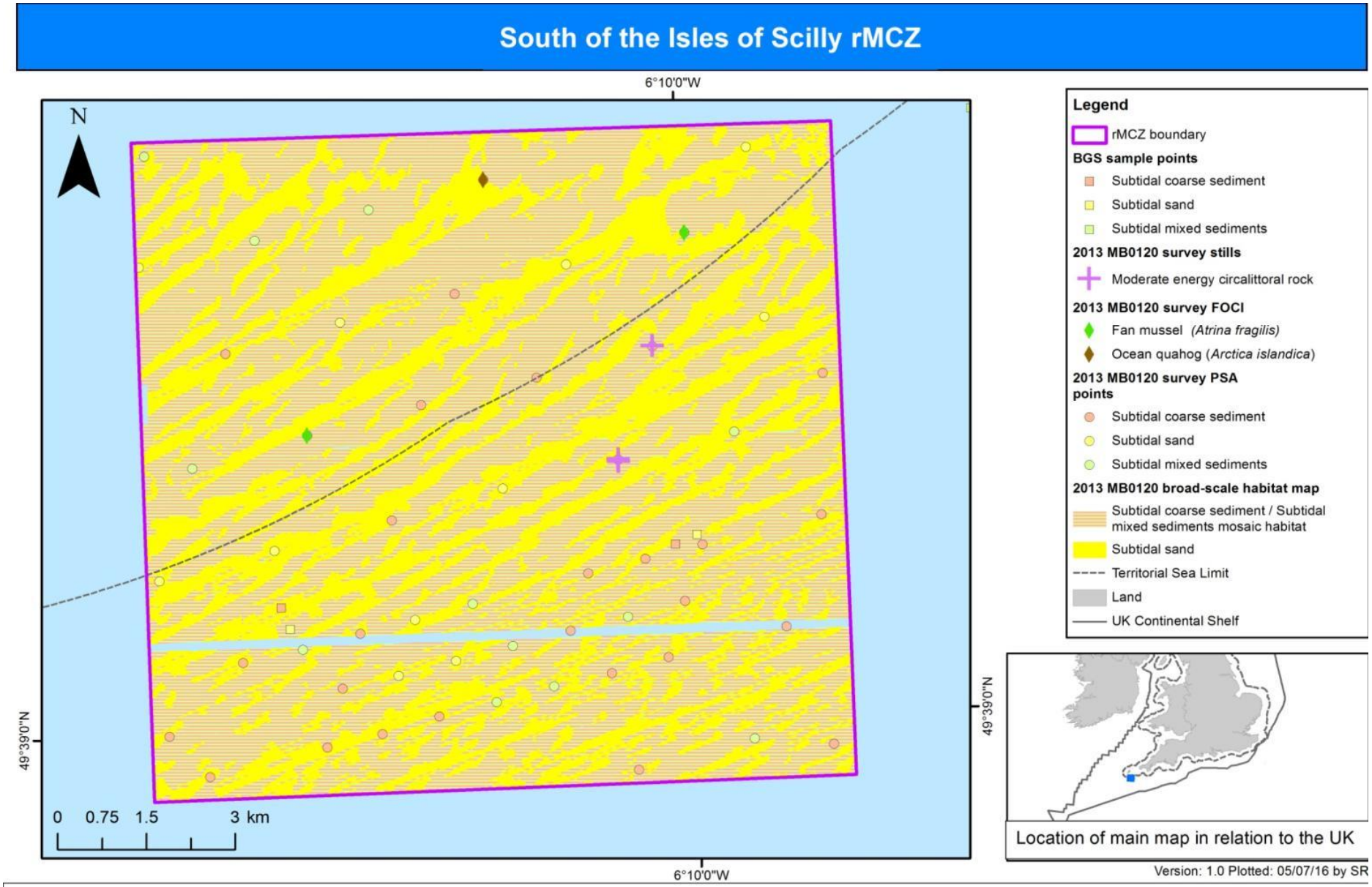


Figure 14: Map of broad scale habitats and species Features of Conservation Importance in South of the Isles of Scilly rMCZ

3.15 South Rigg rMCZ

South Rigg rMCZ was originally recommended by the Irish Sea Conservation Zone regional MCZ project[43] for the broad-scale habitat features **Low energy circalittoral rock, Subtidal sand** and **Subtidal mud,** the habitat Features of Conservation Importance (FOCI) **Mud habitats in deep water** and **Sea-pen and burrowing megafauna communities,** and the species FOCI **Ocean quahog (*Arctica islandica*)**.

The rMCZ was advised on by JNCC in 2014[2] and the broad-scale habitats **Subtidal mixed sediments** and **Moderate energy circalittoral rock** were included in that advice. The addition of these two features was based on the acquisition of data from the JNCC and AFBI North West Irish Sea Mounds (NWISM) survey and an MB0120 survey in 2012. Since our scientific advice in 2014, a habitat map has been created from the MB0120 survey that suggests the presence of **Subtidal coarse sediment** and records from Marine Recorder indicate the presence of **High energy circalittoral rock.** Therefore JNCC is also providing advice on these two broad-scale habitats. A review of the FOCI published in 2015[44] has resulted in **Mud habitats in deep water** being removed as an MCZ habitat FOCI and so is not included in our current scientific advice. The current advice includes **High energy circalittoral rock, Moderate energy circalittoral rock, Low energy circalittoral rock, Subtidal coarse sediment, Subtidal sand, Subtidal mud, Subtidal mixed sediments, Sea-pen and burrowing megafauna communities** and **Ocean quahog (*Arctica islandica*)**.

JNCC have undertaken an assessment to determine any requirement for revisions to our existing advice in light of any new data available for the features of the site. The assessment follows the JNCC MCZ Decision Tree process (Annex 1).

Table 69: South Rigg rMCZ 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 Rigg rMCZ (ISCZ06)	**High energy circalittoral rock**	**Low** (*)	There is an MB0120 habitat map which verifies the presence of the parent habitat (Circalittoral rock) in the north-east of the site. There are also four point records of the feature from video data collected during the North West Irish Seamounds (NWISM) survey in 2003; however these do not provide sufficient evidence of the feature's presence as they do not meet minimum patch size. Therefore confidence in the presence of the feature is Low.	**Low** (*)	There is a mapped extent of the parent habitat in the north-east of the site. There are also four point records of the feature from video data, however these do not provide evidence of the presence of High energy circalittoral rock at the minimum patch size and occur on a mapped extent of Moderate energy circalittoral rock. Therefore confidence in the extent of the feature is Low.
	Moderate energy circalittoral rock	**Moderate** (*High*)	Due to a new habitat map being available and video data from the NWISM survey being reanalysed revised advice was required. Moderate energy circalittoral rock is included on the NWISM habitat map and a mapped extent of the parent habitat is present in the north-east of the site in the MB0120 habitat map. There are 113 still images of the feature across the site; however these do not provide evidence of the presence of the feature at the minimum patch size. Therefore confidence in the presence of the feature is Moderate	**Moderate** (*High*)	Due to a new habitat map being available and video data from the NWISM survey being reanalysed revised advice was required. Moderate energy circalittoral rock is included on the habitat map from a survey in the north-west of the site. There is a mapped extent of the parent habitat in the north-east of the site but no ground-truth records which meet minimum patch size criteria area available to determine the energy level in this area. Confidence in the extent of the feature over the whole site is therefore Moderate.
	Low energy circalittoral rock	**No confidence** (*No confidence*)	There is a mapped extent of circalittoral rock from a new habitat map in the north east of the site; however there are still no ground-truthing records to verify the presence of Low energy circalittoral rock. Therefore, there is still no confidence in the presence of the feature.	**No confidence** (*No confidence*)	There is a mapped extent of circalittoral rock from a new habitat map in the north east of the site; however there are still no ground-truthing records to verify the presence of Low energy circalittoral rock. Therefore, there is still no confidence in the extent of the feature

