Natural England Joint Publication JP028

Summary of Natural England's confirmed advice provided to Defra on Marine Conservation Zones to be considered for designation in 2019

First published 31st May 2019

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ISBN 978-1-78354-528-5

Marine Conservation Zones

Summary of Natural England's confirmed advice provided to Defra on Marine Conservation Zones to be considered for designation in 2019

Advice Overview

Executive summary

This report provides a summary of Natural England's confirmed post-consultation MCZ advice for each Regional Project recommended MCZ and new site option which are candidates for designation in Tranche 3. This post-consultation advice was provided to Defra in November 2018.

Marine Conservation Zones (MCZs) are an important tool in England's protection of the marine environment. They support delivery of the Government's obligations under the Marine and Coastal Access Act 2009 and form part of an ecologically coherent network of Marine Protected Areas (MPAs) in the North East Atlantic that will help achieve Government's vision for sustainable, productive, healthy and biologically diverse seas. Natural England's role is to provide evidence based scientific advice to support Government's decision making.

In July 2012[1], Natural England and the Joint Nature Conservation Committee (JNCC) submitted to Defra their advice package on the 127 site recommendations made by the four regional MCZ projects. Since then considerable amounts of new data have become available that are pertinent to features within the Regional Project recommended MCZs (rMCZs). This includes information provided during public consultations conducted by Defra in 2012–2013 on 31 Tranche 1 rMCZs and in 2015 on 23 Tranche 2 rMCZs and through dedicated verification surveys. To support the Government's decisions on the inshore sites consulted on and considered for designation in each of the first two tranches, Natural England has previously provided scientific advice to Defra in November 2013 (Tranche 1 advice for 25 inshore rMCZs[2]), December 2014 (Tranche 2 pre-consultation advice for 29 inshore rMCZs[3]), January 2016 (Tranche 2 post-consultation advice for 16 inshore rMCZs[4]) and February 2017 (Tranche 3 pre-consultation advice for 43 MCZs and rMCZs[5])

There are currently 50 MCZs in waters around England and offshore of Northern Ireland; known as Secretary of State waters, designated by Defra as part of Tranche 1 in November 2013 and as part of Tranche 2 in January 2016. Tranche 2 MCZs were designated following the Government's manifesto commitment to create a 'blue belt' to protect marine habitats and species and helped to fill some of the 'big gaps' (JNCC 2014) in the Marine Protected Area (MPA) network, such as where a habitat or species was not protected in a biogeographic region.

Defra's aim for the third tranche is to be comprehensive and to substantially complete the Government's commitment to the 'blue belt', by addressing ecological gaps in the network of MPAs Secretary of State waters.

Ahead of selecting Tranche 3 sites for consultation, Defra requested that Natural England and JNCC provide updated advice on sites recommended by the regional MCZ projects, and to identify any potential new site options beyond the regional project recommended MCZs that could fill the remaining ecological gaps (JNCC 2016) for both habitats and species in the MPA network. Defra also requested advice on 3rd party proposed Highly Mobile Species features. Natural England provided our pre-consultation advice in February 2017[5]. Defra subsequently carried out a public consultation from 8th June 2018 to 20th July 2018 on 35 inshore sites recommended by the Regional Projects (115 features in 22 undesignated rMCZs, and 24 undesignated (further) features in 13 MCZs designated in Tranche 1 or Tranche 2), four inshore new

[1] JNCC and Natural England (2012). JNCC and Natural England's advice to Defra on recommended Marine Conservation Zones. This was followed by an amendments report in December 2012.
[2] Natural England (2013). Natural England's advice to Defra on proposed Marine Conservation Zones for designation in 2013.
[3] Natural England (2014). Natural England's advice to Defra on recommended Marine Conservation Zones to be considered for consultation in 2015.
[4] Natural England (2016). Natural England's advice to Defra on proposed Marine Conservation Zones to be considered for designation in Tranche 2.
[5] Natural England (2018) Summary of Natural England's confirmed advice provided to Defra on Marine Conservation Zones to be considered for consultation in 2018

site options with a total of 13 features, and two new sites solely for two Highly Mobile Species features. This document provides Natural England's confirmed post-consultation advice to Defra on the above candidate Tranche 3 sites, taking into account evidence received since submission of our pre-consultation advice, and evidence received during the public consultation.

We have assessed scientific confidence in that evidence for feature presence and extent and we have also provided post-consultation advice on a General Management Approach (GMA)[6] for each feature, based on consideration of feature condition. We have assessed Highly Mobile Species features, including smelt *Osmerus eperlanus* against the Highly Mobile Species principles and provided advice on a GMA for these as well. Natural England's summary of advice covers the inshore MCZs under consideration in Tranche 3, and JNCC has provided complementary advice on the offshore sites.

When compiling our advice we have complied with the Government Chief Scientific Adviser's guidelines for preparing scientific advice. Our assessments followed published peer-reviewed protocols and used the best available evidence at the time. Our advice has been comprehensively checked and quality assured through our internal processes. Overall we are content that our advice is a quality-assured product, fit for purpose to assist Government in making decisions on the designation of MCZs.

Key findings from our post-consultation assessments of the inshore Regional Project proposed MCZs (pMCZs) and new site options

In total, we are providing post-consultation advice on confidence in presence and extent and the General Management Approach (GMA) for the **154 features** from **41 pMCZs and MCZs** included in the Tranche 3 consultation. This consists of:

- 24 further features for 13 existing MCZs (sites designated in Tranche 1 or Tranche 2) of which three features in three different sites are highly mobile species
- 115 features in 22 undesignated pMCZs from the original Regional Projects proposed sites list of which three features in three different sites are highly mobile species
- 13 features in four new pMCZ site options, previously not identified by the Regional Projects of which one feature is a highly mobile species
- Two highly mobile species features in two new Highly Mobile Species pMCZs

In summary, we are advising that there are scientific grounds or additional conservation/ecological considerations to support designation of 153 features in 41 sites. We are advising that there is no longer sufficient evidence to support designation of one feature in one site.

The methodology for the development of the advice is detailed in **Section 2** of this document. Further detail on the key findings of our assessments is detailed in **Section 3** of this document.

The full assessment results, site descriptions and relevant additional advice for each individual site can be found in **Annex 1** for regional project sites and **Annex 2** for new site options.

Acknowledgements

The Senior Responsible Officer Samantha King, project managers Richard Cook and Louisa Knights, and the project management team Alex Baker, Caroline Carr, and Emily Kirkham, wish to thank the following

[6] The General Management Approach (GMA) indicates how a feature can achieve its conservation objective and is either 'Maintain' if the feature is currently achieving its conservation objective or 'Recover' if it falls below its conservation objective.

individuals for their work in producing this advice: from the national teams; Lucy Abram, Maria Alvarez, Alex Banks, Tom Barnfield, Sean Bennett, Laurence Browning, Ross Bullimore, Richard Caldow, Ruth Cantrell, Victoria Copley, Roger Covey, Emma Dade, Bart Donato, Mark Duffy, David Evans, Georgina Evans, Alex Fawcett, Tim Fegan, Laura Gannon, Zoe Gorvett, Andy Graham, Ben Green, Tom Hardy, James Highfield, Nikki Hiorns, Corallie Hunt, Neil Irvine, Paul Ivory, Charlotte Johnson, Jan Maclennan, Charlotte Marshall, Eddy Mayhew, Mike Meadows, Clare Miller, Angela Moffat, Aoife Ni Neachtain, Heidi Guille, Chris Pirie, Joanna Redgwell, Jim Robinson, Helen Rowell, Ian Saunders, Hazel Selley, Joana Smith, Claire Tancell, Dylan Todd, Duncan Vaughan, Randy Velterop, Rebecca Walker, Emma Wheater, Rob Whiteley, Rachel Williams and, from the area teams: Jane Alpine, Stephanie Ashman, Nadine Atchinson-Balmond, Alison Atterbury, Elizabeth Bailey, Katy Barrett, Gavin Black, Naomi Brookes, Jo Brooksbank, Kate Bull, Maxine Chavner, Ingrid Chudleigh, Hilary Crane, Conor Donnelly, Katie Finkill-Coombs, Angela Gall, Richard Glasson, Emily Hardman, Sue Harrison, Miriam Harrison, Giulietta Holly, Liz Hopley, Melina Jack, Lisa Jenner, Mark Johnston, Audrey Jones, Emma Kelman, Alice Kimpton, Andrew Knights, Rebecca Korda, Rob Lloyd, Jennifer Love, Lucy May, Alison McAleer, Sangeeta McNair, Andy Millar, Anna Millard, Richard Morgan, Jenny Murray, Andrej Narozanski, Katherine Nisbet, Kate Owen, Miriam Parish, Mel Parker, Georgia Patt, Rhiannon Pipkin, Ruth Porter, Ros Preston, Christina Relf, George Ridsdale, Georgina Roberts, Helena Robson, Trudy Russell, Catherine Scott, Christine Singfield, Kate Sugar, Victoria Taylor, Fiona Tibbitts, Dee Stephens, Carolyn Waddell, Hannah Wood and Elaine Young. We would also like to thank the area team leaders; Stephen Ayliffe, Ingrid Chudleigh, Eamon Crowe, Clive Doarks, Rob Lloyd, David Marshall, David Overton, Helen Rawson, Helen Trapp and Nik Ward.

We also wish to thank the Chief Scientist, Tim Hill and the Director of Government Advice, Jonathan Burney for their contributions to the quality assurance and review process.

From JNCC, we would like to thank Hannah Carr, Pete Chaniotis, Alice Cornthwaite, Jon Davies and Louisa Jones

Finally, we would also like to thank the Inshore Fisheries and Conservation Authorities, Marine Management Organisation, Environment Agency and other Regulators and stakeholders detailed within the advice for their contributions to the production of this advice.

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Annex 1. Post-consultation advice on Regional Project recommended MCZs

Annex 2. Post-consultation advice on New Site options

Annex 3. Post-consultation advice final results tables

1 Introduction

1.1 Purpose of this advice

This report contains a summary of Natural England's Tranche 3 confirmed post-consultation advice to Defra (provided in November 2018) on 115 features in 22 Regional Project proposed Marine Conservation Zones (pMCZs) in English inshore waters and the addition of 24 further features to 13 MCZs designated in 2013 or 2016. It also contains our advice on 13 features in four inshore new pMCZ site options and two features in two new Highly Mobile Species pMCZs. The report provides the outputs of the analyses that informed our advice and was designed to enable Defra to make informed decisions about MCZ designation. This summary links to the supporting protocols that form part of the methodology behind these decisions. Notes on methodology are contained within relevant sections of this document as well as in the accompanying annexes (see Section 1.4 for an overview of the structure of this advice summary report).

Our advice to Defra focuses on evaluating the ecological evidence underpinning the inshore sites which were consulted on during the 2018 Tranche 3 consultation (8th June – 20th July 2018). It does not present social and economic considerations of designating MCZs as this is assessed in Defra's Impact Assessment. However, for the new site options, stakeholder opinions have been captured where possible in line with the approach to our advice set out in JNCC and Natural England (2016b).

1.2 About Natural England and its role in Marine Conservation Zones

Natural England is a Defra Non-Departmental Public Body and advises Government on matters relating to nature conservation in England and in English territorial waters out to 12 nautical miles. Natural England's remit is defined in the Natural Environment and Rural Communities Act 2006 (as amended by the Marine and Coastal Access Act 2009 section 311(1) and (2)).

Natural England has a statutory and advisory role in the identification and delivery of MCZs.

