

Marine Conservation Zones

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

Advice Overview

First published 8th June 2018

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ISBN 978-1-78354-487-5

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**Summary of Natural England's confirmed advice
provided to Defra on Marine Conservation Zones to
be considered for consultation in 2018**

Advice Overview

June 2018

Executive summary

This report provides a summary of Natural England's confirmed pre-consultation MCZ advice for each Regional Project recommended MCZ and new site option which is a candidate for consultation in Tranche 3. This advice was provided to Defra in February 2017.

Marine Conservation Zones (MCZs) are an important tool in England's protection of the marine environment and support the Government's obligations under the Marine and Coastal Access Act 2009. Defra will take decisions regarding MCZs based on sound evidence and Natural England's evidence-based, scientific advice will be used to support these decisions. This will help to ensure that the Government can create an ecologically coherent network of well-managed Marine Protected Areas (MPAs).

In July 2012¹, 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 rMCZs²), December 2014 (Tranche 2 pre-consultation advice for 29 inshore rMCZs³) and January 2016 (Tranche 2 post-consultation advice for 16 inshore rMCZs⁴).

There are currently 50 MCZs in UK 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 and final tranche is to be comprehensive and to complete the Government's commitment to the 'blue belt', by addressing remaining ecological gaps in the network of MPAs in waters around England and offshore of Northern Ireland; known as Secretary of State waters. This will help complete the Government's contribution to the ecologically coherent network of MPAs in the North East Atlantic and help safeguard sustainable, productive, healthy and biologically diverse seas.

Sites for the third tranche have been largely selected from the regional MCZ project recommendations. Defra requested that Natural England provide updated advice on 43 inshore sites recommended by the Regional Projects (195 features in 27 undesignated rMCZs⁵ and 36 undesignated (further) features in 16 MCZs designated in Tranche 1 or Tranche 2), to assist them in identifying sites and their constituent features for public consultation on a third tranche of rMCZs. The majority of these sites and features contribute to gaps in the existing MPA network.

As part of Tranche 3, Defra also asked Natural England and JNCC to identify any potential new site

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 Advice is also provided on an alternative boundary for 2 of the sites: Bembridge and Yarmouth to Cowes

options beyond the Tranche 3 Regional Project recommended MCZs that could fill the remaining ecological gaps ([JNCC 2016](#)) for both habitats and species in the MPA network. Natural England has provided scientific advice on eight inshore new site options with a total of 16 features.

We have assessed scientific confidence in the evidence for feature presence and extent and we have also provided advice on a General Management Approach (GMA) for each feature, based on consideration of feature condition. 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 the Government in making decisions on the designation of MCZs.

Key findings from our assessments of the inshore Regional Project recommended MCZs (rMCZs):

In total, we are providing advice on confidence in presence and extent and the General Management Approach (GMA) for **231 features** from **43 rMCZs⁵ and MCZs**. This includes:

36 further features for 16 existing MCZs (designated in Tranche 1 or Tranche 2):

- These features have different origins: 16 were originally proposed by the Regional Projects, the remaining were first proposed by Natural England during Tranche 2 (seven features) or Tranche 3 (13 features).
- Smelt (*Osmerus eperlanus*)⁶ is a feature in three of the sites and has been assessed against the highly mobile species principles⁷. For one site, we have scored the feature as Moderate or High across each of the four principles. For another, only two of the principles have achieved this score and the other two have been assessed as Low. The scores for the third site depend on whether or not it is considered alongside a separate smelt site in the same locality due to evidence that the populations are linked. A GMA of Recover has been advised for smelt in all three sites. For one site this represents a change in the previously advised GMA due to our improved understanding of the exposure of the feature to anthropogenic pressures. We have not previously provided advice for smelt in the other two sites.
- For the remaining 33 of these further features, we are advising that there are scientific grounds to support their designation. Of these, two are currently considered data insufficient and so our advice is based on additional conservation/ecological considerations⁸.
- We have not previously advised on confidence or GMA for 11 of the features in nine of the sites. We are now advising a GMA of Recover for five of these features.
- We are resubmitting our previous advice⁹ on confidence and GMA for 12 of the features across three of the designated sites. We are still advising a Recover GMA for all 12 of these features. For one

⁶ 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 2** for further details) and Undulate ray (see **Annex 4**) as potential features of 9 Regional Project rMCZs. 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 joint advice (with JNCC) was provided separately to Defra and has also been published.

⁷ 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.

⁸ For these 2 features, we have recently received additional data which will most likely improve our confidence in their presence and extent.

⁹ Previous advice from 2012-2015, depending on when Defra last requested advice on the feature.

further existing feature, we are now providing GMA advice for the first time (Maintain GMA being advised).

- We have reassessed the confidence and GMA for the remaining nine features due to the availability of new evidence: all have increased in confidence for feature presence and extent (to High/High or Moderate/Moderate). For five of these features the GMA remains unchanged since our previous advice⁹ (three are Maintain, two are Recover). For the final four features, we are now recommending a Recover GMA for two and Maintain for two, as a result of the new evidence.
- In summary, we are advising a Maintain GMA for 12, and Recover GMA for 24, of these 36 further features for 16 existing MCZs.

195 features from 27 Tranche 3 rMCZs. Of these:

- 40 features (across nine sites) have been identified through surveys since the regional MCZ projects reported. Of these SNCB additional features:
 - Nine have not previously been assessed and we are now advising there is sufficient scientific confidence in the presence and extent of these features to support designation and that four will contribute to gaps in the MPA network ([JNCC 2016](#)). We are advising a Maintain GMA for four and Recover GMA for five of these Tranche 3 additional features.
 - 31 were assessed and advised on during Tranche 2. We are now advising that there is sufficient scientific confidence in the presence and extent, or additional conservation/ecological considerations, to support designation of 21 of these features, for which we have advised a Maintain GMA for 10 and Recover GMA for the remaining 11
- Smelt⁶ was originally proposed by the regional MCZ projects as a feature in 5 of the sites; although one site was part of the original Thames Estuary rMCZ and is now being advised on as the Upper Thames Estuary rMCZ. For smelt as a feature of four of these sites, we have assigned a score of Moderate or High for each of the four highly mobile species principles⁷. For the fifth site, two of the principles have been scored as Low and the other 2 as Moderate. A GMA of Recover has been advised for smelt in all five sites; this is a change from our previous advice for the four applicable sites and is a result of our improved understanding of the exposure of smelt to anthropogenic pressures.
- The remaining 150 features are also features originally proposed by the regional MCZ projects. For these features:
 - 31% of assessments for feature presence have increased in confidence, 20% have decreased and 49% remain unchanged.
 - 42% of assessments for feature extent have increased in confidence, 19% have decreased and 39% remain unchanged.
 - We are advising that there are scientific grounds or additional conservation/ecological considerations to support designation of nearly 70% of the 150 features.
 - We have not assessed the GMA for 18% of the features because we have no confidence in their presence and extent or because they are non-ENG (Ecological Network Guidance)¹⁰ features which are being realigned to ENG features.
 - For the 123 features where we have assessed the GMA, we are advising a Maintain GMA for 65% of them. For four of these 80 features we had not previously advised on the GMA. For 67, the GMA remains unchanged since our previous advice⁹. For the remaining nine (in six sites), we have sufficient new evidence to recommend changing the GMA from Recover to Maintain.