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 confidence is supported by a mapped extent in the north-east of the site from an MB0120 survey. The mapped polygon includes two supporting ground-truth records, although these are outside the site boundary	**Moderate** (*)	There is a mapped extent of the feature on a habitat map from survey in the north-east of the site. As the mapped polygon only includes supporting ground-truth records outside the site boundary, confidence in feature extent is Moderate
	Subtidal sand	**High** *(High)*	New habitat maps in the northern section of the site are available, however the change in feature extent is minor and the 2014 advice does not require modification.	**High** *(High)*	New habitat maps in the northern section of the site are available, however the change in feature extent is minor and the 2014 advice does not require modification.
	Subtidal mud	**High** *(High)*	There are records from recent surveys and new habitat maps in the northern section of the site, however the change in feature extent is minor and does not require modified advice from 2014.	**High** *(High)*	There are records from recent surveys and new habitat maps in the northern section of the site, however the change in feature extent is minor and does not require modified advice from 2014.
	Subtidal mixed sediments	**High** *(High)*	Owing to new habitat maps becoming available and new interpreted ground-truth records, revised advice is required. High confidence is supported by 16 interpreted ground-truth records from a variety of sources and a habitat map from NWISM in the north-west of the site.	**Moderate** (*Moderate*)	Owing to new habitat maps becoming available and new interpreted ground-truth records, revised advice is required. There are multiple ground-truth records, however only four of them occur within the mapped extent of the habitat in the north-west of the site. The feature is not included in the habitat map in the north-east of the site, despite the presence of ground-truth records. This is because it was not possible to differentiate between rocky habitat and Subtidal mixed sediments. Therefore, confidence in extent is Moderate.
	Sea-pen and burrowing megafauna communities	**High** *(High)*	There are records from recent surveys; however there is no change in feature extent and therefore the 2014 advice does not require modification.	**High** *(High)*	There are records from recent surveys; however there is no change in feature extent and therefore the 2014 advice does not require modification.
	Ocean quahog (*Arctica islandica*)	**Low** *(Low)*	There are no new data pertaining to the feature, therefore no revised advice is required on confidence in presence and extent.	**Low** *(Low)*	There are no new data pertaining to the feature, therefore no revised advice is required on confidence in presence and extent.

The blue text represents the previous assessment score

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

Table 70: Summary of JNCC's conservation advice for features in South Rigg rMCZ

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F[22])	General Management Approach advised (MCZ Conservation Objective Guidance[32])	Rationale
South Rigg rMCZ (ISCZ06)	**High energy circalittoral rock**	**Low** *(*)*	**Maintain** *(*)*	Aggregated VMS data (2009-2013) indicate that demersal trawling occurs throughout the site. However, the ping data from 2009 to 2015 suggests that the activity is focussed over the sedimentary habitats and the rock habitats are avoided. The feature is not considered to be exposed to associated pressures. A maintain GMA is advised.
	Moderate energy circalittoral rock	**Low** *(Low)*	**Maintain** *(Maintain)*	
	Low energy circalittoral rock	**Not Assessed** *(Not Assessed)*	**Not Assessed** *(Not Assessed)*	N/A
	Subtidal coarse sediment	**Low** *(*)*	**Maintain** *(*)*	Aggregated VMS data (2009-2013) indicate that demersal trawling occurs throughout the site. However, the ping data for demersal fishing activity between 2009 and 2015 only showed one ping within the mapped extent of the feature. The feature is not considered to be exposed to associated pressures. A maintain GMA is advised.
	Subtidal sand	**Low** *(Low)*	**Recover** *(Recover)*	Updated VMS from 2009-2013 show no change in the levels of bottom contact gear coincident with the feature, from those in 2006-2009. No revised GMA required – Recover GMA remains.
	Subtidal mud	**Low** *(Low)*	**Recover** *(Recover)*	
	Subtidal mixed sediments	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) indicate that demersal trawling occurs throughout the site. This feature is considered as experiencing high exposure to associated pressures and therefore considered highly vulnerable. A recover GMS is advised.
	Sea-pen and burrowing megafauna communities	**Low** *(Low)*	**Recover** *(Recover)*	Updated VMS from 2009-2013 show no change in the levels of bottom contact gear coincident with the feature, from those in 2006-2009. No revised GMA required – Recover GMA remains.
	Ocean quahog (*Arctica islandica*)	**Low** *(Low)*	**Recover** *(Recover)*	

The blue text represents the previous assessment score

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

Table 71: South Rigg rMCZ feature risk assessment

Site (code)	Feature	Current risk	Future risk
South Rigg rMCZ (ISCZ06)	**High energy circalittoral rock**	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), physical change (to another seabed type), low and high siltation rate changes, penetration and/or disturbance of the substrate below the surface and penetration, surface abrasion: damage to seabed surface features, physical removal (extraction of substratum) and removal of target species.
	Moderate energy circalittoral rock	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling	**High** Feature is **highly sensitive** (with moderate/high confidence) to the removal of non-target species.
	Low energy circalittoral rock	**Not Assessed**	
	Subtidal coarse sediment	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), surface abrasion: damage to seabed surface features and physical removal (extraction of substratum).
	Subtidal sand	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling	**High** Feature is **highly sensitive** (with moderate/high confidence) to physical removal (extraction of substratum).
	Subtidal mud	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), organic enrichment and the removal of target and non-target species.
	Subtidal mixed sediments	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical change (to another seabed type), physical loss (to land or freshwater habitat), penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration, physical removal (extraction of substratum), introduction of microbial pathogens, introduction or spread of non-indigenous species and removal of non-target species.

Site (code)	Feature	Current risk	Future risk
	Sea-pen and burrowing megafauna communities	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling	**High** Feature is **highly sensitive** (with moderate/high confidence) to organic enrichment.
	Ocean quahog (*Arctica islandica*)	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling	**High** Feature is **highly sensitive** (with moderate/high confidence) to penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration and physical removal (extraction of substratum).

Table 72: South Rigg rMCZ feature data sufficiency assessment and additional conservation / ecological considerations

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	Q2a: Does the feature fill a 'gap' in the network AND have confidence score of at least moderate for feature presence?	Q2b: Is the feature at high risk of damage?	Outcome from Question 2 assessment
South Rigg rMCZ (ISCZ06)	**High energy circalittoral rock**	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** the feature is already adequately protected within the region	**Yes** (Current risk)	**Feature should be further considered –** JNCC advise that this feature should not be designated as there are limited data to support its presence in the site
	Moderate energy circalittoral rock	**Yes** (Moderate confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**			
	Subtidal coarse sediment	**Yes** (High confidence)	**No**	**Yes** (Moderate 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** (Moderate confidence)	**Data support designation of feature**			
	Sea-pen and burrowing megafauna communities	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			
	Ocean quahog (*Arctica islandica*)	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No** – while there is a replication gap for this species in the region, there is low confidence in feature presence	**Yes** (Current and future risk)	**Feature should be further considered –**JNCC advise that this feature should not be designated as there are limited data to support its presence in the site

Table 73: South Rigg rMCZ site level assessment

Question	Response
Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?	**N/A**
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?	**96.6%**
Q3: Does this site fill a 'gap' in the network based on revised confidence assessments in feature presence and extent?	**Yes** - for Moderate energy circalittoral rock, Subtidal mud, Subtidal mixed sediments, Ocean quahog (*Arctica islandica*) in the Irish Sea CP2 region. Currently there are no examples of Moderate energy circalittoral rock designated in an MPA in the Secretary of State waters part of the CP2 region. South Rigg rMCZ would fill a representativity gap for this feature, but it is not known how much habitat South Rigg rMCZ would contribute towards this feature's adequacy target (the minimum ENG target is 13%). Also 10.8% of Subtidal mud is designated within MPAs in the Secretary of State waters part of the CP2 region (the minimum ENG target is 15%). The site would add 1.8% to the target. Additionally, while the ENG minimum target for Subtidal mixed sediments (15%) has already been met in the Secretary of State waters part of the CP2 region, only 8.8% of the feature is designated within MPAs across the wider CP2 region (the target for the CP2 region is 10%). It is not known how much South Rigg rMCZ would contribute to reducing this shortfall. Finally there are currently less than three replicates of Ocean quahog (*Arctica islandica*) designated as a feature of an MPA in the region. The designation of this species in South Rigg rMCZ would fill this shortfall in replication in the CP2 region. However data for this species in the site are limited and JNCC advise that it is not designated in South Rigg rMCZ.