- Statutory role. We have a statutory power under section 127 of the Marine and Coastal Access Act 2009 (MCAA) to provide advice and guidance as to:

    (a) the matters which are capable of damaging or otherwise affecting any protected feature(s)

    (b) the matters which are capable of affecting any ecological or geomorphological process on which the conservation of a protected feature(s) is (wholly or in part) dependent

    (c) how any conservation objectives stated for an MCZ may be furthered, or how the achievement of any such objectives may be hindered

    (d) how the effect of any activity or activities on an MCZ(s) may be mitigated

    (e) which activities are, or are not, of equivalent environmental benefit (for the purposes of section 126(7) (c)) to any particular damage to the environment (within the meaning of that provision)

- This advice or guidance may be given either in relation to a particular MCZ or MCZs or generally to public authorities. We have a duty to provide this advice to public authorities if they request it.

- Advisory role. We also have a wider role in relation to MCZs:

- Identification of MCZs: Natural England and the Joint Nature Conservation Committee (JNCC) were asked by Defra to run a stakeholder-led process to identify MCZs, which led to the Marine Conservation Zone Project in 2008, which resulted in the identification of 127 recommended MCZs from four Regional Projects. As part of Tranche 3, Defra have asked Natural England and JNCC to provide updated advice on certain Regional Project recommendations and to identify potential site options to help complete the ecologically coherent network of MPAs.

- Monitoring of MCZs: section 124(3) of the Marine and Coastal Access Act (MCAA) provides for the appropriate authority[7] to direct JNCC and Natural England to monitor MCZs.

- Natural England is responsible for providing conservation advice for all Marine Protected Areas within England's inshore waters to support sites to achieve their conservation objectives and to guide effective management. For MCZs this is set out in section 127(1) of the Marine and Coastal Access Act (MCAA) [8].

- Reporting on MCZs and the Marine Protected Area (MPA) network: section 124 of the MCAA outlines the reporting requirements on the appropriate authority and we expect to provide advice to inform this. JNCC will assess the MPA network as a whole.

1.3 Scope of Natural England's Tranche 3 advice on Marine Conservation Zones

Defra's aim for the third and final tranche is to be comprehensive and to substantially complete England's contribution to the UK Blue Belt, by addressing ecological gaps in the network of Marine Protected Areas (MPAs) in waters around England and offshore of Northern Ireland; known as Secretary of State waters. This will help deliver the Government's contribution to the ecologically coherent network of MPAs in the North East Atlantic and help safeguard clean, healthy, productive, safe and biologically diverse seas.

Sites and features which formed part of the consultation for the third tranche were largely selected from the original regional MCZ project recommendations (rMCZs). The majority of these directly contribute to gaps in the existing MPA network. Natural England are providing post-consultation advice on 35 inshore sites recommended by the Regional Projects (115 features in 22 undesignated pMCZs and 24 undesignated (further) features in 13 MCZs designated in Tranche 1 or Tranche 2), in order to assist with Defra's decisions around which sites should be designated (following the public consultation on a third tranche of rMCZs which took place in the summer of 2018).

Of these 139 features, 102 were originally proposed by the Regional Projects. We are providing updated advice for these features which can be identified by their feature status 'Original RP Feature' (**Annex 3**). The remaining 37 features were more recently identified from survey data within the Regional Project recommended sites, for both undesignated rMCZs and MCZs designated in Tranche 1 or Tranche 2. Many of these also address gaps in the existing MPA network and/or they help to better represent the ecological characteristics of the site (feature status 'T2 or T3 SNCB Additional Feature' in **Annex 3**). We have provided advice on all of these features during previous tranches or the Tranche 3 pre-consultation advice.

As part of Tranche 3, Defra have also asked Natural England and JNCC to identify any potential new site options beyond the Tranche 3 Regional Project recommended MCZs that could fill the remaining

[7] In the MCZ Project area the appropriate authority is the Secretary of State.
[8] Marine and Coastal Access Act, 2009. [http://www.legislation.gov.uk/ukpga/2009/23/contents]

ecological gaps[9] for both habitats and species in the existing MPA network. In response, Natural England has provided scientific advice on 13 features[10] in four inshore new site options (**Annex 2,** identified by site type 'New site option' and feature status 'T3 SNCB Additional Feature' in **Annex 3**).

Defra have also indicated the third tranche of MCZs could include sites for the protection of Highly Mobile Species provided there was a clear demonstration that their conservation would benefit from site-based protection measures. Defra sought recommendations for any potential highly mobile species MCZs from third parties in summer 2016. Natural England and JNCC provided joint pre-consultation advice on these sites and Defra consulted on five of these highly mobile species MCZ proposals in inshore waters. Of the five highly mobile species proposals that Defra consulted on, two are new sites solely for mobile species features (Berwick to St Mary's for common eider, and Southbourne Rough for nesting black bream), and another (Purbeck Coast for nesting black bream) is a new site, with other features as well as the highly mobile species feature. The remaining two of these five sites were proposed and consulted on, to add highly mobile species features to existing MCZs (Poole Rocks for nesting black bream, and Cumbria Coast for razorbill). Natural England's advice on these is included within Annex 1 and Annex 2.

1.4 Structure of this advice summary document

This summary of advice comprises:

i) An overview of Natural England's post-consultation Tranche 3 advice (within this document)

ii) Three annexes (each provided as a separate document) presenting the conclusions of our post-consultation assessments for the inshore Regional Project proposed MCZs (pMCZs) and the new site options. The annexes also contain detailed information, analysis and quality assurance that underpins our Tranche 3 pre- and post-consultation advice, in addition to that described in this document. These accompanying documents are:

Annex 1: Advice on Regional Project proposed MCZs, comprised of:

- Site descriptions containing a brief introduction to the site, its geographical location and descriptions of the main species and/or habitats for which Natural England is providing advice.
- Site (boundary) and feature maps (feature maps are not provided for highly mobile species features).
- A summary of Natural England's advice on confidence in feature presence and extent, likely condition and advised GMA (this advice can be found in full in Annex 3).
- Additional advice (where applicable) containing feature level narratives which support our advice on whether there is sufficient evidence or other ecological considerations to support the designation of each feature of a site, and/or advice on potential boundary amendments or options (for example, in the case of Bembridge pMCZ multiple boundary options were provided). For highly mobile species features this includes a summary of the assessments against the four mobile species principles.

Annex 2: Advice on new site options comprised of:

- Background information
- Site overviews including site descriptions and maps

[9] In 2016, Defra asked JNCC to review the progress that has been made towards completing their contribution to the UK MPA network, which also enabled the contribution of the list of remaining rMCZs to be considered. The review identified remaining shortfalls in the UK MPA Network which further sites may be required to fill as part of Tranche 3 (JNCC 2016).

[10] Five of these features in one new site option, Purbeck Coast, were associated with the Broadbench to Kimmeridge Bay rMCZ which has been incorporated into the Purbeck Coast site and for which advice is not provided separately. Of these five features, three were proposed by the Regional Project and so the feature status is 'Regional Project Feature' in **Annex 3**. The remaining 11 new site option features reflect the network shortfalls identified by JNCC (2016); see **Annex 3** for further details.

- A summary of Natural England's advice on confidence in feature presence and extent, likely condition and advised GMA (this advice can be found in full in Annex 3). For highly mobile species features this includes a summary of the assessments against the four mobile species principles
- Narrative capturing stakeholder opinions on the site options, where possible
- A joint (JNCC and Natural England) summary of the contribution of the new site options to feature shortfalls in the MPA network

Annex 3: Results tables for advice on Regional Project proposed MCZs and new site options. These tables are comprised of:

- **Confidence Assessment:** assessment of confidence in the evidence for presence and extent of features and details of where these assessments have changed since the pre-consultation advice (Table 1)
- **Data sufficiency – Feature level:** analysis of whether sufficient evidence is present to support the designation of each feature of a site i.e. it provides the results of the feature-level 'sufficiency assessment' process and details of any changes to this advice since the pre-consultation assessment (Table 2)
- **General Management Approach (GMA) and Risk:** advice on the likely feature condition and our confidence in that condition, the GMA and risk (where applicable), along with narratives to explain the advice and details of any changes since the pre-consultation assessment (Table 3)
- **Triggering activities:** contains information on the socio-economic activities, or direct evidence of feature condition, that have triggered a recommendation of a Recover GMA (Table 4)
- **Highly mobile species results:** Full results for all highly mobile species features, covering the four principles, GMA and evidence sources used and not used (Table 5)
- **T1 and T2 site features:** a summary of our advice for potential additional features of MCZs designated in Tranche 1 or Tranche 2 (Table 6)
- **Evidence:** evidence sources used and not used (Table 7 and Table 8, respectively)

1.5 Standards and principles applied in writing this advice

Natural England followed all relevant aspects of the MCZ advice protocols when producing this advice. These cover aspects of assessing confidence, quality assurance, document management and style and high level principles. These protocols were developed jointly with JNCC for the July 2012 advice to Government and all technical protocols (details of the technical protocols can be found in Section 2) went through an independent external review process. In addition, JNCC and Natural England developed supplementary guidance on aspects of the practical application of Protocol E (JNCC and Natural England 2013). Natural England's methods of assessing the third party proposed highly mobile species MCZs was jointly developed with JNCC at the pre-consultation stage (JNCC and Natural England 2016a), and is detailed further within section 2.6 of this document.

Natural England also has a series of internal standards that staff follow when producing work to ensure that advice provided and decisions made adhere to Natural England's Evidence Strategy (Natural England 2012a) and the Government Chief Scientific Adviser's Guidelines on the Use of Scientific and Engineering Advice in Policy Making (Government Office for Science 2010). These standards include:

- Evidence Strategic Standard (Natural England 2013b)
- Analysis of Evidence Standard (Natural England 2013c)
- Communicating and Publishing Evidence (Natural England 2013d)

1.6 Links to JNCC advice

Both JNCC and Natural England have followed the same overarching protocols to assess evidence and provide advice on the Regional Project recommended MCZs and new site options. Our close working relationship during the development of our respective advice has ensured that Defra can be confident that our advice is produced to the same standard.

Our advice on the **third party proposed highly mobile species MCZs** has been jointly developed with JNCC.