¹⁰ The Ecological Network Guidance (ENG) was provided to regional stakeholder groups and regional MCZ project teams to enable them to identify potential MCZs during the Regional Projects ([Natural England and JNCC 2010](#)). Non-ENG features are those that we not originally described in the guidance.

- For the remaining 43 features where we are advising a Recover GMA; one had not previously been assessed, the GMA remains unchanged since our previous advice⁹ for 21 and for the final 21 features (in eleven sites) we are advising a change in GMA from Maintain to Recover as a result of new evidence.

Key findings from our assessments of the new site options:

In total, we are providing advice on confidence in presence and extent and GMA for **16 features** from **eight new site options**.

- We are advising that there are scientific grounds to support designation of these 16 features.
- We have not previously advised on confidence or GMA for 13 of the features in the eight new sites because they have been identified as part of our Tranche 3 advice on options to address shortfalls in the MPA network. We are advising a GMA of Maintain for four of these features and Recover for nine.
- The remaining three features were originally recommended in the Broadbench to Kimmeridge Bay rMCZ. These have now been incorporated into the Purbeck Coast new site option. We have reassessed the confidence and GMA for these three features; two have increased in confidence for feature presence and extent (to High/High) and one feature remains unchanged (High/High). We have not changed our advice on the GMA for these three features; all remain Maintain.

Acknowledgements

The project managers, Sam King and Heidi Pardoe, wish to thank the following individuals for their work in producing this advice: from the national teams; Lucy Abram, Maria Alvarez, Alex Baker, Alex Banks, Tom Barnfield, Sean Bennett, Ross Bullimore, Richard Caldow, Ruth Cantrell, Hester Clack, Victoria Copley, Roger Covey, Emma Dade, Awantha Dissanayake, Lydia Dixon, Bart Donato, Mark Duffy, David Evans, Alex Fawcett, Tim Fegan, Laura Gannon, Maddie Goodey, Andy Graham, Tom Hardy, James Highfield, Nikki Hiorns, Corallie Hunt, Neil Irvine, Paul Ivory, Charlotte Johnson, Emily Kirkham, Lou Knights, Jan MacLennan, Charlotte Marshall, Eddy Mayhew, Mike Meadows, Angela Moffat, Aoife Ni Neachtain, Chris Pirie, Joanna Redgwell, Jim Robinson, Helen Rowell, Ian Saunders, Hazel Selley, Joana Smith, Claire Tancell, Duncan Vaughan, Randy Velterop, Emma Wheeler, Rob Whiteley, Rachel Williams and, from the area teams: Jane Alpine, Stephanie Ashman, Alison Atterbury, Elizabeth Bailey, Gavin Black, Laurence Browning, Kate Bull, Hilary Crane, Connor Donnelly, Georgina Evans, Katie Finkill-Coombs, Zoe Gorvett, Emily Hardman, Giulietta Holly, Melina Jack, Lisa Jenner, Mark Johnston, Audrey Jones, Emma Kelman, Alice Kimpton, Andrew Knights, Rebecca Korda, Jennifer Love, Alison McAleer, Sangeeta McNair, Richard Morgan, Andrej Narozanski, Kate Owen, Miriam Parish, Mel Parker, Ruth Porter, Ros Preston, Christina Relf, Helena Robson, Trudy Russell, Catherine Scott, Chris Singfield, Kate Sugar, Fiona Tibbitt, Carolyn Waddell, Dee Stephens, Jenny Murray and Elaine Young. We would also like to thank the area team leaders; Stephen Ayliffe, Ingrid Chudleigh, Clive Doarks, Rob Lloyd, David Marshall, David Overton, Helen Rawson 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 3. Summary of advice on New site options

Annex 4. Results tables for advice on Regional Project recommended MCZs and New site options

1 Introduction

1.1 Purpose of this advice

This report contains a summary of Natural England's Tranche 3 confirmed pre-consultation advice to Defra (provided in February 2017) on 27 Regional Project recommended Marine Conservation Zones (rMCZs) in English inshore waters and the addition of 36 further features to 16 MCZs designated in 2013 or 2016. It also contains our advice on eight inshore new MCZ site options. 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 under consideration for consultation in 2017. It does not present social and economic considerations of designating MCZs as this is outside of Natural England's remit and will be covered 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 or more generally. 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 4 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 authority¹¹ to direct JNCC and Natural England to monitor MCZs.
- 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 complete the Government's commitment to the Blue Belt, by addressing remaining 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 complete the Government's contribution to the ecologically coherent network of MPAs in the North East Atlantic and help safeguard sustainable, productive, healthy and biologically diverse seas.

Sites and features for the third tranche have been 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 advice on 43 inshore sites recommended by the Regional Projects (195 features in 27 undesignated rMCZs¹² and 36 undesignated (further) features in 16 MCZs designated in Tranche 1 or Tranche 2), to assist Defra in identifying sites and their constituent features for public consultation on a third tranche of rMCZs.

Of these 231 features, 171 were originally proposed by the Regional Projects. We are providing updated advice for these features which can be identified by their feature status 'Regional Project Feature' (**Annex 4**). The remaining 60 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 4**). Of these SNCB proposed features, we have provided advice on 38 during previous tranches.

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 ecological gaps¹³ for both habitats and species in the existing MPA network. In response, Natural England has provided scientific advice on 16 features¹⁴ in eight inshore new site options (**Annex 3**, identified by site type 'New site option' and feature status 'T3 SNCB Additional Feature'¹⁴ in **Annex 4**).

¹¹ In the MCZ Project area the appropriate authority is the Secretary of State.

¹² Advice is also provided on an alternative boundary for two of the sites: Bembridge and Yarmouth to Cowes

¹³ 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 has identified remaining shortfalls in the UK MPA Network for which further sites may be required to fill as part of Tranche 3 ([JNCC 2016](#)).

¹⁴ 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 4**. The remaining 11 new site option features reflect the network shortfalls identified by [JNCC \(2016\)](#); see **Annex 3** for further details.