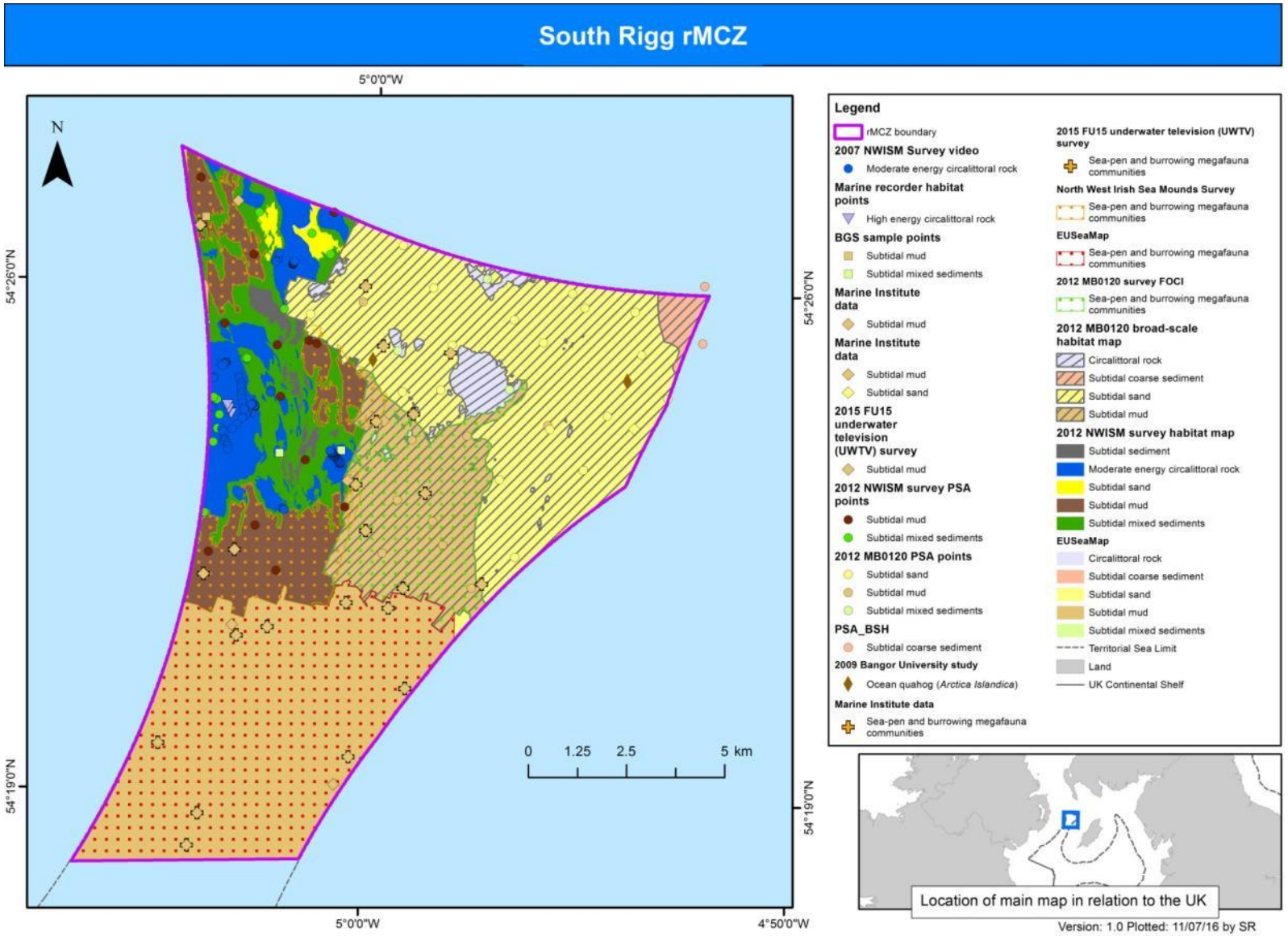


Figure 15: Map of broad scale habitats and species Features of Conservation Importance in South Rigg rMCZ

3.16 South-West Deeps (East) rMCZ

South-West Deeps (East) rMCZ was recommended by the Finding Sanctuary regional MCZ project[46] for the broad-scale habitats **Subtidal coarse sediment**, **Subtidal sand**, and **Deep-sea bed**[56]; and the **Celtic Sea Relict Sandbanks** geomorphological Feature of Conservation Importance (FOCI). JNCC has not provided scientific advice on the features found within South-West Deeps (East) rMCZ since JNCC and Natural England's 2012 scientific advice on the regional MCZ project's recommendations[47].

South-West Deeps (East) rMCZ has not been surveyed under the MB0120 project but has been subject to other data collection exercises. Data for the sites are available from the BGS seabed sediment PSA dataset, Marine recorder and EUSeaMap (2012). In 2012, Defra let a contract (MB0116) to support the MCZ designation process after submission of the recommendations from the regional projects. MB0116 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. Data collated under the Defra contract MB0116 also identified the species FOCI **Ocean quahog (*Arctica islandica*)** within the site. The broad-scale habitat **Subtidal mixed sediments** and species FOCI and **Native oyster (*Ostrea* edulis)** have also been identified in the site. A 2016 Marine Institute demersal fisheries survey found that the species FOCI **Fan mussel (*Atrina fragilis*)** was present within the site.

JNCC have undertaken an assessment to determine any requirement for revisions to our existing advice in light of any new data available for the features of the site. The assessment follows the JNCC MCZ Decision Tree process (Annex 1). The current advice includes **Subtidal coarse sediment**, **Subtidal sand, Subtidal mixed sediments, Deep-sea bed**[56]**, Celtic Sea Relict Sandbanks, Ocean quahog (*Arctica islandica*), Fan mussel (*Atrina fragilis*)** and **Native oyster (*Ostrea* edulis).**

[56] Note that subsequent scientific advice on the designation of EUNIS Level 3 habitats falling within 'Deep-sea bed' will be provided in February 2017 as part of JNCC's scientific advice package on fillings shortfalls in the MPA network

Table 74: South-West Deeps (East) rMCZ 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 (East) rMCZ (FS03)	**Subtidal coarse sediment**	**High** (Moderate)	While no new biophysical data are available, previously used British Geological Survey (BGS) ground truthing data have undergone a Quality Assurance (QA) procedure. 77 ground-truthing records confirm the presence of the feature within the site	**High** (Moderate)	While no new biophysical data are available, previously used British Geological Survey (BGS) ground truthing data have undergone a Quality Assurance (QA) procedure. Ground-truth data are well distributed through the site. There is a high degree of agreement between the modelled map and the ground-truthing data leading to high confidence in the predicted extent of the feature.
	Subtidal sand	**High** (Moderate)	While no new biophysical data are available, previously used British Geological Survey (BGS) ground truthing data have undergone a Quality Assurance (QA) procedure. 158 ground-truthing records confirm the presence of the feature within the site.	**High** (Moderate)	While no new biophysical data are available, previously used British Geological Survey (BGS) ground truthing data have undergone a Quality Assurance (QA) procedure. Ground-truth data are well distributed through the site. There is a high degree of agreement between the modelled map and the ground truthing data leading to high confidence in the predicted extent of the feature.
	Subtidal mixed sediments	**Low** (*)	This feature has not been previously assessed. There is only one ground-truth data point to verify the presence of this feature within the site and therefore confidence in feature presence is Low.	**Low** (*)	This feature has not been previously assessed. JNCC have Low confidence in the extent of this feature within South-West Deeps (East) rMCZ as there is only being a single data point with no supporting mapped extent.
	Deep-sea bed[56]	**High** *(High)*	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.	**High** *(High)*	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.
	Celtic Sea Relict Sandbanks	**High** *(High)*	No new biophysical data to support the presence and extent of this habitat. No revised advice on the confidence in feature presence required. Confidence in this feature is a direct parallel to confidence in the morphology of the geo-feature and remains high.	**High** *(High)*	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. Confidence in this feature is a direct parallel to confidence in the morphology of the geo-feature and remains high.
	Ocean quahog (*Arctica islandica)*	**Low** (*)	There is a single data point from 2009 that supports the presence of ocean quahog in the site, however no other data are available and therefore confidence in feature presence is Low.	**Low** (*)	There is a single data point to support the feature in the site and no indication that ocean quahog are present or absent in the rest of the site. Therefore our confidence in the distribution is low.