1.7 Tranche 3 Marine Conservation Zones in inshore waters

The 35 Regional Project recommended MCZs, four new site options and two new HMS sites that this advice covers are listed below [listed in alphabetical order]:

Regional Project proposed MCZs and existing MCZs with additional features

- Axe Estuary
- Beachy Head East
- Bembridge
- Camel Estuary
- Cape Bank
- Chesil Beach and Stennis Ledges (T1 site additional features)
- Cumbria Coast (T1 site additional HMS feature)
- Dart Estuary
- Devon Avon Estuary
- Dover to Deal (T1 site additional features)
- Erme Estuary
- Foreland
- Goodwin Sands
- Isles of Scilly: Bristows to the Stones (T1 site additional features)
- Isles of Scilly: Higher Town (T1 site additional feature)
- Isles of Scilly: Men a Vaur to White Island (T1 site additional feature)
- Isles of Scilly: Peninnis to Dry Ledge (T1 site additional feature)
- Kentish Knock East
- Medway Estuary (T1 site additional smelt feature)
- Morte Platform
- Orford Inshore
- Otter Estuary
- Poole Rocks (T1 site additional HMS feature)
- Ribble Estuary (smelt)
- Selsey Bill and the Hounds
- Solway Firth (smelt)
- South Dorset (T1 site additional feature)
- South of Portland
- Studland Bay
- Swanscombe[11]
- Thanet Coast (T1 site additional feature)
- Torbay (T1 site additional features)
- Whitsand and Looe Bay (T1 site additional features)
- Wyre-Lune (smelt)
- Yarmouth to Cowes

New Site Options

- Albert Field
- Berwick to St Mary's (solely for HMS feature)
- Helford Estuary
- North West of Lundy
- Purbeck Coast (one HMS feature)
- Southbourne Rough (solely for HMS feature)

[11] Advice provided for these sites following division of the original Thames Estuary rMCZ – see Section 1.8 for further details

Advice was provided on the following sites at the pre-consultation stage, but they were not included in Defra's Tranche 3 public consultation, so they have not been included in the current, post-consultation advice:

Regional Project recommended MCZs and existing MCZ with additional features

- Alde Ore Estuary
- Blackwater, Crouch, Roach and Colne Estuary (T1 site additional features)
- Broadbench to Kimmeridge Bay (now included within Purbeck Coast new site option)
- Cromer Shoal Chalk Beds (T1 site additional features)
- Hythe Bay
- Kingmere (T1 site additional features)
- Norris to Ryde
- Taw Torridge Estuary
- Thanet Coast (T1 site additional features – only one consulted on)
- The Swale Estuary (T2 site additional features)
- Upper Thames Estuary

New Site Options

- Bideford to Foreland Point (proposed HMS site)
- Carrick Roads (proposed HMS site)
- Fal and Helford Estuaries
- Hartland to Tintagel (proposed HMS site)
- Lyme Bay (proposed HMS site); JNCC led
- Lundy (proposed HMS site)
- Rye Bay
- South of Hythe Bay
- Studland Bay (for the proposed HMS feature; other additional features were consulted on)
- Torbay Extension (proposed HMS features)

2 Methodology: Overview of how Natural England's post-consultation advice has been developed

Presented below is a summary of how Natural England's post-consultation MCZ advice has been developed for the **Regional Project proposed MCZs (pMCZs)** and **new site options**. The full methodology is available on request.

2.1 Understanding confidence levels for the different assessments

Throughout this document and accompanying annexes, Natural England provides advice on our confidence in evidence and judgements. Each type of assessment will use a different protocol to reflect the evidence used. The approaches to confidence levels are briefly described below.

In **Annex 3** (Table 1), we present our scientific confidence in the evidence for **presence** and **extent** of features. Confidence here is assessed using Protocol E (JNCC and Natural England 2013) which sets out data that must be present to achieve different levels of confidence, such as habitat maps or point records (JNCC and Natural England 2012a). Where we have low confidence in the evidence for feature presence or extent this may be due to a single record, habitat maps based on modelled data only, or records older than 12 years for species or temporally variable habitats. Where we have no confidence in the evidence this is due to a lack of data for presence or conflicting data that show the presence of a different feature instead of the recommended feature.

In providing our advice on the proposed General Management Approach (GMA) in **Annex 3** (Table 4) we present our confidence in the **condition of features** following Protocol F (JNCC and Natural England

2012b). This requires us to have taken account of the confidence of the sensitivity of features to pressures, confidence in feature extent, the activity, reliability and suitability of scale of human activities data, and the confidence in direct evidence of feature condition, to determine a confidence in feature condition.

2.2 Quality assurance process

The evidence and advice in this report has been through a quality assurance process. The specific quality control methods used through each separate advice process are detailed in Sections 2.3, 2.4, 2.5 and 2.6 below. In addition, the entirety of this advice has been the subject of a detailed technical review undertaken by Natural England's Chief Scientist and Marine Designations Principal Specialist in accordance with our published standards. This review process was witnessed by a member of Natural England's Board.

2.3 Confidence in feature presence and extent

2.3.1 Aims of this section

The aim of this section is to describe how evidence was analysed to assess our confidence in the presence and extent of proposed features within the pMCZs and new site options in English inshore waters being considered for designation in Tranche 3.

2.3.2 Overview of the process used to develop the advice

Natural England uses an automated Geographic Information System (GIS) process to initially assess confidence in the presence and extent of features before results are then checked manually by National and Area Team staff as part of the quality control and assurance processes detailed in Sections 2.2 and 2.3.4. Confidence is assessed using Protocol E, which sets out the data that must be present to achieve different levels of confidence (see Section 2.1), such as habitat extent maps or point records (JNCC and Natural England 2012a).

As a general rule, at least moderate confidence for both the presence and extent of a feature is required for it to proceed to designation, although there may be some exceptions to this as outlined in the data sufficiency analysis (see Section 2.5). Throughout the confidence assessment process, the following questions were considered:

1) Is there measurable or verifiable evidence for the presence of the features, i.e. Broad-Scale Habitats (BSHs), Features of Conservation Importance (FOCI) (which include Habitat and/or Species of Conservation Importance (HOCI/SOCI)), Geological/geomorphological features of interest, and non-Ecological Network Guidance (non-ENG) features, in the site?

2) Is there evidence of the spatial extent or distribution of these features in the site?

In undertaking this assessment for the pMCZ features, new data which have become available since Natural England's Tranche 3 pre-consultation advice have been considered. By incorporating new data that have become available, understanding of the presence and extent of the features within the Regional Project recommended MCZs and the new site options has been improved and in some cases has changed the confidence scores presented for features in the current advice compared to previous advice. This assessment has used 578 datasets in total, which include dedicated verification surveys and data provided through collaboration with partner organisations e.g. Environment Agency, and stakeholder contributions, e.g. Conservation NGOs, as well as any datasets provided through the consultation.

2.4 Geological features

Natural England does not hold appropriate geographic/spatial data for the geological features and therefore they cannot be assessed by the automated process described above. The confidence assessment results provided in Table 1 of **Annex 3** for geological features are taken from JNCC and Natural England's original expert advice to Defra on rMCZs in July 2012 (unless stated otherwise). The confidence assessments for geological features were based on expert judgement, using advice from Natural England's geological specialists, along with information and evidence from the following sources:

- Position data from the ABPmer MB0102 Project: Report No 8: Task 2A. Mapping of Geological and Geomorphological Features (ABPmer 2008);
- Natural England aerial photography data layers for intertidal and shallow subtidal features (where the geological features are visible in these layers);
- British Geological Conservation Review Series (JNCC 2017);
- Detailed bathymetry data for subtidal features from specified projects;
- A range of technical geological publications.

Full details of evidence sources used are listed in Table 2 of **Annex 3**. Results for geological features were checked and agreed by evidence specialists and local site leads in 2016 and, where appropriate, the intertidal features were checked using the most recent aerial photography. We are satisfied that these expert judgement assessments remain valid and can be applied to the current confidence advice.

2.4.1 Application of standards/protocols/advice

Along with the Natural England standards described in Section 1.5, the following Protocols and published approaches have been applied to the confidence assessment process:

- Protocol E (JNCC and Natural England 2012a) supports the assessment of confidence in presence and extent of key MCZ features
- Supplementary guidance on aspects of the practical application of Protocol E (JNCC and Natural England 2013).

2.4.2 Quality assurance process

In addition to the quality assurance (QA) process applied to our post-consultation advice as a whole (Section 2.2), the following levels of QA were applied during the development of our advice on confidence in feature presence and extent.

Regional Project proposed MCZs and new site options

The Natural England MCZ Evidence Panel convened on 19th March 2018 and on the 14th August 2018 to assess all new evidence submitted following the 2016 Confidence Assessment for Tranche 3 MCZs for its suitability for inclusion in the Tranche 3 post-consultation Confidence Assessment. Members of the Evidence Panel were selected for their knowledge and experience with regard to analysing, interpreting and using evidence for site designations, and included experts from Natural England, Cefas, JNCC and Plymouth University.

Suitability of evidence was determined using the following agreed screening criteria:

1. The evidence was submitted before a specified data cut-off date
2. The evidence had not previously been used for production of SNCB Statutory Advice on recommended MCZs

3. The evidence contains physical or ecological information pertinent to a site, or selected features for previously designated sites, proposed for inclusion in the current tranche
4. The evidence contains physical or ecological information on a potential MCZ feature
5. The evidence could be converted into a Geographical Information System (GIS) format by a specified cut-off date
6. The evidence was suitable for use in informing the confidence assessments in feature presence and/or extent (suitability for use can include whether the evidence has been interpreted and is in a useable format e.g. raw multibeam data that cannot be interpreted prior to the data cut-off date is excluded).

The outcomes of the decisions made for each dataset and consultation response were recorded in the Evidence Panel Audit Log and the Evidence Panel minutes, available on request from Natural England.

The automated confidence assessment process used by Natural England has undergone testing and quality assurance conducted by Marine Mapping Ltd. and a Natural England Geographic Information (GI) specialist prior to its use in the Tranche 2 confidence assessments, with usage in Tranche 3 overseen by Senior Marine Evidence Specialists. The output results of the confidence assessment, alongside an audit trail of decision making, are recorded within the Natural England MCZ Evidence Master Spreadsheet (available on request from Natural England).

Following the first run of the automated confidence assessment process undertaken to generate the advice for the pMCZ features, the results of the confidence assessment were subjected to National and local Area Team QA. This was completed during a workshop (21st – 24th May 2018), which aimed to check that the automated confidence assessment process had been carried out correctly, verified the generated outputs, and ensured all data standards and protocols were adhered to. Any improvements made to the automated confidence assessment process since the previous round of assessments were checked alongside all occurrences that required some form of expert judgement to be applied e.g. where confidence scores of moderate for presence and extent were derived solely on the basis of the presence of two or three survey points. This QA checked 100% of the confidence assessment results and identified, for further investigation, any incidences where the outputs seemed at odds with expert local knowledge. These incidences were discussed and agreed between National and Area Teams, with results amended where additional evidence allowed expert judgement or expert local knowledge to be used. Amendments were recorded and justified in meeting minutes. To further enable appropriate external scrutiny of the results as well as consistency between approaches taken by Natural England and JNCC, an external representative from JNCC was present at the workshops. A record of issues, discussions, decisions and required actions was taken and is available on request from Natural England.

The automated confidence assessment tool was run again to update the assessments with any relevant data received through the consultation and a second National QA workshop was held (29th August 2018) to check 100% of the confidence assessment results for which new data had been received. All changes in confidence were individually checked to verify the output results. These were subsequently circulated to the Area Teams to further confirm all actions agreed during the May workshops had been carried out and for final validation of the Tranche 3 post-consultation confidence assessment results for all recommended sites.

The Natural England MCZ Evidence Panel convened on the 15th October 2018 to review the final confidence assessment results as informed by the evidence previously agreed as suitable for inclusion. The outcomes of this review were recorded in the Evidence Panel Audit Log and the Evidence Panel minutes, available on request from Natural England.

2.5 Condition Assessment, General Management Approach and Risk

2.5.1 Aims of the section

The aim of this section is to describe how an assessment of scientific confidence in feature condition has been undertaken and how the proposed General Management Approach (GMA) has been developed. This applies to both Regional Project proposed sites (pMCZs) and new site options, unless stated otherwise below.

A description of how the current and future risk of damage to or deterioration of certain pMCZ features has been assessed is also provided.

2.5.2 Overview of the process used to develop the advice

For each feature, a likely condition (favourable or unfavourable) and a GMA of Maintain (in favourable condition) or Recover (to favourable condition), has been advised. The likely condition of a feature can be determined either fully or in part by direct evidence of feature condition. Where such evidence cannot provide a full picture of condition or in the absence of such evidence, a risk-based (vulnerability) assessment can be used as a proxy of condition.