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. Defra requested that Natural England and JNCC provide pre-consultation advice on the scientific case for designation of these highly mobile species MCZ proposals. **This joint advice is published separately.**

1.4 Structure of this advice summary document

This summary of advice comprises:

- i) An overview of Natural England's pre-consultation Tranche 3 advice (**this document**)
- ii) Four annexes (each provided as a separate document) presenting the conclusions of our assessments for the inshore Regional Project recommended MCZs (rMCZs) and the new site options. The annexes also contain detailed information, analysis and quality assurance that underpins our Tranche 3 pre-consultation advice, in addition to that described in this document. These accompanying documents are:

Annex 1: Advice on Regional Project recommended 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
- 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 4)
- 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 options¹⁵

Annex 2: Advice on smelt as a feature of Regional Project rMCZs

- Background information on Natural England's advice on smelt (*Osmerus eperlanus*)
- Advice on smelt as a feature of eight rMCZs/MCZs¹⁶

Annex 3: Advice on new site options comprised of:

- Background information
- Site overviews including site descriptions and maps
- 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 4)
- 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 4: Results tables for advice on Regional Project recommended MCZs and new site options. These tables are comprised of:

- **Confidence Assessment:** assessment of confidence in the evidence for presence and extent of features (Table 1)

¹⁵ For: Axe Estuary rMCZ; Camel Estuary rMCZ; Yarmouth to Cowes rMCZ; Bembridge rMCZ; Swanscombe rMCZ

¹⁶ Alde Ore Estuary rMCZ; Blackwater, Crouch, Roach and Colne Estuary MCZ; Medway Estuary MCZ; Ribble Estuary rMCZ; Solway Firth rMCZ; Upper Thames Estuary rMCZ; The Swale Estuary MCZ; Wyre-Lune MCZ

- **Evidence:** evidence sources used and not used (Table 2 and Table 3, respectively)
- **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 4)
- **T1 and T2 site features:** a summary of our advice for potential additional features of MCZs designated in Tranche 1 or Tranche 2 (Table 5)
- **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 6)
- **Data sufficiency – Site level (rMCZs only):** analysis of whether sufficient evidence is present to support the designation of each site as a whole (Table 7)
- **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 8)

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 also has a series of internal standards that staff follow when producing work to ensure that the advice provided and the 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 44 Regional Project recommended MCZs and eight new site options that this advice covers are listed below [listed in alphabetical order]:

Regional Project recommended MCZs

- Alde Ore Estuary
- Axe Estuary¹⁷

New Site Options

- Albert Field
- Fal and Helford

¹⁷ Potential boundary amendments are described for the Axe Estuary rMCZ, Camel Estuary rMCZ, Swanscombe rMCZ and Rye

- Beachy Head East
 - Bembridge¹⁸
 - Blackwater, Crouch, Roach and Colne Estuary¹⁹
 - Broadbench to Kimmeridge Bay^{20, 21}
 - Camel Estuary¹⁷
 - Cape Bank
 - Chesil Beach and Stennis Ledges¹⁹
 - Cromer Shoal Chalk Beds¹⁹
 - Dart Estuary²¹
 - Devon Avon Estuary²¹
 - Dover to Deal¹⁹
 - Dover to Folkestone¹⁹
 - Erme Estuary
 - Goodwin Sands
 - Hythe Bay²¹
 - Isles of Scilly: Bristows to the Stones¹⁹
 - Isles of Scilly: Higher Town¹⁹
 - Isles of Scilly: Men a Vaur to White Island¹⁹
 - Isles of Scilly: Peninnis to Dry Ledge¹⁹
 - Kentish Knock East
 - Kingmere¹⁹
 - Medway Estuary^{19,21}
 - Morte Platform
 - Norris to Ryde
 - Offshore Foreland.
 - Orford Inshore
 - Otter Estuary
 - Ribble Estuary²¹
 - Selsey Bill and the Hounds²¹
 - Solway Firth
 - South Dorset¹⁹
 - South of Portland
 - Studland Bay
 - Swanscombe²²
 - Taw Torridge Estuary
 - Thanet Coast¹⁹
 - The Swale Estuary¹⁹
 - Torbay¹⁹
 - Upper Thames Estuary²²
 - Whitsand and Looe Bay¹⁹
 - Wyre-Lune²¹
 - Yarmouth to Cowes¹⁸
- Estuaries
 - Helford Estuary
 - North West of Lundy
 - Purbeck Coast
 - Rye Bay¹⁷
 - South of Hythe Bay
 - Torbay Extension

1.8 Advice on boundary amendments

This section aims to briefly describe the rationale behind the boundary amendments suggested for 14 of

Bay new site option, but have not been implemented in our advice – see Section 1.8 for details.

¹⁸ Advice on Bembridge and Yarmouth to Cowes is provided for two boundary options – see Section 1.8 for details.

¹⁹ Advice on additional feature(s) for this designated MCZ.

²⁰ Broadbench to Kimmeridge Bay rMCZ has been combined with the Purbeck Coast new site option and so advice is not provided for the rMCZ separately (see **Annex 3** for further details).

²¹ Advice provided on amended boundary – see Section 1.8 for further details.

²² Advice provided for these sites following division of the original Thames Estuary rMCZ – see Section 1.8 for further details

the Regional Project rMCZs and one of the new site options included in our Tranche 3 pre-consultation advice. At the time of provision of this advice to Defra (February 2017), some of these amendments had been implemented with the agreement of Defra whilst others were yet to be agreed. The latest status of those agreements is presented in Table 1 of [Appendix 1 below](#).

In general, there are three broad reasons why boundary amendments have been proposed. They either reflect our improved understanding of the sites and their features (i.e. since the boundaries were first proposed by the Regional Projects) and/or are intended to address gaps in the MPA network, or have arisen through informal stakeholder engagement and are considered likely to improve stakeholder support for the site. Further site-specific details are provided in Table 1 of [Appendix 1 below](#).

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

Presented below is a summary of how Natural England's pre-consultation MCZ advice has been developed for the **Regional Project recommended MCZs (rMCZs)** 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. How confidence is assessed and described can vary between the different assessments.

In **Annex 4** (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 4** (Table 4) we have taken account of the confidence of the sensitivity of features to pressures, confidence in feature extent and whether 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. We have provided advice on our confidence in the condition of features following Protocol F ([JNCC and Natural England 2012b](#)). For a detailed discussion on these uncertainties see Protocol F.

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 and 2.5 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 rMCZs 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 rMCZ features, new data which have become available since Natural England's Tranche 2 post 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 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 861 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.

Geological features notes: Natural England does not hold appropriate geographic/spatial data for the geological features therefore they cannot be assessed by the automated process described above. The confidence assessment results provided in Table 1 of **Annex 4** 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 4**. 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.

2.3.3 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](#))

2.3.4 Quality assurance process

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

Regional Project recommended MCZs and new site options

The Natural England MCZ Evidence Panel convened on 27th April 2016 to assess all new evidence submitted following the 2015 Confidence Assessment for Tranche 2 MCZs for its suitability for inclusion in the Tranche 3 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 include 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).

Regional Project recommended MCZs²³

Following the first run of the automated confidence assessment process undertaken to generate the advice for the rMCZ features, the results of the confidence assessment for the Regional Project recommended MCZs were subjected to National and local Area Team quality assurance (QA). The first National Team QA, completed during a workshop (17th – 20th May 2016), aimed to check that the automated confidence assessment process had been carried out correctly, verify the generated outputs, and to ensure 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 are derived solely on the basis of the presence of two or three survey points. A record of issues, discussions, decisions and actions was taken and is available on request from Natural England.