Site (Code)	Feature	Evidence Assessment Results			
		Confidence in presence	Rationale for confidence in Feature presence	Confidence in extent	Rationale for confidence in Feature extent
	Fan mussel (*Atrina fragilis*)	**Low** (*)	A single trawl in 2016 which recorded a single fan mussel supports the presence of the species in the site. No other data are available and therefore confidence in feature presence is low	**Low** (*)	There is only one data record to support the feature in the site and no indication that fan mussels are present or absent in the rest of the site. Therefore our confidence in feature distribution is low.
	Native oyster (*Ostrea edulis*)	**Low** (*)	Four records support the presence of the feature within the site. However these were collected between 2000 and 2002, and are more than 12 years old. No other data are available and therefore confidence in feature presence is low.	**Low** (*)	Four records support the feature within the site. The records are located in different parts of the site, they are over 12 years old and consequently our confidence in feature distribution is low.

The blue text represents the previous assessment score

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

Table 75: Summary of JNCC's conservation advice for features in South-West Deeps (East) rMCZ

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F[22])	General Management Approach advised (MCZ Conservation Objective Guidance[32])	Rationale for conservation advice
South-West Deeps (East) rMCZ (FS03)	**Subtidal coarse sediment**	**Low** *(Low)*	**Recover** *(Recover)*	Aggregated VMS data (2009-2013) broadly agrees with number of hours presented in gridded 2006-09 VMS data for bottom contacting gears coincident with the feature. The highest levels of trawling effort are located over the modelled extent of this feature. With exposure levels remaining high no revised GMA required – Recover GMA remains advised.
	Subtidal sand	**Low** *(Low)*	**Recover** *(Recover)*	
	Subtidal mixed sediments	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicate benthic trawling occurs across the site exposing this feature to low-moderate levels of associated pressures. The feature is considered highly sensitive to these pressures; due to the level of activity a Recover GMA is advised.
	Deep-sea bed[56]	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) broadly agrees with number of hours presented in gridded 2006-09 VMS data for bottom contacting gears coincident with the feature. No revised GMA required – Recover GMA remains advised.
	Celtic Sea Relict Sandbanks	**Low** *(*)*	**Maintain** *(*)*	Aggregated VMS data (2009-2013) broadly agrees with number of hours presented in gridded 2006-09 VMS data for bottom contacting gears coincident with the feature. No revised GMA required – Maintain GMA remains advised.
	Ocean quahog (*Arctica islandica)*	**Low** *(*)*	**M**aintain *(*)*	Aggregated VMS data (2009-2013) indicate benthic trawling occurs across the site exposing this feature to low-moderate levels of associated pressures. Due to the level of activity occurring, this feature is not considered to be moderately or highly vulnerable to any associated pressures and therefore a Maintain GMA is advised.
	Fan mussel (*Atrina fragilis*)	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicate benthic trawling occurs across the site exposing this feature to low-moderate levels of associated pressures. The feature is considered highly sensitive to these pressures; due to the level of activity a Recover GMA is advised.
	Native oyster (*Ostrea edulis*)	**Low** *(*)*	**Maintain** *(*)*	Aggregated VMS data (2009-2013) indicate benthic trawling occurs across the site exposing this feature to low-moderate levels of associated pressures. Due to the level of activity occurring, this feature is not considered to be moderately or highly vulnerable to any associated pressures and therefore a Maintain GMA is advised.

The blue text represents the previous assessment score

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

Table 76: South-West Deeps (East) rMCZ feature risk assessment

Site (code)	Feature	Current risk	Future risk
South-West Deeps (East) rMCZ (FS03)	**Subtidal coarse sediment**	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), surface abrasion: damage to seabed surface features and physical removal (extraction of substratum).
	Subtidal sand	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to physical removal (extraction of substratum).
	Subtidal mixed sediments	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical change (to another seabed type), physical loss (to land or freshwater habitat), penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration, physical removal (extraction of substratum), introduction of microbial pathogens, introduction or spread of non-indigenous species and removal of non-target species.
	Deep-sea bed[56]	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical change (to another seabed type), penetration and/or disturbance of the substrate below the surface and penetration, surface abrasion: damage to seabed surface features, physical removal (extraction of substratum), removal of target and non-target species, organic enrichment and low and high siltation rate changes.
	Celtic Sea Relict Sandbanks	**Not assessed** – Geological/Geomorphological Feature	
	Ocean quahog (*Arctica islandica*)	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to penetration and/or disturbance of the substrate below the surface of the

Site (code)	Feature	Current risk	Future risk
			seabed, shallow abrasion/penetration: damage to seabed surface and penetration and physical removal (extraction of substratum).
	Fan mussel (*Atrina fragilis*)	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), siltation rate changes (high), penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration, physical removal (extraction of substratum), introduction or spread of non-indigenous species and removal of non-target species.
	Native oyster (*Ostrea edulis*)	**Low** Feature is **not moderately or highly vulnerable** to any pressures.	**High** Feature is **highly sensitive** (with moderate/high confidence) to physical change (to another seabed type), removal of target species, introduction of microbial pathogens and introduction or spread of non-indigenous species

Table 77: South-West Deeps (East) rMCZ feature data sufficiency assessment and additional conservation / ecological considerations

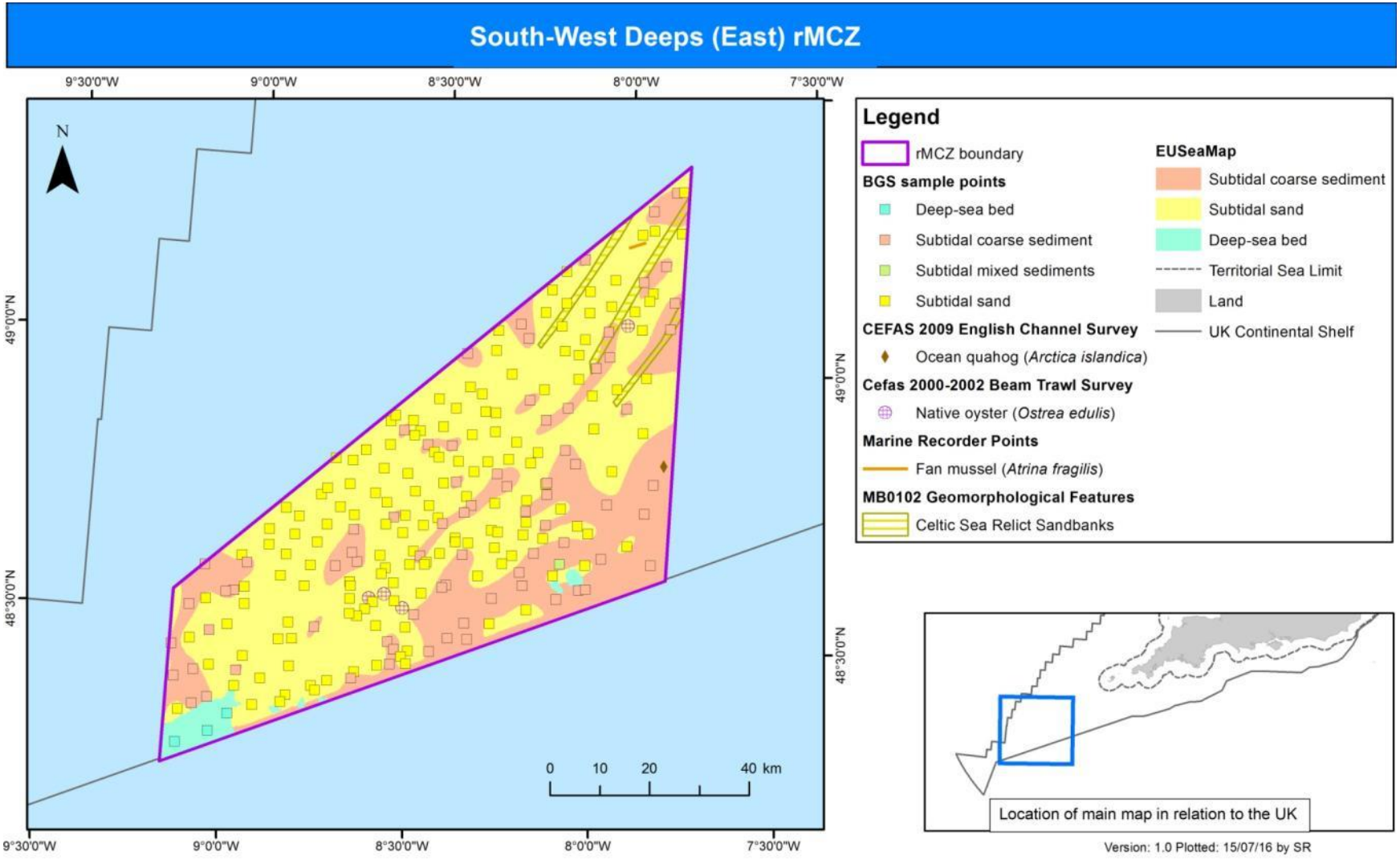
Site (code)	Feature	Q1a. Confidence score of at least moderate for feature presence?	Q1b. Is 1a based only on parent habitat being present?	Q1c. Confidence score of at least moderate for extent / distribution?	Outcome from Question 1 assessment	Q2a: Does the feature fill a 'gap' in the network AND have confidence score of at least moderate for feature presence?	Q2b: Is the feature at high risk of damage?	Outcome from Question 2 assessment
South-West Deeps (East) rMCZ (FS03)	**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 mixed sediments	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** the feature is already adequately protected within the region	**No**	**Scientific evidence does not justify designation as this stage**
	Deep-sea bed	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**[56]			
	Celtic Sea Relict Sandbanks	**Yes** (High confidence)	**No**	**Yes** (High confidence)	**Data support designation of feature**			
	Ocean quahog (*Arctica islandica)*	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No** – while there is a replication gap for this species in the region, there is low confidence in feature presence	**Yes** (Future risk)	**Feature should be further considered –** JNCC advise that this feature should not be designated as there are limited data to support its presence in the site
	Fan mussel (*Atrina fragilis*)	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No** – while there is a replication gap for this species in the region, there is low confidence in feature presence	**Yes** (Current risk)	**Feature should be further considered –** JNCC advise that this feature should not be designated as there are limited data to support its presence in the site