The type of GMA (i.e. to recover to, or maintain in, favourable condition) describes what is required for each feature, for the site to achieve the conservation objective[12].The Conservation Objective Guidance document (JNCC and Natural England 2011) and Protocol F (JNCC and Natural England 2012b) together describe a process for undertaking a vulnerability assessment (VA) of likely condition of species and habitats within the sites where they are proposed for designation. A VA involves a review of the species or habitat feature, site conditions and current and recent activity levels. An assessment is made to determine whether the feature is exposed to any pressures to which is it sensitive (via the activities that exert those pressures), to the point where it may be in unfavourable condition.

For all sites and features included in the consultation (with the exception of Highly Mobile Species sites), the likely condition and GMA has been assessed or re-assessed as described below.

Due to the limited availability or absence of direct evidence for the condition of features, a VA was conducted for all features. This provided a proxy for feature condition (likely condition) from which the GMA was derived. The VA used the best available evidence on the sensitivity of features to pressures associated with human activities, combined with best available evidence of exposure to those pressures, as per the methodology described in Protocol F (JNCC and Natural England 2012b) and Table 4 in the Conservation Objective Guidance (JNCC and Natural England 2011).

In instances where direct evidence of feature condition exists it was considered alongside the results of the VA, with the final likely condition determined according to Protocol F (JNCC and Natural England 2012b).

Following this, an assessment of confidence in the evidence used to assess the feature's condition was applied, as described by Protocol F (JNCC and Natural England 2012b).

Activities that interact with features which are sensitive to the pressures exerted by those activities, at a level to which they are considered vulnerable, are referred to as 'triggering activities'. These activities are thought to be contributing to unfavourable condition and therefore we have advised a GMA of Recover for the feature. Triggering activities for each feature with a Recover GMA are detailed in Table 8 of **Annex 3 - Results tables**.

[12] The Conservation Objective for each MCZ is for all of the features within it to be in favourable condition.

During the Tranche 3 consultation (June-July 2018), all responses that were considered by Defra to contain evidence of feature condition or activities taking place within sites were forwarded to Natural England's team for review. These responses were screened against the following criteria to assess whether they were relevant and of potential significance to Natural England's post consultation advice on Tranche 3 MCZ designations:

- Does the response contain information relevant to Tranche 3 advice?
- Does the response contain new information that Natural England does not already hold or has not received in another consultation response?
- Does the activity occur in a Tranche 3 site/over a specific feature/within buffer area?

This assessment was carried out by the MCZ National Team and the screening log is available on request; the Evidence Panel review process and QA of these decisions is described in Section 2.4.9 below.

2.5.3 Proxy Assessment Tool

The 2018 Tranche 3 VA was carried out for all sites/features included in the consultation (with the exception of Highly Mobile Species sites). The new Proxy Assessment Tool (PAT) was developed during 2018 and replaced the Spatial Comparison Task (SCT) tool and most of the automated databases that had been used in Tranche 2. The PAT identified any spatial relationships between features and activities and if these relationships had changed since the 2016 assessment.

This process produced a sensitivity and an exposure score for each feature/activity combination. These scores were entered into the GMA database, which generated the VA for each feature. The results of the VA were then used to assign corresponding feature GMAs. These outputs were then assessed by Natural England site leads, Senior Advisors and Sector Specialists as part of the 'expert judgement' phase of the work and could be revised using specialist knowledge and expert judgement.

2.5.4 Determining which features' likely condition and GMA needed to be reassessed in Tranche 3

The likely condition and GMA was re-assessed for all pMCZs where new information was available, including;

- Direct evidence informing the condition of a feature
- New evidence of the sensitivity of the feature to pressures
- New evidence of which pressures are associated with an activity
- A change in the known extent of a feature causing a change in apparent exposure to pressures from socio-economic activities
- A change in spatial distribution or intensity of pressures exerted by socio-economic activities.

Features for which there was no change in the information described above were not reassessed and the likely condition and GMA advised prior to the consultation has been advised again. Where applicable, the GMA determined in previous advice is also presented in Table 4 of **Annex 3**.

Where Natural England is advising a different GMA for a feature from previous advice, a narrative is provided to give a high level explanation for the change in advice; further details can be found in the detailed audit log (available on request from Natural England).

2.5.5 Application of updated sensitivity assessments

The most up-to-date sensitivity evidence from The Marine Life Information Network (MarLIN), the Marine Evidence based Sensitivity Assessment (MarESA)[13], was used to provide sensitivities of features to pressures caused by activities.

The MarLIN sensitivity evidence provides sensitivity assessments of habitats, biotopes and communities at EUNIS levels 4, 5 and 6 (see glossary). An assessment (Hiscock 2016) was carried out to predict which EUNIS habitats at levels 4, 5 and 6 may be present in each pMCZ and new site option, based on biogeographical location and depth. This assessment was used to screen out which biotopes were unlikely to occur in each site, to produce more precise site specific sensitivity scores. An assessment on which EUNIS level 4, 5 and 6 features are considered part of EUNIS level 3 features was conducted, this assessment was then used to aggregate up the site specific sensitivity scores to EUNIS level 3 that match the MCZ feature level. Where a range of sensitivities was identified for a given feature due to its wide range of potentially occurring sub-types, the highest-returned sensitivity score was used.

In some cases where a specific type of the habitat (i.e. EUNIS level 4, 5 or 6 habitat) has been identified in a site through surveys, the more specific sensitivity score has been used. The sensitivity of an MCZ feature to activities were determined through a database and used in the VA. The results from this database were subsequently reviewed by site leads to ensure consistency between sites and that any differences in feature sensitivity were valid.

In some cases, the sensitivity pressure benchmark[14] was used during expert judgement to support the assessment of the likely impact of an activity on a feature. Where it was considered that the levels of pressure arising from the activity did not meet the pressure benchmark, the feature may have been assessed as not exposed to the activity at levels likely to damage the feature.

2.5.6 Assessment of current and future risk

The risk assessment is designed to identify where features with low confidence in presence and extent should still be considered for designation based on risk of impacts from socio-economic activities (JNCC and Natural England 2016c). The risk assessment has been used to inform the data sufficiency results (see Section 2.5). The risk assessment is conducted on features that reach Question 2B in JNCC and Natural England (2016c) ("Is the feature at high risk of damage?"); this applies to 45 features in total.

As the new site options were identified on the basis of sufficient data for designation, a risk assessment was not required for any of the features in the new site options.

2.5.7 Application of standards/protocols/advice

Along with the Natural England standards described in Section 1.5, the following Protocols and published approaches have been applied to our advice on the likely condition, GMA and risk:

- Protocol F (JNCC and Natural England, 2012b) supports the assessment of confidence in likely condition of MCZ features and describes the approach to the vulnerability assessments.
- Conservation Objective Guidance (COG) (JNCC and Natural England 2011) describes the approach to vulnerability assessments and setting a GMA.

[13] https://www.marlin.ac.uk/species/sensitivity_rationale
[14] Pressure benchmark: Hypothetical evidence reference point for the pressure at which sensitivity assessments have been carried out

- MCZ levels of evidence: Advice on when data supports a feature/site for designation from a scientific, evidence-based perspective' (JNCC and Natural England 2016c) describes the 'data sufficiency' approach and risk assessment.

2.5.8 Quality assurance process

In addition to the QA process applied to our post-consultation advice as a whole (Section 2.2), the following levels of QA were applied during the development of our advice on likely condition, GMA and risk (where applicable) for sites considered during the Tranche 3 consultation.

The Natural England MCZ Evidence Panel convened on 14th August 2018 to assess all new evidence received up until the end of the Tranche 3 consultation (8th June – 20th July 2018) for its suitability for inclusion in the Tranche 3 GMA advice. Members of the Evidence Panel were selected for their knowledge and experience with regard to analysing, interpreting and using evidence for site designations, and included experts from Natural England, Cefas, JNCC and Plymouth University.

Suitability of evidence was determined using the following agreed screening criteria:

- The evidence was submitted before a specified data cut-off date
- The evidence has not previously been used for production of SNCB Statutory Advice on recommended MCZs
- The evidence contains novel condition or activity information pertinent to a site, or selected features for previously designated sites, proposed for inclusion in the current tranche
- The evidence is suitable for use in informing the vulnerability assessment.

The outcomes of the decisions made for each dataset and consultation response were recorded in the Evidence Panel Audit Log and the Evidence Panel minutes, available on request from Natural England.

Spatial activity data were QA'd by Natural England's national MCZ Designations Team, Sector Specialists and site leads who identified amendments or updates to be applied to the geo-database.

Inputs to the VA were QA'd internally to ensure tools were producing correct results including:

- GIS tool outputs (PAT results for overlapping activity and feature datasets)
- MS Access database outputs (automated exposure, sensitivity, priority scoring, VA)

Staff with local knowledge completed a review of the VA including the automated exposure and sensitivity results and applied expert judgement, providing a narrative to support any changes that had been made between the pre-consultation and post-consultation advice. Changes made by site leads were then reviewed and QA'd by Natural England Sector Specialists and local Area Team Senior Advisors. Natural England's National and Area Team worked together to review and QA the advice on the likely condition and GMA for all sites being consulted on.

The Natural England MCZ Evidence Panel convened on the 15th October 2018 to review the final GMA results as informed by the evidence previously agreed as suitable for inclusion. The outcomes of this review were recorded in the Evidence Panel Audit Log and the Evidence Panel minutes, available on request from Natural England.

2.6 Advice on the scientific basis to support feature/site designation (Data Sufficiency)

2.6.1 Aims of the section

Following designation of MCZs in Tranche 1, Natural England and JNCC agreed to provide Defra with

specific advice as to whether an individual feature or a site has 'sufficient' scientific evidence to support its designation. This evidence/data sufficiency assessment takes account of:

a) Outputs of data certainty assessments undertaken under Protocol E (JNCC and Natural England 2012a);
b) Work undertaken by JNCC on 'gaps' in the MPA network (JNCC 2014, 2016);
c) VAs undertaken under Protocol F (JNCC and Natural England 2012b); and
d) Additional expert advice provided by feature specialists where appropriate, e.g. migratory fish.

This step by step approach to determining whether a feature should or should not be designated from a scientific, evidence-based perspective, answers two key questions:

1) Are there enough data to support the designation of a feature?

2) Are there additional conservation/ecological considerations that support priority designation of a feature where data confidence may be limited?

This assessment process is detailed in the 'MCZ Levels of Evidence' paper (JNCC and Natural England 2016c).

Assessment of feature level data sufficiency

The assessment followed the process set out in JNCC and Natural England (2016c). A confidence score of at least Moderate in both feature presence and feature extent, based on the application of Protocol E, determines that a feature has enough supporting evidence to underpin its designation, i.e. the answer to Question 1 is 'Yes' (Section 2.5.1).

Where it does not, then the feature is subject to Question 2 (Section 2.5.1). This leads to a series of additional questions being asked. These questions, detailed in JNCC and Natural England (2016c), include:

i. Whether designation of the feature would contribute towards filling a gap[15,16] in the MPA network.

ii. Whether a feature is likely to be at high risk of damage if it is not protected immediately. A feature is considered at high risk if it:

    a. Is highly sensitive (with moderate/high confidence) to one/more pressures (i.e. if the feature were to be exposed to such a pressure in the future, it would be vulnerable to damage that would lead to its being in unfavourable condition); or

    b. Is highly vulnerable to one/more pressures (i.e. it is currently exposed to a pressure to which it is sensitive and the proxy condition assessment is therefore unfavourable).