The first QA by local staff took place during 6th – 8th June 2016 through a series of joint National and Area Team QA workshops. The aim of this QA was to check 100% of the confidence assessment results and identify, 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.

Following a second run of the automated confidence assessment process to take into account changes to the evidence base flagged through the QAs, a second National QA workshop was held (6th – 7th July 2016) to verify all actions had been actioned during the first National and Area Team QA and Evidence Panel procedures. 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 June workshops had been carried out and for final validation of the Tranche 3 pre-consultation confidence assessment results for Regional Project recommended sites.

New site options

The reduced number of sites and features meant that the QA process applied to the new site options (and four Regional Project recommended rMCZs²³) could be streamlined compared to that applied to the Regional Project rMCZ results, whilst still ensuring the same level of rigor was applied.

Following the automated confidence assessment process the results were subjected to National and local Area Team quality assurance (QA). This QA process was undertaken in the period leading up to and during dedicated joint National and Area Team QA workshops (11th-16th January 2017). The overarching aims of the QA process were to validate the automated confidence assessment results and to ensure all data standards and protocols were adhered to. The more specific aims of the Area Team QA was to check 100% of the confidence assessment results and identify any incidences where the

²³ The exceptions are Bembridge (V2), Hythe Bay, Yarmouth to Cowes (revised) and Cromer Shoal Chalk Beds as advice for these rMCZs was generated alongside that for the new site options. Therefore the QA process for new site options applies to these sites/boundary options instead.

outputs seemed at odds with expert local knowledge. These incidences were discussed and agreed between National and Area Teams prior to, or at, the workshops. Results were amended by National specialists either prior to, during, or just after the workshops where additional evidence allowed expert judgement or expert local knowledge to be used. A record of issues, discussions, decisions and required actions was taken and is available on request from Natural England. Any changes in confidence were subsequently checked again by the Area Teams to further confirm all identified actions had been carried out and for final validation of the Tranche 3 pre-consultation confidence assessment results for new site options.

2.4 Condition Assessment, General Management Approach and Risk

2.4.1 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 recommended sites (rMCZs) and new site options, unless stated otherwise below.

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

2.4.2 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 objective²⁴. 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 it is sensitive (via the activities that exert those pressures), to the point where it may be in unfavourable condition.

For all new site option features, and for those features of the Regional Project rMCZs which required a revised assessment of feature condition (see Section 2.4.3 below for further explanation), 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 vulnerability assessment (VA) was conducted for all features. The vulnerability assessment 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](#)).

²⁴ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/259972/pb14078-mcz-explanatory-note.pdf

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 4 - Results tables**.

2.4.3 Determining whether the feature's likely condition and GMA needed to be reassessed in Tranche 3

As we have not previously advised on the features of the new site options, this section applies to the rMCZ features only.

The likely condition and GMA has been re-assessed for Regional Project rMCZs where new information has become available since the previous advice such as:

- 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 (or conservation objective) advised previously has been advised again. Where applicable, the GMA (or conservation objective) determined in previous advice is also presented in Table 4 of **Annex 4**.

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).

2.4.4 Application of updated sensitivity assessments

The most up-to-date sensitivity evidence from MarLIN, the Marine Evidence based Sensitivity Assessment (MarESA)²⁵ 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 four, five and six (see glossary). An assessment (Hiscock 2016) was carried out to predict which EUNIS habitats at levels four, five and six may be present in each rMCZ 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 (ie EUNIS level four, five or six 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 benchmark²⁶ 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.

2.4.5 Expert judgement vulnerability assessment review prioritisation rules

An automated process was initially used to determine the potential vulnerability of each feature in each site to a given activity. This automated process was based on the vulnerability assessment process described within section 2.4.2 above. The automated outputs were then subject to expert judgement review by Natural England's (local) site leads and senior advisers and (national) sector specialists (see section 2.4.8 for further information).

2.4.6 Assessment of current and future risk

The risk assessment is designed to identify where features with low confidence in presence and extent should be considered nevertheless 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 40 features from 15 rMCZs²⁷.

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.

²⁵ https://www.marlin.ac.uk/species/sensitivity_rationale

²⁶ Pressure benchmark: Hypothetical evidence reference point for the pressure at which sensitivity assessments have been carried out

²⁷ Excluding the duplicates arising from the advice on the Bembridge and Yarmouth to Cowes boundary options

2.4.7 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.
- 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.

2.4.8 Quality assurance process

In addition to the quality assurance (QA) process applied to our pre-consultation advice as a whole (Section 2.2), the following levels of quality assurance (QA) were applied during the development of our advice on likely condition, GMA and risk (where applicable) for rMCZs and new site options.

The Natural England MCZ Evidence Panel convened on 27th April 2016 to assess all new evidence submitted following the 2015 GMA for Tranche 2 MCZs 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 had not previously been used for production of SNCB Statutory Advice on recommended MCZs
- The evidence contains 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 quality assured 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 quality assured internally to ensure tools were producing correct results including:

- ArcGIS tool outputs (spatial comparison results for overlapping activity and feature datasets)
- MS Access database outputs (automated exposure, sensitivity, priority scoring, vulnerability assessment)

Site leads completed a review of the vulnerability assessment including the automated exposure and sensitivity results and applied expert judgement, providing a narrative to support any changes. Changes made by site leads were then reviewed and quality assured by Natural England Sector Specialists and local Area Team Senior Advisors. A series of joint National and Area Team QA workshops and conference calls were used to facilitate the review and quality assurance of the advice on the likely condition and GMA for both rMCZs and new site options.

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

2.5.1 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) Vulnerability assessments undertaken under Protocol F ([JNCC and Natural England 2012b](#)); and
- d) Additional expert advice provided by feature specialists where appropriate, for example 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](#)).

2.5.2 Assessment of feature level data sufficiency

A confidence score of at least moderate in both feature presence and feature extent, based on the application of Technical 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^{28,29} 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; or
 - b. Is highly vulnerable to one/more pressures.

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](#)):

²⁸ 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](#)).

²⁹ Column H of Table 6 in **Annex 4** 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.

- 1) Conservation benefits support the feature designation (Priority feature designation)
- 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 together with our advice on whether further data will be available in the near future that may improve confidence in feature presence/extent (see Table 6 of **Annex 4 - 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' or 'Priority feature designation', as well as for selected features with the outcome 'No designation', a feature narrative is provided in **Annex 1 - Advice on Regional Project rMCZs**. This feature narratives support our advice on whether there is sufficient evidence or other ecological considerations to support the designation of each feature.