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	Q2a: Does the feature fill a '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
	Native oyster (*Ostrea edulis*)	**No** (Low confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No** – while there is a replication gap for this species in the region, there is low confidence in feature presence	**Yes** (Future risk)	**Feature should be further considered –** JNCC advise that this feature should not be designated as there are limited data to support its presence in the site

Table 78: South-West Deeps (East) rMCZ site level assessment

Question	Response
Q1: Are there grounds for considering designating more features at this site in order to fully protect one or more features which do have sufficient confidence?	**N/A**
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?	**100%**
Q3: Does this site fill a 'gap' in the network based on revised confidence assessments in feature presence and extent?	**Yes** - for Subtidal coarse sediment, Subtidal sand, Deep-sea bed, Ocean quahog (*Arctica islandica*), Fan mussel (*Atrina fragilis*) and Native Oyster (*Ostrea edulis*) in the Western Channel & Celtic Seas CP2 region. Currently 7.1% of Subtidal coarse sediment is designated within MPAs in the Secretary of State waters part of the CP2 region (the minimum ENG target is 17%). The site would add 4.7% to the target. Additionally, 8.9% of Subtidal sand is designated within MPAs in the Secretary of State waters part of the CP2 region (the minimum ENG target is 15%). The site would fill the shortfall in the MPA network (adding 12.2%). Currently 12% of Deep-sea bed is designated within MPAs in the Secretary of State waters part of the CP2 region (JNCC recommends a target of 30%)[57]. The site would add 2.3% to the target. Finally there is currently less than three replicates of Ocean quahog (*Arctica islandica*), Fan mussel (*Atrina fragilis*) and Native oyster (*Ostrea edulis*) designated as features of MPAs in the region. The designation of these species in South-West Deeps (East) rMCZ would fill these shortfalls in replication in the CP2 region. However data for these species in the site are limited and JNCC advise that they are not designated in South-West Deeps (East) rMCZ.

[57] INSERT HYPERLINK TO 2016 NETWORK REPORT



3.17 Swallow Sand MCZ

Swallow Sand MCZ was designated in November 2013 for the broad-scale habitat features **Subtidal coarse sediment**, **Subtidal sand** and the geological feature **North Sea Glacial Tunnel Valleys (Swallow Hole)**. Additional features to those recommended by the regional MCZ project have been identified within the site: **Subtidal mud** and **Subtidal mixed sediments**. The habitat Feature of Conservation Importance (FOCI) **Sea-pen and burrowing megafauna communities** and species FOCI **Ocean quahog (*Arctica islandica*)** have also been found to be present in the site.

Table 79: Swallow Sand 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
Swallow Sand MCZ (NG16)	**Subtidal mud**	**High** (*)	High confidence in the presence of the feature is supported by 34 interpreted ground-truth records.	**Moderate** (*)	Interpreted ground-truth data are concentrated in the north-west of the site over the Swallow Hole feature, and are also scattered through site. The BGS modelled map corresponds well with the available ground-truth data. Ground-truth data collected by the 2016 monitoring survey suggests the extent of the feature may be greater than the current mapped extent. Therefore confidence in feature extent has been assessed as Moderate.
	Subtidal mixed sediments	**High** (*)	JNCC has High confidence in the presence of the feature which is supported by 44 interpreted ground-truth records.	**Low** (*)	The feature is only supported by ground truth data, with no extent indicated by the BGS modelled habitat map. The majority of records are located in the north-west of the site over an area modelled as Subtidal mud. The remaining records are scattered across the site over areas modelled to be Subtidal sand. As only ground-truthing data are available to determine the extent of Subtidal mixed sediments, confidence in feature extent is Low.
	Ocean quahog (*Arctica islandica*)	**High** (*)	JNCC has High confidence in the presence of this feature as there are records of 143 individuals from 74 grabs within the last six years.	**High** (*)	Records from the MB0120 surveys contain information on the abundance of individuals found and these data are less than six years old. Available records indicate that Ocean quahog are present throughout the site, therefore confidence in species distribution is High.
	Sea-pen and burrowing megafauna communities	**High** (*)	JNCC has High confidence in the presence of this feature as there are seven video tows available which support the feature in the site.	**Moderate** (*)	There are no data available beyond the extent of the available video information. More than half of the sample data occur over areas modelled and ground truthed as Subtidal mud. However, some of the video tows occur over areas modelled to be Subtidal sand. This is a substrate that is not included in the current definition of Sea-pen and burrowing megafauna communities (although communities can occur on Subtidal sand where the sand is relatively muddy). Information from the 2016 monitoring survey indicates there is a greater extent of the habitat occurring over Subtidal mud in the site than previously thought. Expert judgement has been used to assign Moderate confidence in feature extent.

The blue text represents the previous assessment score

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

Table 80: Summary of JNCC's conservation advice for features in Swallow Sand MCZ

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F[22])	General Management Approach advised (MCZ Conservation Objective Guidance[32])	Rationale
Swallow Sand MCZ (NG16)	**Subtidal mud**	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicates otter trawling is occurring within the site. This feature is moderately sensitive to the pressures associated with benthic trawling and consequently a recover GMA is advised. In addition to fishing. Infrastructure intersects with the mapped extent of this feature (pipelines and wrecks). The presence of this infrastructure further supports the advised Recover GMA.
	Subtidal mixed sediments	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicates otter trawling is occurring within the site with highest levels occurring over ground-truthed data of this feature. Due to the moderate high sensitivity to the associated pressures of benthic trawling a recover GMA is advised. In addition to fishing. Infrastructure intersects with the mapped extent of this feature (pipelines and wrecks). The presence of this infrastructure further supports the advised Recover GMA.
	Ocean quahog (*Arctica islandica*)	**Low** *(*)*	**Recover** *(*)*	
	Sea-pen and burrowing megafauna communities	**Low** *(*)*	**Recover** *(*)*	Aggregated VMS data (2009-2013) indicates otter trawling is occurring within the site. This feature is moderately sensitive to the pressures associated with benthic trawling and consequently a Recover GMA is advised.