Depending on the answers to these questions there are three possible outcomes for each feature subject to Question 2 (Section 2.5.1 and Chart 1 of JNCC and Natural England 2016c):

1) Conservation benefits support the feature designation (Priority feature designation)

[15] This reflects the main addendum to the data sufficiency methodology for Tranche 3 (JNCC and Natural England 2016c): a change from consideration of 'big gaps' in the MPA network (as per criteria set out in JNCC 2014) to 'gaps' according to JNCC's 2016 network analysis (JNCC 2016).
[16] Column H of Table 6 in **Annex 3** provides an indicator of which sites/features are recognised as potential 'gap' fillers. This information is based on the version of JNCC's MPA network analysis (JNCC 2016) available at time of assessment. The 'pivot tool' JNCC have developed to support this analysis will enable Defra to verify the effect of a decision over whether or not to progress a site/feature in terms of its effect on the status of a gap in the network.

2) Scientific evidence does not justify designation at this stage (No designation)

3) Feature should be considered further by Defra (Further Consideration). Here, the designation decision should be based on consideration of specific circumstances for the feature and application of the precautionary principle.

Answers to each of these questions and the overall outcome for each feature are provided (see Table 2 of **Annex 3 - Results tables**). Such evidence could inform decisions for those features where the level of scientific evidence is currently limited but where the feature, if present, may be at high risk of damage.

For all features with the outcome 'Further Consideration', 'Priority feature designation' or 'No designation', a feature narrative is provided in **Annex 1 - Advice on Regional Project pMCZs**. These feature narratives support our advice on whether there is sufficient evidence or other ecological considerations to support the designation of each feature. Some data sufficient features also have a feature narrative included where extra information is useful to consider

2.6.2 Application of standards/protocols/advice

Along with the Natural England standards described in Section 1.5, the evidence/data sufficiency assessment takes into account the results/outputs of the confidence in presence and extent, as well as the vulnerability and risk assessments of our Tranche 3 pre-consultation advice. Therefore, all of the protocols and standards referred to in Sections 2.3 and 2.4 above, describing each of these components of Natural England's advice, also apply here.

2.6.3 Quality assurance process

In addition to the QA process applied to our post-consultation advice as a whole (Section 2.2), the following levels of QA were applied during the development of our advice on data sufficiency.

Natural England staff developed an automated process using Microsoft® Access to answer the component questions required for both Questions 1 and 2 within the 'data sufficiency' assessment. This was used to interrogate the results of Natural England's evidence assessment.

All assessments of features resulting in "Priority feature designation" and "Further consideration" outcomes from Question 2 were manually verified by an MCZ Evidence Senior Specialist and Natural England's local site leads reviewed the results and associated narratives to ensure the advice delivered was consistent with their local site knowledge.

The gap analysis undertaken by JNCC (JNCC 2016) was used to identify which features may contribute towards filling a gap at the site level within the network in conjunction with information from new data that could be used to inform confidence in MCZ features. Natural England's evidence specialists verified the feature gap outputs and the final 'feature data sufficiency' results to validate the results and ensure consistency and coherency in the advice provided to Defra. Specific checks, details and actions were logged.

The areas within pMCZs occupied by features with sufficient evidence were analysed and quantified by a senior GI specialist using queries in ArcGIS in order to determine the proportion of a given site that was covered by proposed features. The output was checked in detail by another GI specialist.

2.7 Advice on Highly Mobile Species (including smelt *Osmerus eperlanus)*

This component of our Tranche 3 post-consultation advice focuses on the nine pMCZs which contain Highly Mobile Species (HMS), including smelt *Osmerus eperlanus*, features. As part of Tranche 3, Defra

asked Natural England to provide formal post-consultation advice on nine sites which are solely for or include highly mobile species or smelt features, where there is a clear demonstration that their conservation would benefit from site-based protection measures. Defra sought proposals for potential Highly Mobile Species MCZs from third parties in Summer 2016.

Natural England's methods of assessing the third party proposed Highly Mobile Species MCZs was jointly developed with JNCC at the pre-consultation stage (JNCC and Natural England 2016a).

A summary of the approach taken to assess smelt as a feature is provided below:

For MCZ features in Tranches 1, 2 and 3 proposed by the Regional MCZ Projects, Natural England followed the guidelines set out in the Ecological Network Guidance (ENG) (Natural England and JNCC 2010) and applied Technical Protocol E (JNCC and Natural England 2012a) and the data sufficiency guidelines (JNCC and Natural England, 2015 and previous versions; JNCC and Natural England, 2016c) to assess confidence in, and sufficiency of, the evidence on presence and extent of those features being proposed.

Smelt was one of the three Highly Mobile Species FOCI included in the ENG which were considered appropriate for designation where spawning, nursery or foraging grounds occur (Natural England and JNCC 2010). In previous tranches, Natural England has provided advice on the confidence in presence and extent of smelt as a feature, along with an assessment of scientific confidence in condition, to provide the proposed Conservation Objective (now replaced by the GMA). This advice was previously developed according to the methods described in key guidance and Protocols (e.g. JNCC and Natural England 2011; JNCC and Natural England 2012a; b), as has been described in detail in our Tranche 1 and Tranche 2 published advice. For consistency, the same methods have therefore been used in Tranche 3 to develop these components of our advice on smelt.

However, Technical Protocol E and thus the data sufficiency guidelines are less applicable to Highly Mobile Species features as they assess presence and extent rather than more suitable factors such as ecological importance. Third-party proposals for other Highly Mobile Species MCZs have been assessed using the separate guidelines that were developed specifically for Highly Mobile Species proposals (JNCC and Natural England 2016a). To help achieve consistency with the Highly Mobile Species proposals in Tranche 3, we have combined the existing methodology described above with that more recently developed for Highly Mobile Species and have therefore also scored each of the 4 pMCZs for smelt against the Highly Mobile Species principles (Ecological significance, Persistence, Site size and delineation, Appropriateness of management).

2.7.1 Quality assurance process for advice on Highly Mobile Species (including smelt *Osmerus eperlanus*)

In addition to the QA process applied to our post-consultation advice as a whole (Section 2.2), the following levels of QA were applied during the development of our advice on Highly Mobile Species (including smelt).

The Natural England MCZ Evidence Panel convened on 19th March 2018 and on the 14th August 2018 and determined suitability of the evidence for use in developing the Highly Mobile Species advice following the criteria outlined in section 2.3.4. As Highly Mobile Species had not been considered in previous MCZ Evidence Panels, the March 19th 2018 meeting of the evidence panel also included a review of the Highly Mobile Species Principles and process for developing the advice.

The Highly Mobile Species principles assessments were updated from the pre-consultation advice by Natural England species specialists, with site specific QA by NE Area Team staff and overall QA by

national MCZ evidence specialists and GMA advisers.

The Natural England MCZ Evidence Panel convened on the 15th October 2018 to review the final Highly Mobile Species assessment results as informed by the evidence previously agreed as suitable for inclusion. The outcomes of this review were recorded in the Evidence Panel Audit Log and the Evidence Panel minutes, available on request from Natural England.

3 Results: Key findings and structure of assessment results

3.1 Aims of this section

This section provides key findings and describes the structure and presentation of the results of our post-consultation assessments of the Regional Project proposed pMCZs and new site options, which are provided in **Annex 3**:

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

3.2 Key findings from our assessments of the Regional Project proposed MCZs (pMCZs) and new site options

In total, we are providing post-consultation advice on confidence in presence and extent and the GMA for the **154 features** from **41 pMCZs and MCZs** included in the Tranche 3 consultation. This consists of:

- 24 further features for 13 existing MCZs (sites designated in Tranche 1 or Tranche 2) of which three features in three different sites are Highly Mobile Species
- 115 features in 22 undesignated pMCZs from the original Regional Projects proposed sites list of which three features in three different sites are Highly Mobile Species
- 13 features in four new pMCZ site options, previously not identified by the Regional Projects of which one feature is a Highly Mobile Species
- Two highly mobile species features in two new Highly Mobile Species pMCZs

In summary, we are advising that there are scientific grounds or additional conservation/ecological considerations to support designation of 153 features in 41 sites. We are advising that there is no longer sufficient evidence to support designation of one feature in one site. A summary of the findings for each of the above categories is as follows:

24 further features for **13 existing MCZs** (designated in Tranche 1 or Tranche 2):

- These features have different origins: 11 (including one Highly Mobile Species feature) were originally proposed by the Regional Projects, and the remaining 13 were first proposed by Natural England during Tranche 2 (two features) or Tranche 3 (nine features) or by third parties as part of the call for Highly Mobile Species site recommendations in Tranche 3 (two features).
- For all 24 of these further features, we are advising that there are scientific grounds to support their designation.
- Three of these features have been assessed against the Highly Mobile Species principles[17]. These are:
    - Smelt *Osmerus eperlanus*[18] is a feature in one of the sites. We have scored the feature as Moderate or High across each of the four principles. A GMA of Recover has been advised.
    - Black Seabream *Spondyliosoma cantharus* (nesting) is a feature in one of the sites. We have scored the feature as Moderate or High across each of the four principles. A GMA of Recover has been advised
    - Razorbill *Alca torda* is a feature in one of the sites. We have scored the feature as Moderate or High across each of the four principles. A GMA of Recover has been advised.
    - None of these assessments have changed since pre-consultation

- For the remaining 21 features we have reassessed the confidence, since our pre-consultation advice, due to the availability of new evidence. All 21 of these features now score Moderate/Moderate or better.
    - **Presence** confidence has increased for five features and decreased for three features
    - **Extent** confidence has increased for three features and decreased for three features
- The GMA for these 21 features remains unchanged since our pre-consultation advice[19] (11 are Maintain, 10 are Recover).

115 features from **22 Tranche 3 pMCZs.** Of these:

- 24 features (across nine sites) have been identified through surveys since the regional MCZ projects reported:
    - **Presence** and **extent** confidence assessments have not changed for any of these 24 features.
    - We are advising that there is sufficient scientific confidence in the presence and extent, or additional conservation/ecological considerations, to support designation of 23 of the 24 features.
    - We are advising a Maintain GMA for 13 and Recover GMA for 11 of these features. Of these, one feature has changed from Recover to Maintain.

[17] These four principles, which are detailed in JNCC and Natural England (2016a), are: Ecological Significance, Persistence, MPA size and delineation and Appropriateness of Management.

[18] Smelt (*Osmerus eperlanus*) was one of the three highly mobile species FOCI, along with Undulate ray (*Raja undulata*) and European eel (*Anguilla anguilla*), included in the Ecological Network Guidance (Natural England and JNCC 2010). As such we have previously (2012-2015) provided advice on these species as proposed features of Regional Project rMCZs. We are providing Tranche 3 advice to Defra on smelt (see Section 2.6 of this document and **Annex 1** for further details) as a potential feature of 4 Regional Project pMCZs. We are also providing advice on a number of other highly mobile species which have been proposed as features of MCZs by third-parties in line with the guidance developed by JNCC and Natural England (2016a). This advice is also provided in Annexes 1 and 2.