2.5.3 Assessment of site level data sufficiency

The site based assessment, which has been undertaken for Regional Project recommended MCZs only (i.e. not new site options as these were developed to address feature shortfalls in the MPA network), includes consideration of three questions:

- 1) Whether the site requires designation of additional features because they provide direct ecological support to other recommended HOCl/SOCl features identified for designation.
- 2) Where it is possible to calculate, what proportion of total site area is covered by features for which scientific confidence in presence and extent is assessed as being sufficient for designation.
- 3) Whether a site as a whole potentially fills a 'gap'^{28,29} in the UK's contribution to an ecologically coherent network of MPAs.

In order to assess the first question, all SOCl and HOCl have previously been investigated to highlight any relationship with, or dependency on, other features (BSH, SOCl or HOCl). For example, in order to effectively protect a feature such as the Tentacled lagoon-worm (*Alkmaria romijni*), the 'supporting feature' intertidal mud would also need to be protected. This process took account of the feature definitions from the OSPAR List of Threatened and/or Declining Species and Habitats ([OSPAR 2008](#)) and the UK List of Priority Species and Habitats (UK BAP) ([BRIG 2007](#)). The confidence assessment results of both the target SOCl/HOCl feature and any required supporting feature were then considered together to ensure that recommendations for designation were in accordance with each other.

No incidences were identified where confidence in a 'supporting feature' would be too low for it to be designated based on the Protocol E process ([JNCC and Natural England 2012a](#)) and, as such, no further action was required for this stage.

For question 2, the spatial proportion of sites covered by features for which scientific confidence in presence and extent was sufficient for designation was assessed except where:

- The site overlaps with an SAC, and therefore the site may not have been put forward for all the potential MCZ features present within the site.
- The site has landward boundaries (such as estuarine sites).

- A feature is being added to an MCZ that is already designated and there are no proposed boundary amendments for that MCZ (therefore site level data sufficiency has previously been advised and accepted).
- Information on feature extent within the site has been primarily derived from point data, and therefore the calculation areas could be misleading.

For Question 3, Natural England's assessment of whether a feature/site could potentially fill a 'gap' within the network is based on the updated outputs of the MPA network analysis undertaken by JNCC for Defra in 2016 ([JNCC 2016](#))^{28,29}. These outputs were cross-referenced with current feature confidence assessments to identify any instances where features enabling sites to fill gaps had only low confidence.

For Question 3, a number of sites were recorded as 'Maybe' filling a network gap. For some potential 'gap filling' features, multiple Tranche 3 options are under consideration. However if one or more of these other sites do not progress to designation, then the feature may become a 'gap' in the MPA network if the site in question were not designated.

2.5.4 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.

2.5.5 Quality assurance process

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

Natural England staff developed an automated process using MS Excel 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 is consistent with their local site knowledge.

The updated 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 rMCZs 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.

2.6 Advice on smelt (*Osmerus eperlanus*)

This component of our Tranche 3 pre-consultation advice focuses on the species feature of conservation

importance (FOCI) smelt (*Osmerus eperlanus*) for the Regional Project recommended MCZs (rMCZs) in which it is proposed as a feature. Details of the approach taken to assess smelt as a feature of the eight applicable rMCZs as well as the outcomes of the assessments themselves can be found in **Annex 2 – Advice on smelt as a feature of Regional Project MCZs**. A brief summary is provided below:

For MCZ features in Tranches 1–3 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 of rMCZs, along with an assessment of scientific confidence in condition, to provide the proposed Conservation Objective (now replaced by the General Management Approach, 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 as a feature of the eight rMCZs.

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 (*advice provided separately*) 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 eight rMCZs for smelt against the highly mobile species principles (Ecological significance, Persistence, Site size and delineation, Appropriateness of management).

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 assessments of the Regional Project recommended rMCZs and new site options, which are provided in **Annex 4**:

- **Confidence Assessment:** assessment of confidence in the evidence for presence and extent of features (Table 1)
- **Evidence:** evidence sources used and not used (Table 2 and Table 3, respectively)
- **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 4)
- **T1 and T2 site features:** a summary of our advice for potential additional features of MCZs designated in Tranche 1 or Tranche 2 (Table 5)
- **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 6)

- **Data sufficiency – Site level (rMCZs only):** analysis of whether sufficient evidence is present to support the designation of each site as a whole (Table 7)
- **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 8)

3.2 Key findings from our assessments of the Regional Project recommended MCZs (rMCZs)

In total, we are providing advice on confidence in presence and extent and the General Management Approach (GMA) for **231 features** from **43 rMCZs³⁰ and MCZs**. This includes:

36 further features for 16 existing MCZs (designated in Tranche 1 or Tranche 2):

- These features have different origins: 16 were originally proposed by the Regional Projects, the remaining were first proposed by Natural England during Tranche 2 (seven features) or Tranche 3 (13 features).
- Smelt (*Osmerus eperlanus*)³¹ is a feature in three of the sites and has been assessed against the highly mobile species principles³². For one site, we have scored the feature as Moderate or High across each of the four principles. For another, only two of the principles have achieved this score and the other two have been assessed as Low. The scores for the third site depend on whether or not it is considered alongside a separate smelt site in the same locality due to evidence that the populations are linked. A GMA of Recover has been advised for smelt in all three sites. For one site this represents a change in the previously advised GMA due to our improved understanding of the exposure of the feature to anthropogenic pressures. We have not previously provided advice for smelt in the other two sites.
- For the remaining 33 of these further features, we are advising that there are scientific grounds to support their designation. Of these, two are currently considered data insufficient and so our advice is based on additional conservation/ecological considerations³³.
- We have not previously advised on confidence or GMA for 11 of the features in nine of the sites. For nine of these features we have at least Moderate/Moderate confidence in their presence and extent. We are now advising a GMA of Recover for five of these features.
- We are resubmitting our previous³⁴ advice on confidence and GMA for 12 of the features across three of the designated sites. We are still advising that we have High/High confidence in the presence and extent of 50% of these features. We have High/Moderate or Moderate/Moderate confidence in the remaining six features. We are still advising a Recover GMA for all 12 of these features. For one further existing feature, we are providing GMA advice for the first time (resubmitted with previously advised³⁴ Moderate/Moderate confidence; Maintain GMA now being advised).
- We have reassessed the confidence and GMA for the remaining nine features due to the availability of new evidence: all have increased in confidence for feature presence and extent (to High/High or Moderate/Moderate). For five of these features the GMA remains unchanged since our previous

³⁰ Advice is also provided on an alternative boundary for two of the sites: Bembridge and Yarmouth to Cowes

³¹ 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](#)). 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 2** for further details) and Undulate ray (see **Annex 4**) as potential features of nine Regional Project rMCZs. 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 joint advice (with JNCC) was provided separately to Defra and has also been published.

³² These four principles, which are detailed in [JNCC and Natural England \(2016a\)](#) and summarised in Section 2.3 of **Annex 2**, are: Ecological Significance, Persistence, MPA size and delineation and Appropriateness of Management.

³³ For these two features, we have recently received additional data which will most likely improve our confidence in their presence and extent – see **Annex 1** for details.