The blue text represents the previous assessment score

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

Table 81: Swallow Sand MCZ feature risk assessment

Site (code)	Feature	Current risk	Future risk
Swallow Sand MCZ (NG16)	**Subtidal mud**	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical loss (to land or freshwater habitat), organic enrichment and the removal of target and non-target species.
	Subtidal mixed sediments	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling and infrastructure.	**Moderate** Feature is **moderately sensitive** (with moderate/high confidence) to one/more pressures; or Feature is **highly sensitive** (with low confidence) to physical change (to another seabed type), physical loss (to land or freshwater habitat), penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration, physical removal (extraction of substratum), introduction of microbial pathogens, introduction or spread of non-indigenous species and removal of non-target species.
	Ocean quahog (*Arctica islandica*)	**Moderate** Feature is **moderately vulnerable** to one/more pressures associated with benthic trawling and infrastructure.	**High** Feature is **highly sensitive** (with moderate/high confidence) to penetration and/or disturbance of the substrate below the surface of the seabed, shallow abrasion/penetration: damage to seabed surface and penetration and physical removal (extraction of substratum).
	Sea-pen and burrowing megafauna communities	**High** Feature is **highly vulnerable** to one/more pressures associated with benthic trawling.	**High** Feature is **highly sensitive** (with moderate/high confidence) to organic enrichment.

Table 82: Swallow Sand MCZ feature data sufficiency assessment and additional conservation / ecological considerations

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	Q2a: Does the feature fill a '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
Swallow Sand MCZ (NG16)	**Subtidal mud**	**Yes** (High confidence)	**No**	**Yes** (Moderate confidence)	**Data support designation of feature**			
	Subtidal mixed sediments	**Yes** (High confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**No –** the feature is already adequately protected within the region	**No**	**Scientific evidence does not justify designation as this stage**
	Ocean quahog (*Arctica islandica*)	**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**			

Table 83: Swallow Sand 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?	N/A
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?	N/A
Q3: Does this site fill a 'gap' in the network based on revised confidence assessments in feature presence and extent?	**Yes –** for Subtidal mud and Sea-pen and burrowing megafauna communities in the Northern North Sea CP2 region. The ENG minimum target for Subtidal mud (15%) has already been met in the Secretary of State waters part of the CP2 region. However, only 5.6% of the feature is designated within MPAs across the wider CP2 region (the target for the CP2 region is 10%). It is not known how much Swallow Sand MCZ would contribute to reducing this shortfall. Additionally less than three replicates of Sea-pen and burrowing megafauna communities are designated as a feature of an MPA in the region and Swallow Sand MCZ would fill this shortfall in the CP2 region.

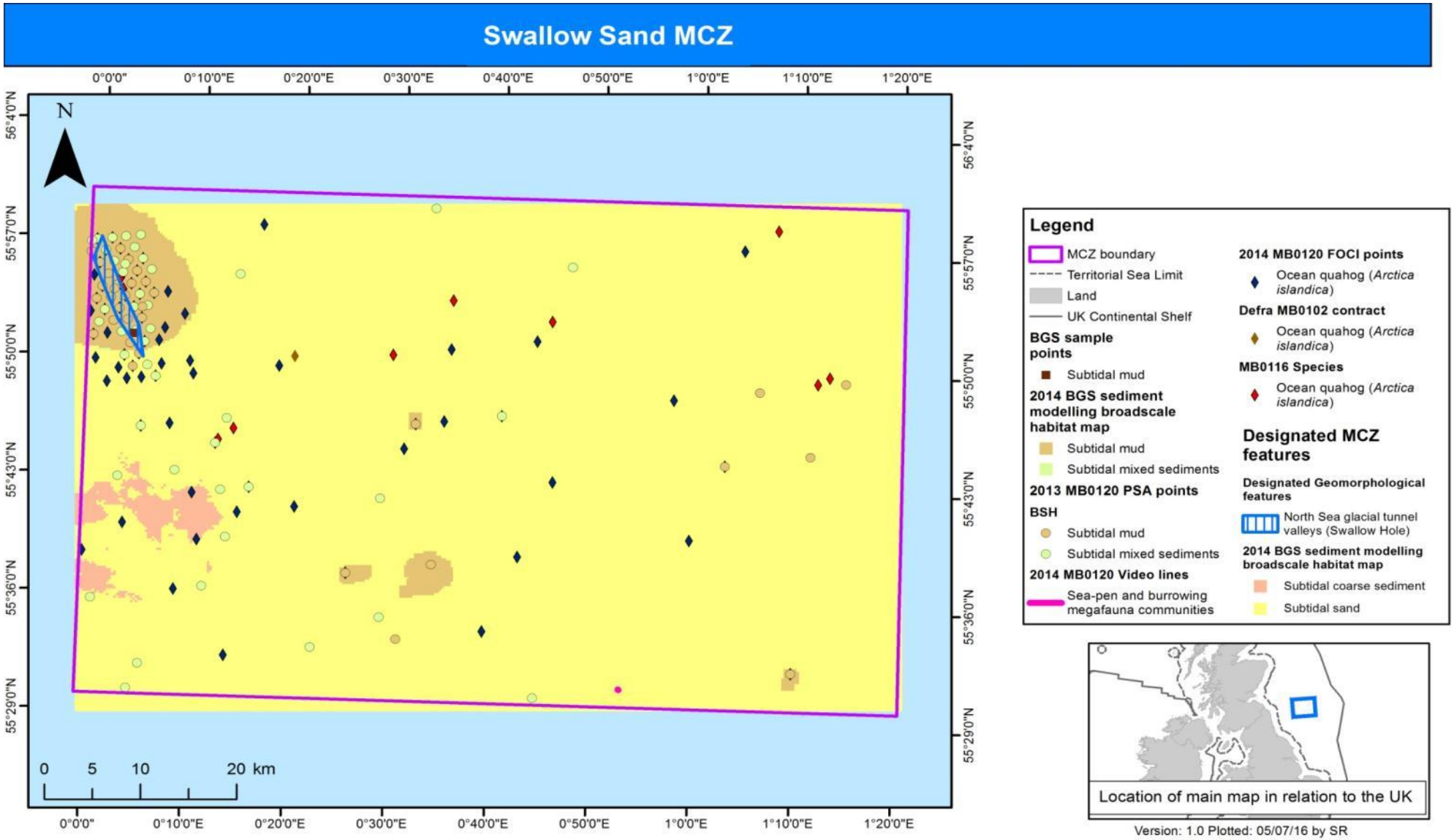


Figure 17: Map of broad scale habitats and species Features of Conservation Importance in Swallow Sand MCZ

3.18 The Canyons MCZ

The Canyons MCZ was designated in 2013 for the broad-scale habitat **Deep-sea bed** and the habitat Feature of Conservation Importance (FOCI) **Cold-water coral reefs**. Since designation, new survey data suggests the presence of two additional habitat FOCI; **Coral gardens** and **Sea-pen and burrowing megafauna communities**. These two features are therefore being considered for addition to the designation order for this site within our current advice.

Table 84: The Canyons MCZ Evidence Assessment Summary

The Canyons MCZ (FS 01)	Feature	Evidence Assessment Results			
		Confidence in presence	Rationale for confidence in Feature presence	Confidence in extent	Rationale for confidence in Feature extent
	Coral gardens	**Moderate** (*)	There are 13 sections of video from three ROV dives that verify Coral gardens. These data have not been sufficiently quality assured but the presence of the habitat has been verified. Confidence in feature presence has therefore been lowered to Moderate.	**Low** (*)	The area of the site covered by the ROV survey is relatively small and the parent habitat of the feature is widely distributed. As the extent of the feature cannot be delineated beyond the ROV dive locations, confidence in extent is Low
	Sea-pen and burrowing megafauna communities	**High** (*)	High confidence in presence is supported by seven sections of video from one ROV dive	**Low** (*)	The area of the site covered by the ROV survey is relatively small and the parent habitat of the feature is widely distributed. As the extent of the feature cannot be delineated beyond the ROV dive locations, confidence in extent is Low

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

Table 85: Summary of JNCC's conservation advice for features in The Canyons MCZ

Site (code)	Feature	Confidence in Feature condition (MCZ Technical Protocol F[22])	General Management Approach advised (MCZ Conservation Objective Guidance[32])	Rationale for conservation advice
The Canyons MCZ (FS01)	**Coral gardens**	**Low** (*)	**Recover** (*)	Many of the records of Coral gardens occur within mapped extent of Cold-water coral reefs where direct evidence of damage was recorded in a MESH habitat survey (2007)[47]. In addition, there is direct evidence of discarded fishing gear on the seabed from recent data. A Recover GMA is advised based on direct evidence.
	Sea pen and burrowing megafauna communities	**Low** (*)	**Maintain** (*)	Aggregated VMS data suggests that demersal trawling activity does take place within The Canyons MCZ; however there was a total of less than 15 hours of activity over records of the feature between 2009 and 2013. These levels are low enough that they could be attributed to non-fishing activity There is some indication of set-netting over records of this feature, but it is not possible to relate hours of activity to associated pressures. As a result the advised GMA is Maintain.