[19] Natural England (2018) Summary of Natural England's confirmed advice provided to Defra on Marine Conservation Zones to be considered for consultation in 2018

- Smelt[21] is a feature in three sites. We have assigned a score of Moderate or High for each of the four Highly Mobile Species principles[20]. A GMA of Recover has been advised. These assessments are unchanged from the pre-consultation advice.
- The remaining 88 features were originally proposed by the regional MCZ projects.
    - We are advising that there are scientific grounds to support designation of 84 of these features. There are additional conservation/ecological considerations to support designation of two of these features. We have provided narratives for these in Annex 1 as well as for the remaining features assessed as 'no designation' by the data sufficiency process, but that do fill gaps in the MPA network.
    - **Presence** confidence has increased for seven features
    - **Extent** confidence has increased for 11 features and decreased for two features
    - GMA has changed from maintain to recover for one feature

13 features from **four new pMCZ site options** originally identified in the Tranche 3 pre-consultation advice:

- We are advising that there are scientific grounds to support designation of these 13 features.
- Black Seabream (*Spondyliosoma cantharus*) (nesting) is a feature in one of the sites and has been assessed against the highly mobile species principles[20]. We have scored the feature as Moderate or High across each of the four principles. A GMA of Recover has been advised. These assessments are unchanged since pre-consultation.
- The remaining 12 features all score High/Moderate or better for presence and extent.
    - **Presence** confidence has increased for two features
    - **Extent** confidence has increased for two features and decreased for one feature
- The GMA results remain unchanged from our pre-consultation advice (five features are recover, and seven are maintain). .

Two features from **two new Highly Mobile Species pMCZs:**

- Black Seabream (nesting) is a feature in one of the sites and has been assessed against the Highly Mobile Species principles. We have scored the feature as Moderate or High across each of the four principles. A GMA of Recover has been advised. For this site, the original third party proposed black seabream site overlapped a larger new site option. In our pre-consultation advice the third party proposed boundary was used, but in our post-consultation advice Defra instructed us to consider black seabream as an additional feature of the new site option. Because of this boundary change, more black seabream nests are encompassed within the site, and therefore the confidence in Principle 3 (MPA size and delineation) has been changed from Moderate to High, in our post-consultation advice.

- Common eider is a feature in one of the sites and has been assessed against the Highly Mobile Species principles. We have scored the feature as Moderate or High across each of the four principles, unchanged from the pre-consultation advice. The GMA of Recover remains unchanged since our pre-consultation advice.

Overall, changes in our advice on **154 features** from **41 Tranche 3 pMCZs and existing MCZs** that were consulted on can be summarised as follows:

- For nine Highly Mobile Species features:

[20] These four principles, which are detailed in JNCC and Natural England (2016a) and summarised in Chapter 2 of **Annex 2**, are: Ecological Significance, Persistence, MPA size and delineation and Appropriateness of Management. [21] Available from: http://jncc.defra.gov.uk/pdf/20160525_AnnexA_Selection_criteria_proposed_by_JNCC_and_Natural_England_v4.0.pdf

- Smelt is a feature in three of the Tranche 3 sites and one existing MCZ and assessments have not changed since our pre-consultation advice. A **GMA** of **recover to favourable condition** has been advised for smelt in all four sites as per our pre-consultation advice.
- Black seabream is a feature in two of the Tranche 3 sites and one existing MCZ. There has been a change from **Moderate** to **High** confidence for "MPA size and delineation"[21] for one of these sites. A **GMA** of **recover to favourable condition** has been advised for all black Seabream features as per our pre-consultation advice.
- Common Eider is a feature in one of the new sites and our advice has not changed. A **GMA** of **recover to favourable condition** has been advised.
- Razorbill is a feature in one existing MCZ and our advice has not changed. A **GMA** of **recover to favourable condition** has been advised.

- Of the remaining 145 features:
  - Since our pre-consultation advice, our assessment of feature **presence** has altered for 17 of the 145 features assessed where confidence increased for 14 features and decreased for three features. Our assessment of feature **extent** has altered for 22 of the 145 features where confidence increased for 16 features and decreased for six features. One feature was not previously assessed, the confidence assessment provides results for the first time for this feature[22].
  - We have High/High confidence in **presence/extent** for 94 of the features, High/Moderate confidence in 24, Moderate/Moderate confidence in 21, and Low confidence (Moderate/Low, Low/Low, High/Low) in six.
  - We are advising there are scientific grounds to support designation of 139 of the 145 features and advising there are further conservation/ecological considerations to support designation of a further three of the 145 features. We have provided narratives for these in Annex 1 as well as for the remaining features assessed as 'no designation' by the data sufficiency process, but that do fill gaps in the MPA network.
  - We are advising maintain in favourable condition **GMA** for 81 features: the **GMA** remains unchanged since our previous advice for 80 of these features and we have sufficient evidence to recommend changing the **GMA** from Recover to Maintain for one feature. For the remaining 64 features with a recover to favourable condition **GMA**: the **GMA** remains unchanged since our pre-consultation advice for 62 features; one feature had not previously been assessed[24]; and we are changing the **GMA** from Maintain to Recover for one feature as a result of new evidence since our pre-consultation advice.

3.3 Structure of results tables

3.3.1 Assessment of confidence in presence and extent

Our confidence assessment results (see Section 2.3 for an explanation of how these were derived) can be found in **Table 1** of the results tables (**Annex 3**).

Table 1 provides information about:

- The site type (Regional Project (RP) pMCZ, Designated MCZ or New site option);
- Site name;
- The features in each site;
- Feature type;
- Feature status:
  - 'Original RP Feature' refers to features originally recommended by the Regional Projects (RP).

[21] Available from: http://jncc.defra.gov.uk/pdf/20160525_AnnexA_Selection_criteria_proposed_by_JNCC_and_Natural_England_v4.0.pdf

[22] Sub-tidal mixed sediment for Albert Field pMCZ was not included in our pre-consultation advice, hence we present the first results for the feature in this site.

  - 'T2 SNCB Additional Feature' refers to features within RP recommended sites first advised on as part of our Tranche 2 advice, based on evidence available, stakeholder input and/or understanding of network shortfalls at that time. We are now providing advice to Defra on the suitability of these features for designation in Tranche 3, based on current best available evidence.
  - 'T3 SNCB Additional Feature' refers to features that were advised on by Natural England for the first time in T3 pre-consultation advice, within original RP recommended sites (both designated and undesignated MCZs) and the New site options under consideration as part of Tranche 3.
- Features which 'contribute to a shortfall' in the MPA network based on JNCC's MPA network analysis (JNCC, 2016) are given the prefix 'T3 Gap' and our advice on these features is based on current best available evidence, previous results of confidence assessments (where applicable) for presence and extent of each feature;
- The Tranche 3 pre-consultation feature confidences for presence and extent, and whether these assessments have been updated for the post-consultation advice;
- The Tranche 3 post-consultation feature confidences for presence and extent;
- A narrative on decisions made during the quality assurance process or expert judgement applied during the confidence assessment process;
- A note of whether additional advice is provided for the site/feature (applies to pMCZs only: the narratives can be found in **Annex 1**
- The evidence used to determine the current confidence (detailed in Table 7 – see Section 3.3.2) and
- Any evidence not used and the reasons for non-inclusion (detailed in Table 8 – see Section 3.3.3)

3.3.2 Evidence sources used in the development of this advice

Table 7 of the results tables (**Annex 3**) lists all the evidence used in the analysis to determine the confidence assessments of evidence for feature presence and extent.

Please note that in Natural England's Tranche 1 analysis and advice all datasets were assigned a "M_" prefix, however many of these datasets were actually groups of multiple datasets e.g. Marine Recorder. For our Tranche 2 pre-consultation analysis and advice the decision was taken to list the individual datasets comprising these larger groups to allow for easier interrogation of decision making and audit trails.

Tranche 2 new data and datasets split out from previous datasets were therefore assigned "D_" prefixes. Some of the original "M_" datasets were still used in this analysis, thus some "M_" datasets remain as changing the prefix would result in the same dataset having different codes in both Tranche 1 and Tranche 2.

New data sets incorporated since Tranche 2 pre-consultation have been incorporated into the single marine evidence base being developed by Natural England; these data sets will have the pre-fix "NE_".

Columns E, F and G provide details of whether or not the evidence is publically accessible and further details on availability and licenses if this is the case.

3.3.3 Evidence not used

Table 8 of the results tables (**Annex 3**) lists evidence of relevance to Tranche 3 pMCZs or new site options, which was not available in time or not suitable for use in the post-consultation assessments of confidence. A brief narrative is provided as to reasons for evidence not being used in this confidence assessment including a note of instances where reports and/or un-interpreted data were made available

to National and Area Team staff to inform expert judgement decisions made during the process.

3.3.4 Likely condition, General Management Approach and Risk

Table 3 of the results tables (**Annex 3**) provides results for the assessments of likely condition and GMA carried out on each feature in each site (where applicable; see Section 2.4 for an explanation of how these results were derived). As also explained in Section 2.4, a risk assessment is only conducted on features that reach Question 2B in JNCC and Natural England (2016c) ("Is the feature at high risk of damage?"); for our post-consultation advice this applies to six features.

Below is a description of the contents of Table 3.

- The site type and feature status (Regional Project (RP) pMCZ, Designated MCZ or New site option)
- Site name;
- The features in each site;
- Feature type;
- Pre-consultation GMA advice that was originally developed in 2017
- Whether there has been a change in GMA between the pre-consultation and post-consultation advice
- Our confidence in the feature condition assessment as per Protocol F (Low, Moderate or High)
- The final post-consultation GMA advice
- Rationale for change (where a change between pre-consultation and post-consultation GMA results has occurred).
- Current risk classification (where applicable): Green = no known current risk to the feature, Red = feature currently at risk of damage
- Comment on current risk classification
- Future risk classification (where applicable): Green = no known future risk to the feature, Red = feature at risk of damage in the future (next 6 years)
- Comment on future risk classification

3.3.5 Advice on the scientific basis to support feature/site designation (Data sufficiency)

Table 2 of the results tables (**Annex 3**) contains the feature level data sufficiency results (as described in Section 2.5). The feature level results draw on the feature confidence assessments displayed in Table 1 of **Annex 3**, together with the additional information described in Section 2.5.2. Information on which features may 'contribute to filling a gap' in the network based on JNCC's MPA network analysis (JNCC 2016) was used and supplemented by further advice from JNCC.

As also described in Section 2.5.2, it is important to note that Question 2 of the data sufficiency methodology is only considered for features which are not already considered sufficient on the basis of Question 1 (i.e. on the basis of their confidence in presence and extent alone) (Section 2.5, JNCC and Natural England 2016c).

Therefore, those features that are data sufficient based on Question 1 will return a N/A (Not Applicable) result for all Question 2 answers in Table 2 of the advice spreadsheet (these are hidden by default to keep the sheet manageable but can be manually unhidden).

For some of the sites/features subject to Question 2 of the data sufficiency methodology (indicated by 'See Appendix 1' in column N of Table 2), a feature level narrative has been provided in **Annex 1**. These narratives explain our recommendations on whether these features should be considered for designation and should therefore be referred to alongside the advice on data sufficiency.

3.3.6 Triggering activities

Table 4 of the results tables (**Annex 3**) contains information on the socio-economic activities, or direct evidence of feature condition, that have triggered a Tranche 3 post-consultation recommendation of a Recover GMA (see Table 3 of **Annex 3**), according to Natural England's best available evidence base.

3.3.7 Highly Mobile Species results

Table 5 of the results tables (**Annex 3**) contains Natural England's post-consultation advice on the degree to which the Highly Mobile Species principles are met by the Highly Mobile Species features (including smelt) within the pMCZs in inshore English waters under consideration in Tranche 3 as well as the GMA scores for each of these features and details as to whether any of these have changed since the pre-consultation advice.

3.3.8 Further features of Tranche 1 and Tranche 2 MCZs

Table 6 of the results tables (**Annex 3**) lists the features proposed for addition to Tranche 1 and 2 designated sites and provides a summary of our Tranche 3 post-consultation advice (this advice is detailed more thoroughly in Tables 1–4 of **Annex 3**). The features and sites for which we are resubmitting our previous advice (due to minimal or no changes in the evidence used to inform the advice) are also identified.