³⁴ Previous advice from 2012-2015, depending on when Defra last requested advice on the feature.

advice³⁴ (three are Maintain, two are Recover). For the final four features, we are now recommending a Recover GMA for two and Maintain for two, as a result of the new evidence.

- In summary, we are advising a Maintain GMA for 12, and Recover GMA for 24, of these 36 further features for 16 existing MCZs.

195 features from 27 Tranche 3 rMCZs. Of these:

- 40 features (across nine sites) have been identified through surveys since the regional MCZ projects reported. Of these SNCB additional features:
 - Nine have not previously been assessed and we are now advising there is sufficient scientific confidence in the presence and extent of these features to support designation and that four will contribute to gaps in the MPA network ([JNCC 2016](#)). We are advising a Maintain GMA for four and Recover GMA for five of these Tranche 3 additional features.
 - 31 were assessed and advised on during Tranche 2. We are now advising that there is sufficient scientific confidence in the presence and extent, or additional conservation/ecological considerations, to support designation of 21 of these features, for which we have advised a Maintain GMA for 10 and Recover GMA for the remaining 11
- Smelt³¹ was originally proposed by the regional MCZ projects as a feature in five of the sites; although one site was part of the original Thames Estuary rMCZ and is now being advised on as the Upper Thames Estuary rMCZ. For smelt as a feature of four of these sites, we have assigned a score of Moderate or High for each of the four highly mobile species principles³². For the fifth site, two of the principles have been scored as Low and the other two as Moderate. A GMA of Recover has been advised for smelt in all five sites; this is a change from our previous advice for the four applicable sites and is a result of our improved understanding of the exposure of smelt to anthropogenic pressures.
- The remaining 150 features are also features originally proposed by the regional MCZ projects. For these features:
 - 31% of assessments for feature presence have increased in confidence, 20% have decreased and 49% remain unchanged.
 - 42% of assessments for feature extent have increased in confidence, 19% have decreased and 39% remain unchanged.
 - We now have High/High or High/Moderate confidence in presence/extent for 53% of the features, Moderate/Moderate confidence in 13%, Low confidence (Moderate/Low, Low/Low, High/Low) in 18% and no confidence in 16%.
 - We are advising that there are scientific grounds or additional conservation/ecological considerations to support designation of nearly 70% of the 150 features.
 - We have not assessed the GMA for 18% of the features because we have no confidence in their presence and extent or because they are non-ENG features which are being realigned to ENG features.
 - For the 123 features where we have assessed the GMA, we are advising a Maintain GMA for 65% of them. For four of these 80 features we had not previously advised on the GMA. For 67, the GMA remains unchanged since our previous advice³⁴. For the remaining nine (in six sites), we have sufficient new evidence to recommend changing the GMA from Recover to Maintain.
 - For the remaining 43 features where we are advising a Recover GMA; 1 had not previously been assessed, the GMA remains unchanged since our previous advice³⁴ for 21 and for the final 21 features (in eleven sites) we are advising a change in GMA from Maintain to Recover as a result of new evidence.

3.3 Key findings from our assessments of the new site options

In total, we are providing advice on confidence in presence and extent and GMA for **16 features** from **eight new site options**.

- We are advising that there are scientific grounds to support designation of these 16 features.
- We have not previously advised on confidence or GMA for 13 of the features in the eight new sites because they have been identified as part of our Tranche 3 advice on options to address shortfalls in the MPA network. We have High/High or High/Moderate confidence in presence/extent for 11 (85%) of them and Moderate/Moderate confidence for the remaining two (15%). We are advising a GMA of Maintain for four of these features and Recover for nine.
- The remaining three features were originally recommended by the Regional Project in the Broadbench to Kimmeridge Bay rMCZ. These have now been incorporated into the Purbeck Coast new site option. We have reassessed the confidence and GMA for these three features; two have increased in confidence for feature presence and extent (to High/High) and one feature remains unchanged (High/High). We have not changed our advice on the GMA for these three features; all remain Maintain.

3.4 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 4**).

Table 1 provides information about:

- the site type (Regional Project (RP) rMCZ, Designated MCZ or New site option);
- site name;
- the features in each site;
- feature type;
- Feature status:
 - 'Regional Project Feature' refers to features originally recommended by the Regional Projects (RPs);
 - 'T2 SNCB Additional Feature' refers to features within RP recommended sites that Natural England first advised on as part of our Tranche 2 advice (for both designated and undesignated MCZs under consideration as part of Tranche 2). These additional features were identified through surveys carried out since the RP recommendations. 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 are being advised on by Natural England for the first time, within original RP recommended sites (both designated and undesignated rMCZs) and the New site options under consideration as part of Tranche 3. These features may contribute to a shortfall in the MPA network based on JNCC's MPA network analysis ([JNCC 2016](#)) or may better reflect the habitats present within the site. 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;
- 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 rMCZs only: the narratives can be found in **Annex 1** or **Annex 2** for smelt)
- the evidence used to determine the current confidence (detailed in Table 2 – see Section 3.5) and
- any evidence not used and the reasons for non-inclusion (detailed in Table 3 – see Section 3.6)

Evidence sources used in the development of this advice

Table 2 of the results tables (**Annex 4**) 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.

3.6 Evidence not used

Table 3 of the results tables (**Annex 4**) lists evidence of relevance to Tranche 3 rMCZs or new site options, which was not available in time or not suitable for use in the pre-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. Where applicable/appropriate, the evidence will be used to inform Natural England's post-consultation assessments of confidence.

3.7 Likely condition, General Management Approach (GMA) and Risk

Table 4 of the results tables (**Annex 4**) 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 pre-consultation advice this equates to 40 features from 15 rMCZs³⁵.

For smelt (*Osmerus eperlanus*), further details on the rationale behind the advice on the GMA is provided in **Annex 2 – Advice on smelt as a feature of Regional Project rMCZs**.

Below is a description of the contents of Table 4.

- the site type (Regional Project (RP) rMCZ, Designated MCZ or New site option)

³⁵ Excluding the duplicates arising from the advice on the Bembridge and Yarmouth to Cowes boundary options

- site name;
- the features in each site;
- feature type;
- current likely condition of feature (favourable or unfavourable)
- confidence in feature condition (Protocol F) (low, moderate or high)
- previous General Management Approach (GMA): the GMA (Maintain or Recover) advised when we last published advice on this feature in this site (where applicable);
- pre-consultation General Management Approach (GMA): the GMA (Maintain or Recover) we are advising to go forward at consultation
- rationale where GMA change advised: the reason for changing the GMA since our previous published advice (where applicable i.e. RP rMCZs only)
- rationale for advised Recover GMA (new site options only)
- 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

3.8 Further features of Tranche 1 and Tranche 2 MCZs

Table 5 of the results tables (**Annex 4**) lists the features proposed for addition to Tranche 1 and 2 designated sites and provides a summary of our Tranche 3 pre-consultation advice (this advice is detailed more thoroughly in Tables 1–4 of **Annex 4**). 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.