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

Table 86: The Canyons MCZ feature risk assessment

Site (code)	Feature	Current risk	Future risk
The Canyons MCZ (FS01)	**Coral gardens**	**N/A** – there is direct evidence that the feature has been damaged.	**High** Feature is **highly sensitive** (with moderate/high confidence) to the removal of non-target species.
	Sea-pen and burrowing megafauna communities	**Low** Feature is **not moderately or highly vulnerable** to any pressures.	**High** Feature is **highly sensitive** (with moderate/high confidence) to organic enrichment.

Table 87: The Canyons MCZ feature data sufficiency assessment and additional conservation / ecological considerations

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	Q2a: Does the feature fill a '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
The Canyons MCZ (FS01)	**Coral gardens**	**Yes** (Moderate confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**Yes** – this species is not adequately replicated within the region	**Yes** (Current and Future risk)	**Conservation benefits support priority feature designation**
	Sea pen and burrowing megafauna communities	**Yes** (High confidence)	**No**	**No** (Low confidence)	**Move to Question 2 of the feature assessment**	**Yes** – this species is not adequately replicated within the region	**Yes** (Future risk)	**Conservation benefits support priority feature designation**

Table 88: The Canyons 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?	**N/A**
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?	**N/A**
Q3: Does this site fill a 'gap' in the network based on revised confidence assessments in feature presence and extent?	**Yes** - for Coral gardens and Sea-pen and burrowing megafauna communities in the Western Channel & Celtic Seas CP2 region. Currently there are no replicates of Coral gardens and less than three replicates of Sea-pen and burrowing megafauna communities designated as a feature of an MPA in the region. The designation of these species in The Canyons MCZ would help to fill or complete these shortfalls in replication in the CP2 region.

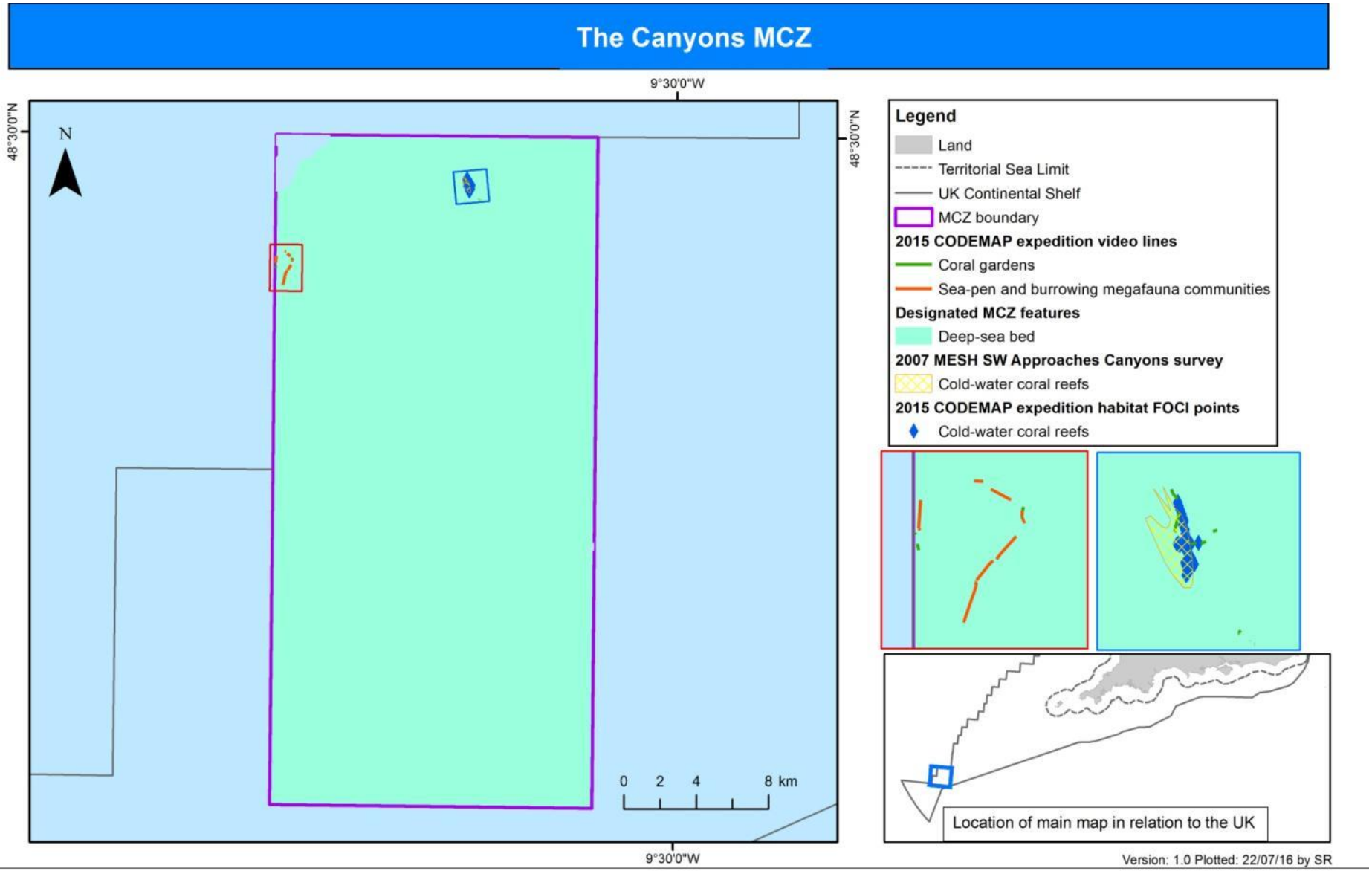
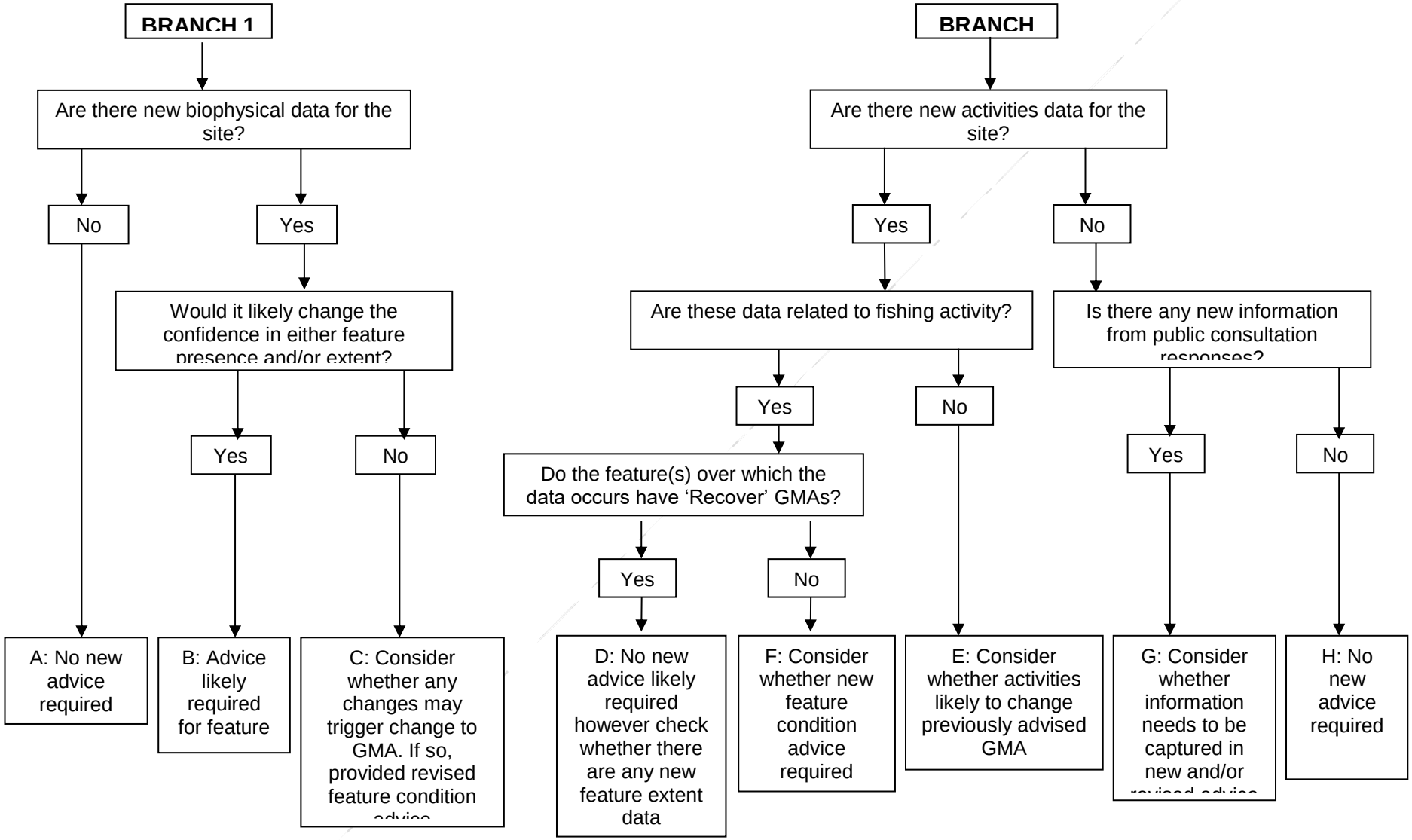