4 Glossary

Activity: Human social or economic actions or endeavours that may have an effect on the marine environment, for example fishing or energy production.

Anthropogenic: Caused by humans or human activities; usually used in reference to environmental degradation (JNCC 2009).

Appropriate authority: The appropriate authority is Welsh Ministers (for an area in Wales), Scottish Ministers (for an area in the Scottish offshore region) and in any other case the Secretary of State.

Benthic: A description for animals, plants and habitats associated with the seabed. All plants and animals that live in, on or near the seabed are benthos (for example sponges, crabs and seagrass beds) (Defra 2007).

Best available evidence: This is one of the Defra MPA network design principles and is described as 'Network design should be based on the best information currently available. Lack of full scientific certainty should not be a reason for postponing proportionate decisions on site selection (Defra 2010).

Biogenic reef: Any structure that has been formed from living material. It is normally used to describe living structures such as those created by the cold-water coral *Lophelia pertusa*, colonial worms such as *Sabellaria* spp. and molluscs, including the horse mussel *Modiolus modiolus* (Anon 2001).

Biotope: The physical habitat with its associated, distinctive biological communities. A biotope is the smallest unit of a habitat that can be delineated conveniently and is characterised by the community of plants and animals living there (for example, deep sea, *Lophelia pertusa* reef) (Anon 2001). Usually, several biotopes will constitute an ecosystem.

Broad-scale habitat (BSH): These are taken from the EUNIS Level 3 classification (Davies, Moss, & Hill, 2004) and are listed in the Ecological Network Guidance (Natural England and JNCC 2010).

Circalittoral: The subtidal zone characterised by animal-dominated communities. The depth at which the circalittoral zone begins is directly dependent on how much light reaches the seabed.

Confidence (of a habitat map): A statement about how reliable a map user thinks the map is given its purpose. This is not a mathematical definition like accuracy or uncertainty, but is a judgement made by the map user and may therefore vary for any map. However, this judgement can be supported by evidence from:

- accuracy measures
- supporting maps show underlying evidence used to interpret map
- evaluation of all contributing data
- independent validation
- expert opinion
- user support: Generally found to be acceptable by stakeholders and the map has stood the test of time (MESH 2007).

Defra: The UK Government Department for Environment, Food and Rural Affairs.

Defra marine area: This is defined as English inshore waters and the offshore waters of England, Wales and Northern Ireland.

ENG features: habitats or species which are listed in the Ecological Network Guidance (Natural England

and JNCC 2010) as features for which MCZs should be selected.

Environment: The physical surroundings and climatic conditions that influence the behaviour, growth, abundance and overall health of a population or species (Anon 2001).

EUNIS: A European habitat classification system developed by the European Topic Centre on Biological Diversity, covering all types of habitats from natural to artificial, terrestrial to freshwater and marine.

"Habitat type is defined for the purposes of the EUNIS habitat classification as follows: 'Plant and animal communities as the characterising elements of the biotic environment, together with abiotic factors operating together at a particular scale.' All factors included in the definition are addressed in the descriptive framework of the habitat classification. The scope of the EUNIS classification is limited to level 3 in its hierarchy (level 4 for Marine habitat types). At level 4 (5 for the Marine types) and below, the component units are drawn from other classification systems and combine these in the common framework." (http://eunis.eea.europa.eu/about)

EUNIS classification of habitats have been defined in the European Nature Information System and is a list of which biotopes make up which standardised habitat. The lower the EUNIS level, the more detailed the description of biotopes found in that habitat.

Exposure: The level that an interest feature or the habitat that supports it is open to a distressing influence resulting from the possible/likely effects of operations arising from human activities currently occurring on the site. The assessment of exposure can include the spatial extent, frequency, duration and intensity of the pressure(s) associated with the activities, where this information is available.

Extent: The area covered by a habitat or community.

European marine site: The marine areas of Natura 2000 sites (Special Areas of Conservation and Special Protection Areas)

Favourable condition: The state of MCZ features (habitats, species, geological and geomorphological) within a site when all requirements to meet site-specific conservation objectives have been achieved.

For MCZ habitat FOCI and BSHs, favourable condition occurs when, **within the site:**

i. its extent/area is stable or increasing; and
ii. the specific structure and functions, such as ecological and physico-chemical structure and functions, which are necessary for its long-term maintenance exist; and
iii. biological diversity of its characteristic communities is maintained such that the quality and occurrence of habitats and the composition and abundance of species are in line with prevailing physiographic, geographic and climatic conditions[23].

For MCZ species features favourable condition occurs when, **within the site**:

i. population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its habitat; and
ii. there is sufficient habitat to maintain its population on a long-term basis.

For geological and geomorphological features favourable condition occurs when, **within the site**:

i. the extent, component elements and integrity of geological and geomorphological features are maintained or able to evolve within the parameters of natural change; and

[23] This definition is aligned with the Marine Strategy Framework Directive's biodiversity descriptor

ii. the structure, integrity and/or inherent functioning of these features are unimpaired and remain unobscured other than through natural processes[24].

- In applying the term 'favourable condition' to MCZ features, Natural England and JNCC are developing draft attributes specific to MCZ features which represent the generic elements above. It is Natural England and JNCC's goal to eventually develop targets for each feature's attributes, against which favourable condition will be assessed. These targets will be closely linked to the targets for Good Environmental Status being developed for Marine Strategy Framework Directive implementation.
- The adoption of the term 'favourable condition', which is being used for other sites in the Marine Protected Area (MPA) network, will encourage consistency in the use of terminology for conservation objectives and facilitate the implementation of a common approach across the MPA network. Achieving and sustaining favourable condition of MPA features will ensure their appropriate contribution to the progress towards the achievement of Good Environmental Status by 2020 (under the EU Marine Strategy Framework Directive), and of Favourable Conservation Status (under the EU Habitats Directive).

Feature: A species, habitat, geological or geomorphological entity for which an MPA is identified and managed.

Feature of conservation importance (FOCI): A habitat or species that is rare, threatened or declining in our waters.

General Management Approach (GMA): The type of GMA describes what is required to achieve the conservation objective for each feature i.e. to recover to or maintain in favourable condition.

Geographic Information System (GIS): A system of hardware, software, and procedures designed to support the capture, management, manipulation, analysis, modelling, and display of spatially referenced data for solving complex planning and management problems (NOAA 2013).

Geo-referencing: Aligning geographic data to a known coordinate system so it can be viewed, queried, and analysed with other geographic data.

Geological or geomorphological features of interest: Geological and geomorphological features of interest may include areas of international geological importance, areas containing exceptional geological features, or areas that represent a geological or geomorphological feature or process. The Marine and Coastal Access Act allows for the designation of such features.

Ground truthing: Direct observations and samples of the seabed provide information that can be used to interpret remotely sensed images; the observations are the 'truth' with regard to the habitats actually present on the seabed. Observations used in this way provide ground truth data. The process of using ground truth data for interpretation is often termed 'ground truthing'. During this process the relationship between properties of the remote images at the observation/sample sites (in the form of points, irregular digitised areas or buffer areas around points) is determined. These relationships are then applied to the whole image to predict the distribution of habitat types (MESH 2007).

Habitat: The place where an organism lives, as characterised by the physical features. For example rocky reefs, sandbanks and mud holes all provide particular habitats that are occupied by animals or algae adapted to live in or on one of them but that probably cannot thrive, or even survive, in others (Anon 2001).

[24] In the marine environment, recovery generally refers to natural recovery through the removal of unsustainable physical, chemical and biological pressures, rather than direct intervention (as is possible with terrestrial features).

Habitat of conservation importance (HOCI): A habitat that is rare, threatened or declining in our waters.

Impact: The consequence of pressures (for example habitat degradation) where a change occurs that is different to that expected under natural conditions (Robinson, Rogers and Frid 2008).

Impact Assessment: An Impact Assessment reports on the anticipated environmental, economic and social costs, benefits and impacts of a proposed policy or range or policies. These impacts are assessed against a baseline scenario in which the proposed policy interventions do not take place. It is a process for analysing and selecting policy options and a tool for communicating how preferred options have been chosen.

Infralittoral zone: The shallowest subtidal zone (closest to the shore) characterised by plant-dominated communities.

Intertidal: The foreshore or area of seabed between high water mark and low water mark which is exposed each day as the tide rises and falls. Also called the 'littoral zone' (Anon 2001).

Joint Nature Conservation Committee (JNCC): The statutory adviser to Government on UK and international nature conservation. Its specific remit in the marine environment ranges from 12–200 nautical miles. JNCC delivers the UK and international responsibilities of the four country nature conservation agencies of the devolved regions, including Natural England.

Littoral: The edge of the sea, but particularly the intertidal zone (Anon 2001).

Maerl: Twig-like, calcified red algae that act as keystone species and form a particular habitat (Anon 2001).

Management measures: Management measures are ways to manage activities in a Marine Protected Area in order to maintain or improve the condition of its features. Specific measures may include legislative measures, financial, administrative (for example permits), practical and planning measures, physical modifications (such as buoys and signs), voluntary codes of practice, and education.

Mapping European Seabed Habitats (MESH) Project: The MESH Project ran between 2004 and 2008 and was made up of a consortium of twelve partners from five European countries led by the JNCC, with financial support from the EC's INTERREG IIIB NWE Programme. The MESH partnership drew together scientific and technical habitat-mapping skills, expertise in data collation and its management, and proven practical experience in the use of seabed-habitat maps for environmental management within national regulatory frameworks.

Marine Aggregates Levy Sustainability Fund (MALSF): From 2002 to 2011, the Government imposed a levy on all primary aggregates production (including marine aggregates) to reflect the environmental costs of winning these materials. A proportion of the revenue generated was used to provide a source of funding for research aimed at minimising the effects of aggregate production. This fund, delivered through Defra, was known as the Aggregate Levy Sustainability Fund (ALSF). The Marine ALSF supported a wide range of projects exploring ecology, geology and heritage of the seabed around the UK.

Marine Conservation Zone (MCZ): A type of Marine Protected Area to be designated under the Marine and Coastal Access Act. MCZs will protect nationally important marine wildlife, habitats, geology and geomorphology and can be designated anywhere in English and Welsh inshore and UK offshore waters. Before designation and before in pre-consultation advice, MCZs are referred to as **recommended MCZs (rMCZs)**. After the consultation but before designation, they are referred to as **proposed MCZs**

(pMCZs).

Marine Conservation Zone (MCZ) Project: A project established by Defra, Natural England and the JNCC to identify and recommend MCZs to Government. The MCZ Project was delivered through four regional MCZ projects covering the South-West, Irish Sea, North Sea and Eastern Channel and worked with sea-users and interest groups to identify MCZs.

Marine Protected Area (MPA): A generic term to cover all marine areas that are a *clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values* (Dudley 2008). MPAs may vary in their objectives, design, management approach or name (for example marine reserve, sanctuary, marine park) (IUCN-WCPA 2008). See also 'Protected Area' and 'OSPAR MPA'.

Marine Protected Area (MPA) network: A system of individual MPAs operating cooperatively and synergistically, at various spatial scales, and with a range of protection levels, in order to fulfil ecological aims more effectively and comprehensively than individual sites could acting alone. The system will also display social and economic benefits, though the latter may only become fully developed over long time frames as ecosystems recover (IUCN-WCPA 2008).

Metadata: Information about the identification, the extent, the quality, the spatial and temporal schema, spatial reference, and distribution of digital geographic data.