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

Table 6 of the results tables (**Annex 4**) contains the feature level data sufficiency results and **Table 7** contains the results of the site level sufficiency assessment process (as described in Section 2.5). The feature level results draw on the feature confidence assessments displayed in Table 1 of **Annex 4**, 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 6 of the advice spreadsheet.

'Not Assessed' in Table 6 refers to instances where Question 2 was not completed due to vulnerability assessments for these features not being undertaken due to insufficient suitable data available i.e. no confidence in feature presence / extent.

For some of the sites/features subject to Question 2 of the data sufficiency methodology (indicated by a 'Yes' in column M of Table 6), 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.

Table 7 contains the analysis of whether sufficient evidence is present to support the designation of each site as a whole. This assessment has been completed for Regional Project recommended MCZs (RP rMCZs) only. This is because the new site options were developed to address feature shortfalls in the MPA network and therefore the answers to Questions 1–3 of the site level data sufficiency assessment do not add any additional useful information for the new site options.

As described in Section 2.5.3, Question 2 has not been calculated where a Regional Project rMCZ overlaps with a SAC or where the site is defined by estuarine landward boundaries ([JNCC and Natural England 2016c](#)). The analysis provided used a cut-off of 10% for SAC overlaps, thus where the site overlaps an SAC by >10%, Question 2 has not been answered. Additionally, where presence / extent data has been derived primarily from point data or where a feature is an addition to a Tranche 1 or 2 designated site, Question 2 has not been answered. In these instances the Question 2 calculation would be misleading and has therefore not been presented.

For sites defined as 'Maybe' for Question 3 in Table 7, multiple options exist for a 'gap' feature, and these sites may be classed as a 'gap filler' if other proposed sites for 'gap' features do not progress to designation ([JNCC 2016](#)).

3.10 Triggering activities

Table 8 of the results tables (**Annex 4**) contains information on the socio-economic activities, or direct evidence of feature condition, that have triggered a Tranche 3 pre-consultation recommendation of a Recover GMA (see Table 4 of **Annex 4**), according to Natural England's best available evidence base.

This list excludes smelt (*Osmerus eperlanus*); please refer to **Annex 2** for further information relating to the advised GMAs for smelt.

Please note for three Regional Project rMCZs (Dover to Deal, Dover to Folkestone and The Swale Estuary), the triggering activities information is a copy of that previously provided as we are resubmitting our previous advice for these sites (see Table 5 of **Annex 4**).

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](#)).

Catadromous: Fish which spend most of their lives in fresh water and then migrate to the sea to breed.

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 responsible for the environment, for food and farming, and for rural matters.

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 both Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

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 conditions³⁶.

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:**

³⁶ This definition is aligned with the Marine Strategy Framework Directive's biodiversity descriptor

- 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
 - ii. the structure, integrity and/or inherent functioning of these features are unimpaired and remain unobscured other than through natural processes³⁷.
- 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 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

³⁷ 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).

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).

Habitat of conservation importance (HOCl): 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 of 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 Project (MESH): 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.

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.

Network: Collection of individual Marine Protected Areas or reserves operating cooperatively and synergistically, at various spatial scales and with a range of protection levels that are designed to meet objectives that a single reserve cannot achieve (IUCN-WCPA 2008).

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.

Site of Community Importance (SCI): A site that has been adopted by the European Commission but has not yet been formally designated by the government of the relevant country.

Site of Special Scientific Interest (SSSI): Sites designated under the Wildlife and Countryside Act 1981 (as amended 1985, and superseded by the Countryside and Rights of Way Act 2000, and the Nature Conservation (Scotland) Act (2004)).

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 decisions. Stakeholders may also be individuals, groups, or other entities that are likely to have an effect on the outcome of management decisions.

Statutory Nature Conservation Body (SNCB): A collective term for the Countryside Council for 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 an MPA 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.

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Appendix 1 Details of boundary amendments presented in this advice.

Table 1 Rationale for and status of boundary amendments for Regional Project rMCZs and a new site option included in our Tranche 3 advice. Note: unless stated otherwise in the table, site boundary maps provided in **Annex 1** (advice on Regional Project rMCZs) show the amended boundary.

Site name	Rationale for boundary amendment	Status of boundary amendment in relation to our pre-consultation advice to Defra and current status (where changed)	Section/Annex of our advice where further details relating to the boundary amendment can be found
Axe Estuary	Proposed extension to include additional areas of coastal saltmarshes and saline reedbeds which are enclosed within the current boundary outline but are not currently considered part of the rMCZ due to their position in relation to mean high water (MHW).	Not implemented as part of our (quantitative) pre-consultation advice; this was based on the original (Regional Project proposed) boundary. Boundary amendment subsequently agreed by Defra and so will be incorporated into their consultation.	Qualitative advice on this boundary amendment can be found in Annex 1 (within the additional advice for the site).
Bembridge	The initial boundary amendment (Bembridge V1 in results spreadsheet – Annex 4) sought to exclude the commercial anchorage area based on information shown on Admiralty Charts, in order to enable the site to be taken forward with the necessary stakeholder support. The second boundary amendment (Bembridge V2 in results spreadsheet – Annex 4) was developed based on data from key stakeholders of the actual area used by commercial vessels for	As agreed with Defra, full (quantitative) pre-consultation advice was provided on both boundary options (V1 and V2). No advice is provided for the boundary originally proposed by the Regional Project.	A more detailed description of how the boundary options were developed is provided in Annex 1 (within the additional advice for the site).

	anchoring. This amendment (unlike V1) has stakeholder ³⁸ support but will result in the exclusion of the majority of the subtidal mud feature from the site.		
Broadbench to Kimmeridge Bay	Boundary extended to incorporate records of Stalked jellyfish (<i>Haliclystus</i> species) within the rMCZ. There is currently considered to be a gap in the network for this species, so this boundary change will contribute to creating a coherent ecological network.	As agreed with Defra, full (quantitative) pre-consultation advice provided on the amended boundary.	This rMCZ is fully contained within the Purbeck Coast new site option – see Annex 3 for further details. (Please note separate advice is not provided for the Broadbench to Kimmeridge Bay rMCZ)
Camel Estuary	Proposed extension to include additional areas of coastal saltmarshes and saline reedbeds which are both enclosed within the current boundary outline and immediately adjacent to it, but are not currently considered part of the rMCZ due to their position in relation to MHW.	Not implemented as part of our (quantitative) pre-consultation advice; this was based on the original (Regional Project proposed) boundary. Boundary amendment subsequently agreed by Defra and so will be incorporated into their consultation.	Qualitative advice on this boundary amendment can be found in Annex 1 (within the additional advice for the site).
Dart Estuary	Boundary amended to simplify the boundary along the edge of the river corridor, and include small areas of saltmarsh that extend from the intertidal above MHW.	As agreed with Defra, full (quantitative) pre-consultation advice provided on the amended boundary.	N/A
Devon Avon Estuary	Boundary amended to simplify the boundary along the edge of the river corridor, and include small areas of	As agreed with Defra, full (quantitative) pre-consultation advice provided on the amended boundary.	N/A