Figure 18: Map of Features of Conservation Importance in The Canyons MCZ

Annex 1: Decision Tree Process

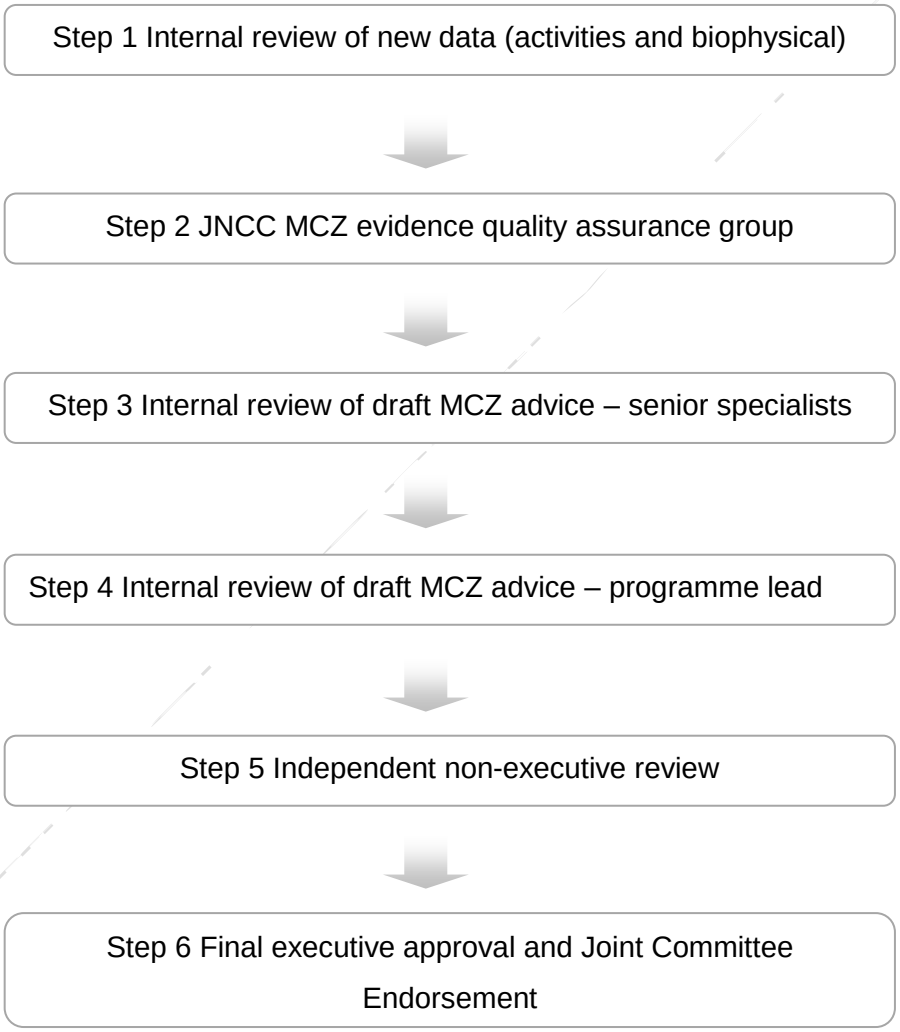


Annex 2: Statement on JNCC's Quality Assurance procedures undertaken for the 2016 pre-consultation MCZ advice

This Annex provides a summary of the quality assurance (QA) processes on JNCC's 2016 pre-consultation advice to ensure its scientific advice is robust and in accordance with both JNCC's internal Evidence QA policy and the Government Chief Scientific Adviser's guidelines for preparing scientific advice[58].

Figure 19 outlines the steps in the process adopted by JNCC and the subsequent text provide details regarding each step. It should be noted that each step in the QA process relies on the previous step having been undertaken in a robust manner in order to ensure that no systematic issues are replicated through the advice.

Figure 19: The QA process for JNCC's 2016 pre-consultation MCZ advice



[58] 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 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[59] compliant, are required of all such data, even where it has been subject to a separate QA process by the data provider prior to delivery to JNCC.

These data were also considered by the MCZ team who conducted an in depth review of the data whilst undertaking the MCZ assessments contained within this advice. Any issues with the data were flagged with the Marine Evidence team and resolved with the data providers where possible. Where issues were not resolved, these limitations to the data were logged and incorporated into our advice, and further considered at subsequent steps in the QA process.

Step 2 JNCC MCZ Evidence Quality Assurance Group

This formal JNCC group (Terms of Reference are provided in Annex 5 of JNCC's 2014 advice[60]) reviewed the biophysical data available for each feature and made concluded on the appropriateness of the use of those data. Key decisions and conclusions are recorded within the minutes of the Group meetings. Where issues with data were identified, they were logged with the Marine Evidence team and resolved with the data providers where it was possible to do so. Where issues were not resolved, any limitations to the data that impacted JNCC's assessments were logged and incorporated into our advice, and further considered at subsequent steps in the QA process.

The Group also reviewed the confidence scores assigned in draft by the MCZ team for the feature presence and feature extent assessments. This review considered the evidence available to support the score for that feature. Where necessary, expert judgement 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 MCZ team and were reviewed by senior specialists with expertise in the relevant topics (evidence, fisheries pressures, conservation advice). The specialists review focused

[59] Information on INSPIRE. Available at: http://data.gov.uk/location/inspire
[60] JNCC's pre-consultation scientific advice on Tranche Two MCZ. Available at: http://jncc.defra.gov.uk/PDF/140627_final_JNCCT2preconsultation_MCZAdvice_2014_V5_0.pdf

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 package, incorporating comments and changes made by senior staff, was reviewed by the MPA Programme Leader. This review did not consider the underlying data used to form this advice, instead it focussed on the results and explanations together with checking the application of protocols and guidance and earlier QA steps.

Step 5: Independent non-executive review

The advice was then shared with the non-executive Joint Committee MPA Sub Group for their QA of the process to derive the assessments and conclusions, together with a review of whether the work was broadly fit for purpose. The group provides independent scientific advice and scrutiny to JNCC, and comprises independent specialists drawn from wider academic, public and private sector communities. Their review did not incorporate a review of the data underlying the advice.

Step 6: Executive approval and Joint Committee endorsement

Any comments received from Step 5 were logged together with subsequent actions to ensure a full audit of changes was available. The final advice was reviewed by the MPA Programme Leader and signed off by the Marine Director on behalf of JNCC's Executive Management Board. Any changes that were made during this sign off process were recorded in the comments log.

The MPA Sub Group Chair recommended the final results to the JNCC Joint Committee. The Chair of the Joint Committee reviewed the recommendation and endorsed the advice as of sufficient quality to be sent to Defra.