Natural England: The statutory adviser to Government established to conserve and enhance the natural environment, for its intrinsic value, the wellbeing and enjoyment of people and the economic prosperity that it brings. Natural England has a statutory remit for England out to 12 nautical miles offshore.

Non-ENG feature: habitats or species which are not listed in the Ecological Network Guidance as features for which MCZs should be selected. However, the Marine and Coastal Access Act allows for all habitats and species to be designated within MCZs.

OSPAR: The Convention for the Protection of the Marine Environment of the North-East Atlantic (http://www.ospar.org).

Parent feature: The EUNIS Level 2 habitat to which the BSH belongs (e.g. the BSH 'High-energy circalittoral rock' belongs to the EUNIS Level 2 habitat 'Circalittoral rock' (JNCC and Natural England 2012a).

Presence (of feature): Refers to a species, habitat, geological or geomorphological entity being located within a site.

Pressure: The mechanism through which an activity has an effect on any part of the ecosystem (e.g. physical abrasion caused by trawling). Pressures can be physical, chemical or biological and the same pressure can be caused by a number of different activities (Robinson, Rogers and Frid 2008). The nature of the pressure is determined by activity type, intensity and distribution.

Recovery: The absence of pressures to which the feature is sensitive, combined with evidence of ongoing improvement of the condition of the feature until a favourable stable state has been reached.

Regional MCZ project: Any one of the four Regional Projects that have been set up to deliver the MCZ Project (covering English inshore and English, Welsh and Northern Irish offshore waters), namely Finding Sanctuary (south-west), Irish Sea Conservation Zones (Irish Sea), Net Gain (North Sea) and Balanced Seas (south-east).

Regional stakeholder group: A group of sea-users, regulators and interest groups that were established to decide upon the MCZ recommendations of the regional MCZ projects.

Risk: The concept of the current level of possible loss, damage or deterioration of an interest feature, habitat and a site caused by an anthropogenic activity.

Risk Assessment: A judgement and statement on the expected loss, damage or deterioration of an interest feature, habitat or site caused by anthropogenic activity.

Science Advisory Panel (SAP): The SAP was employed to provide the scientific knowledge, advice and judgement necessary to assist the regional MCZ projects in identifying MCZs and the Secretary of State in designating these sites as a contribution to an ecologically coherent network. Members and the chair of the SAP were appointed by Defra.

Sensitivity: A measure of tolerance (or intolerance) of a species or habitat to damage from an external factor and the time taken for its subsequent recovery. See http://www.marlin.ac.uk/species/MarLIN-sensitivity-methods for further information.

Special Area of Conservation (SAC): A protected site designated under the European Habitats Directive for species and habitats of European importance, as listed in Annex I and II of the Directive.

Species of conservation importance (SOCI): Species that are rare, threatened or declining in our waters.

Stakeholders: Individuals (including members of the public), groups of individuals, organisations, or political entities interested in and/or affected by the outcome of management or designation decisions. Stakeholders may also be individuals, groups, or other entities that are likely to have an effect on the outcome of management or designation decisions.

Statutory Nature Conservation Body (SNCB): A collective term for the Natural Resources Wales, the JNCC, Natural England, Northern Ireland's Council for Nature Conservation and the Countryside (which generally works through the Northern Ireland Environment Agency) and Scottish Natural Heritage.

Substrate: The surface or medium on which an organism grows or is attached (e.g. seabed sediment).

Subtidal: Depths greater than the intertidal zone (Anon 2001).

UK Biodiversity Action Plan (UK BAP): The UK BAP was the Government's response to the Convention on Biological Diversity (CBD) signed in 1992. The UK BAP included a number of specific plans for species and habitats afforded priority conservation action. More recently devolution has meant that country level strategies have been produced (e.g. the England Biodiversity Strategy (Defra 2011a)).

Uncertainty: The degree to which the measured value of some quantity is estimated to vary from the true value. Uncertainty can arise from a variety of sources, including limitations on the precision or accuracy of a measuring instrument or system; measurement error; the integration of data that uses different scales or that describe phenomena differently; conflicting representations of the same phenomena; the variable, unquantifiable, or indefinite nature of the phenomena being measured; or the limits of human knowledge. Uncertainty is the opposite of confidence (MESH 2007).

Unfavourable status: The state of the feature is currently unsatisfactory and management may be required to enable favourable condition to be achieved.

Viability: The ability of a Marine Protected Area to maintain the integrity of the features (i.e. population of

the species or condition and extent of the habitat), for which it is designated, and to ensure individual sites are self-sustaining throughout natural cycles of variation.

Vulnerability: A measure of the degree of exposure of a receptor to a pressure to which it is sensitive.

5 Bibliography

ABP MARINE ENVIRONMENTAL RESEARCH LTD. (2008) *Accessing and developing the required biophysical datasets and data layers for Marine Protected Areas network planning and wider marine spatial planning purposes*. Available online: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=2&ProjectID=16368

ANON (2001) *A glossary of Marine Nature Conservation and Fisheries.* Bangor: Countryside Council for Wales.

BRIG (2007) *UK Biodiversity Action Plan (UK BAP); Priority Habitat Descriptions.* (ed. Ant Maddock). Available online: http://jncc.defra.gov.uk/PDF/UKBAP_PriorityHabitatDesc-Rev2011.pdf

DAVIES, C., MOSS, D., & HILL, M. (2004) *EUNIS Habitat Classification Revised.* EEA.

DEFRA (2007) *A Sea Change: A Marine Bill White Paper.* London: TSO.

DEFRA (2010) *Guidance on selection and designation of Marine Conservation Zones (Note 1).* London: Department for Environment, Food and Rural Affairs and the Welsh Assembly Government.

DEFRA (2011a) *Biodiversity 2020: A strategy for England's wildlife and ecosystem services. .* London: Defra.

DUDLEY, N. (2008) *Guidelines for Applying Protected Area Management Categories.* Gland: IUCN.

GOVERNMENT OFFICE FOR SCIENCE (2010) *The Government Chief Scientific Adviser's Guidelines on the Use of Scientific and Engineering Advice in Policy Making.* London: Department for Business, Innovation and Skills.

HISCOCK, K. (2016) Assigning the EUNIS classification to UK Regional Seas Areas. English territorial seas. Report to Natural England.

IUCN-WCPA (2008) *Establishing Resilient Marine Protected Area Networks - Making It Happen.* Washington: IUCN.

JNCC (2009) *Climate Change Glossary.* Retrieved 2013 20-September from Joint Nature Conservation Committee: http://www.jncc.gov.uk/default.aspx?page=4390

JNCC (2014) *Identifying the remaining MCZ site options that would fill big gaps in the existing MPA network around England and offshore waters of Wales & Northern Ireland* http://jncc.defra.gov.uk/pdf/140224_BigGapsMethod_v8.pdf

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

JNCC (2017) *The Geological Conservation Review (GCR).* http://jncc.defra.gov.uk/page-2947

JNCC AND NATURAL ENGLAND (2011) *Marine Conservation Zone Project: Conservation Objective Guidance*. http://jncc.defra.gov.uk/pdf/MCZ%20Project%20Conservation%20Objective%20Guidance_v2.pdf

JNCC AND NATURAL ENGLAND (2012a) *SNCBs' MCZ Advice Project Technical Protocol E – Assessing the scientific confidence in the presence and extent of features in recommended Marine Conservation*

Zones. *http://jncc.defra.gov.uk/pdf/120111_SNCB%20MCZ%20Advice_Protocol_Feature%20Evidence%20V5.0.pdf*

JNCC AND NATURAL ENGLAND (2012b) *SNCBs' MCZ Advice Project Technical Protocol F – Assessing scientific confidence of feature condition.* Sheffield and Peterborough: Natural England and JNCC. http://jncc.defra.gov.uk/pdf/120106_SNCBs%20MCZ%20Advice%20protocol%20F_confidence%20in%20feature%20condition_v5%200_FINAL.pdf

JNCC AND NATURAL ENGLAND (2013) *Assessing the scientific confidence in the presence and extent of features in proposed and recommended Marine Conservation Zones (Technical Protocol E). Guidance on aspects of the practical application of the Protocol E for MPA work.* Peterborough and Sheffield. http://jncc.defra.gov.uk/pdf/181113%20Protocol%20E%20supplementary%20guidance.pdf

JNCC AND NATURAL ENGLAND (2015) *MCZ Levels of Evidence: Advice on when data supports a feature/site for designation from a scientific, evidence-based perspective*. Available at: http://jncc.defra.gov.uk/page-5999

JNCC AND NATURAL ENGLAND (2016a) *Identifying possible Marine Conservation Zones for highly mobile species: Principles for third-party proposals.*http://jncc.defra.gov.uk/pdf/20160525_AnnexA_Selection_criteria_proposed_by_JNCC_and_Natural_England_v4.0.pdf

JNCC AND NATURAL ENGLAND (2016b) *Identifying potential site options to help complete the Marine Protected Area network in the waters around England.* http://jncc.defra.gov.uk/page-7119

JNCC AND NATURAL ENGLAND (2016c) *MCZ Levels of Evidence – Advice on when data supports a feature/site for designation from a scientific, evidence-based perspective.* http://jncc.defra.gov.uk/page-5999

MARINE BIOLOGICAL ASSOCIATION (2014) Marine Evidence based Sensitivity Assessment (MarESA). Available online: http://www.marlin.ac.uk/evidence

MESH (2007). *MESH Glossary*. Retrieved 2013 20-September from http://www.searchmesh.net/default.aspx?page=1898

NATURAL ENGLAND AND JNCC (2010) *The Marine Conservation Zone Project: Ecological Network Guidance.* Sheffield and Peterborough, UK. http://jncc.defra.gov.uk/pdf/100705_ENG_v10.pdf

NATURAL ENGLAND (2012a) *Our Evidence strategy*. http://publications.naturalengland.org.uk/publication/2165645

NATURAL ENGLAND (2013b) *Natural England Evidence Standard*. Retrieved from Evidence Strategic Standard: http://publications.naturalengland.org.uk/publication/7699291?category=3769710

NATURAL ENGLAND (2013c) *Natural England Standard*. Retrieved from Analysis of Evidence: http://publications.naturalengland.org.uk/publication/7850003?category=3769710

NATURAL ENGLAND (2013d) *Natural England Standard*. Retrieved from Publishing and Communicating Evidence: http://webarchive.nationalarchives.gov.uk/20140712082125/http://publications.naturalengland.org.uk/publication/7698502?category=3769710

NOAA. (2013). *National Marine Protected Areas Centre: Glossary*. Retrieved 2013 20 September from http://marineprotectedareas.noaa.gov/glossary.html

OSPAR COMMISSION (2008). *OSPAR List of Threatened and/or Declining Species and Habitats*. Reference number 2008-06. Available online: http://jncc.defra.gov.uk/pdf/08-06e_OSPAR%20List%20species%20and%20habitats.pdf

ROBINSON, L., ROGERS, S., & FRID, C. (2008). *A marine assessment and monitoring framework for application by UKMMAS and OSPAR – Assessment of Pressures and impacts (Contract No: C-08-0007-0027 for the Joint Nature Conservation Committee).* Liverpool and Lowestofy: University of Liverpool and Centre for the Environment, Fisheries and Aquaculture Science.

TILLIN H.M., HULL S.C., TYLER-WALTERS H. (2010). Development of a sensitivity matrix (pressures-MCZ/MPA features). *Report to the Department of the Environment, Food and Rural Affairs from ABPmer, Southampton and the Marine Life Information Network (MarLIN) Plymouth: Marine Biological Association of the UK.* 145 pp. Available from: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16368