³⁸ Associated British Ports and Queen's Harbour Master

	saltmarsh that extend from the intertidal above MHW.		
Hythe Bay	The size of the site has been reduced so that it only encompasses the main mapped area of the Subtidal mud feature. The new boundary better aligns with the original Regional Project intentions for the site proposal. The boundary amendment may result in some improvement in stakeholder support for this site.	As agreed with Defra, full (quantitative) pre-consultation advice provided on the amended boundary.	A map showing the boundary amendment can be found in Annex 1 .
Medway Estuary – for smelt (<i>Osmerus eperlanus</i>) feature only	The upstream limit of the boundary of this designated site has been extended to include the location smelt are known to spawn.	As agreed with Defra, full (quantitative) pre-consultation advice provided on the amended boundary.	A map showing the boundary amendment can be found in Annex 1 .
Offshore Foreland	In 2011 Balanced Seas recommended the boundary of Offshore Foreland rMCZ followed the 12 nm limit and the England-France boundary. In 2014 the England-France boundaries and 12 nm limits changed, meaning a strip of the rMCZ was now outside of the 12 nm limit; and a separate area was in French waters. The revised boundary now follows the new 12 nm and England-France boundary limits to follow the recommendations of the Balanced Seas recommendations, and does not result in any negative ecological	As agreed with Defra, full (quantitative) pre-consultation advice provided on the amended boundary.	N/A

	implications for the site.		
Ribble Estuary	The original rMCZ boundary was based on the Ordnance Survey map tidal limit. However most stakeholders consider the true tidal limit to be located upstream of this location. It is highly likely that spawning of smelt (<i>Osmerus eperlanus</i>) occurs at or close to the true tidal limit. The upstream limit of the boundary has therefore been extended to the weir at Red Scar wood so that the site encompasses the true tidal limit.	As agreed with Defra, full (quantitative) pre-consultation advice provided on the amended boundary.	A map showing the boundary amendment can be found in Annex 1 .
Rye Bay new site option	<p>This new site option was developed by Natural England with a boundary that contains large areas of subtidal sand, in order to address the shortfall for that feature in the network as it was understood at the time (JNCC 2016) - see Annex 3.</p> <p>Following receipt of Natural England's pre-consultation advice, Defra requested further advice on the Rye Bay new site option in relation to a potential boundary amendment. The objective of this boundary amendment was to exclude a commercial anchorage from the site.</p>	<p>Our (quantitative) pre-consultation advice to Defra was based on the boundary that was originally developed for the new site option.</p> <p>We subsequently developed qualitative advice on the potential boundary amendment, as requested by Defra.</p>	Qualitative advice on this boundary amendment can be found in Appendix 2 of Annex 3 (advice on new site options).
Selsey Bill and the Hounds	Short snouted seahorses	As agreed with Defra, full (quantitative) pre-	N/A

	<p>(<i>Hippocampus hippocampus</i>) were originally recommended by the Regional Project as a feature of the rMCZ, but the original boundary did not capture the records. The boundary has therefore been extended to encompass the seahorse records. This site is one of four Tranche 3 rMCZs being considered for this feature, for which there is currently considered to be a replication gap in the MPA network, and this site is considered to provide the best example.</p>	<p>consultation advice provided on the amended boundary.</p>	
<p>Swanscombe and Upper Thames Estuary</p>	<p>The Thames Estuary rMCZ has been split by Defra into two separate sites, one encompassing the upstream 'Smelt box' site (named Upper Thames Estuary) and the other incorporating the area downstream where the tentacled lagoon worm and other features are located (named Swanscombe).</p> <p>This division of the original rMCZ by Defra into two separate sites reflects the differing ecological and socio-economic considerations for smelt compared to the tentacle lagoon worm and associated habitat features.</p>	<p>As agreed with Defra, full (quantitative) pre-consultation advice provided on the amended boundaries for both sites.</p>	<p>N/A</p>

	<p>The boundary change at the upper end of the Thames Estuary rMCZ was to incorporate the area for which there are records of smelt (<i>Osmerus eperlanus</i>), although the remainder of the estuary is also likely to be important for larval development and for providing important wider nursery and feeding functions.</p> <p>The boundary was amended in the lower part of the site to fit more closely around new records of the tentacled lagoon worm (<i>Alkmaria romijni</i>) for which there is currently considered to be a gap in the ecological network.</p>		
Swanscombe	<p>Following provision of our pre-consultation advice to Defra based on the boundary described above (for this site and Upper Thames Estuary), Defra requested further advice on a stakeholder proposed boundary amendment.</p>	<p>Our (quantitative) pre-consultation advice to Defra was based on the boundary that was originally developed for the site (as described above for this site and Upper Thames Estuary jointly).</p> <p>We subsequently developed qualitative advice on the potential boundary amendment, as requested by Defra.</p>	<p>Qualitative advice on this boundary amendment can be found in Annex 1 (within the additional advice for the site).</p>
Yarmouth to Cowes	<p>Two potential boundary amendments were identified for this site. The first (reduction in extent of western boundary to avoid the mouth of Yar estuary), was proposed by</p>	<p>As agreed with Defra, full (quantitative) pre-consultation advice has been provided on both boundary configurations.</p> <p>The first set of advice</p>	<p>A more detailed description of the 'revised' boundary configuration is provided in Annex 1 (within the additional advice for the site).</p>

	<p>stakeholders. Defra may choose to implement this boundary amendment in order to alleviate stakeholder objection to this rMCZ and reduce socio-economic impacts of the designation. The second boundary amendment was recommended by Natural England as the rMCZ boundary should follow MHW. However the original boundary also included the saline lagoon habitat at Newtown Quay Lagoon (above MHW). The lagoon habitat is already protected through SAC and SSSI designations and the rare lagoon fauna are also protected under Schedule 5 of the Wildlife and Countryside Act 1981. Therefore, to avoid duplicate designations, it is recommended that the lagoon is removed from the rMCZ.</p>	<p>(Yarmouth to Cowes - original in advice spreadsheet – Annex 4) is based on the original (Regional Project recommended) site boundary. The second set of advice (Yarmouth to Cowes - revised in advice spreadsheet – Annex 4) is based on the boundary with the potential amendments described in this table having been implemented.</p>	
<p>Wyre-Lune</p>	<p>The original rMCZ boundary was based on the Ordnance Survey map tidal limit. However most stakeholders consider the true tidal limit to be located upstream of this location. It is highly likely that spawning of smelt (<i>Osmerus eperlanus</i>) occurs at or close to the true tidal limit. The upstream limit of the boundary has</p>	<p>As agreed with Defra, full (quantitative) pre-consultation advice provided on the amended boundary.</p>	<p>A map showing the boundary amendment can be found in Annex 1.</p>

	therefore been extended so that the site encompasses the true tidal limit.		
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