Review of the MCZ Features of Conservation Importance

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Contents

1. Introduction

During 2014, the Joint Nature Conservation Committee (JNCC), with input from Natural England, were requested by Defra to undertake an assessment of the Marine Protected Areas (MPA) network, to identify where there may be gaps in the current UK MPA network and where existing recommended Marine Conservation Zones (rMCZs) could help fill those gaps. The review was undertaken in advance of Tranche Two of the MCZ designation process and reported in November 2014, ahead of decisions by Defra over which rMCZs might go forward to public consultation.

This paper has been jointly prepared by JNCC and Natural England and relates to one element of the network assessment; the existing list of MCZ Features of Conservation Importance (FOCI). The original list developed in 2010 was outlined in the Ecological Network Guidance (ENG)[1] and was made up of features on the OSPAR List of Threatened and/or Declining species and habitats[2], the schedules of protected species of the Wildlife and Countryside Act (WCA) 1981[3], and the UK Biodiversity Action Plan (UKBAP) list of priority habitats and species[4]. The original MCZ FOCI lists are available in Tables 11 and 12 of the ENG. These lists cover an extensive array of habitats and species that are present in UK waters (in order to ensure that the range of habitats and species found in Secretary of State waters are protected). The ethos behind the MCZ FOCI list was that unique or important features in UK seas were given protection as part of MCZ designations. The rationale behind features being included or excluded from the MCZ FOCI list can be found in Tables 11 and 13 - 17 of the ENG, and the supporting text in Section 7.2.2. JNCC and Natural England determined a list of 22 habitats and 29 species that were deemed to be appropriate and important for national MPA designation in MCZs. These can be found in Tables 2 and 3 of the ENG.

Subsequent to the publication of the MCZ FOCI list, there have been some legislative changes or amendments to the original lists that formed the basis for the MCZ FOCI list. Particularly, following the introduction of Section 41 of the Natural Environment and Rural Communities Act 2006[5] (NERC), the list of habitats and species of Principal Importance (last

[1] Ecological Network Guidance. Available at: http://jncc.defra.gov.uk/PDF/100705_ENG_v10.pdf
[2] OSPAR List of Threatened and/or Declining Habitats and Species. Available at: http://jncc.defra.gov.uk/pdf/08-06e_OSPAR%20List%20species%20and%20habitats.pdf
[3] Wildlife and Countryside Act 1981. Available at: http://www.legislation.gov.uk/ukpga/1981/69
[4] UK Biodiversity Action Plan priority habitats and species. Available at: http://jncc.defra.gov.uk/page-5705
[5] Natural Environment and Rural Communities Act 2006. Available at: http://www.legislation.gov.uk/ukpga/2006/16/contents

updated in August 2010)[6] has replaced the UKBAP list of priority habitats and species [for English inshore waters] as well as including some features on the WCA 1981 schedules[3]. The original lists of habitats and species on both the UKBAP list and WCA 1981 schedules were used to draw up the MCZ FOCI list. Not all the habitats and species on the UKBAP list and/or WCA 1981 schedules were included on the NERC Act 2006 Section 41 list. While the NERC Act 2006 Section 41 list was available at the time the ENG was being written, it was not used to inform the MCZ FOCI list because the list of species of Principal Importance was being updated and was only published in August 2010 after the ENG was published (in June 2010). Furthermore, the UKBAP list was not formally withdrawn until July 2012 when the UK Post-2010 Biodiversity Framework was published[7]. Finally, the WCA 1981 schedules are reviewed quinquennially with species being added or removed as deemed necessary through the review process.

It is therefore appropriate to reflect on the provisions of both these Acts as some MCZ FOCI may no longer require the additional conservation mechanism provided by MCZs due to the legal provisions within these Acts or may have been reviewed and deemed less important and not fitting with the ethos of an MCZ FOCI. Furthermore, there may be additional habitats or species now considered to be rare, threatened or unique and that require conservation via MCZ FOCI protection.

It should also be recognised that the UKBAP list previously applied across the entire Defra marine area (i.e. out to 200 nautical miles (nm)), however, as a result of the amalgamation of the UKBAP list into the NERC Act 2006 Section 41 list, the offshore environment is no longer covered by any national habitats or species list because both the NERC Act 2006 and the WCA 1981 only apply to territorial waters out to 12nm. Therefore any MCZ FOCI present in the offshore area will not receive any protection through NERC Act 2006 Section 41 or the Schedules to the WCA 1981, leaving an MCZ as the only mechanism for the protection of some MCZ FOCI in offshore waters.

Despite these legislative and policy changes, the MCZ FOCI list has not until now, been reviewed to ensure that the habitats and species being considered for protection through a spatial measure (i.e. an MCZ) remain appropriate. Note that since the MCZ FOCI list was published in the ENG there have been two changes to the application of the list:

[6] Habitats and Species of principal Importance in England. Available at: http://webarchive.nationalarchives.gov.uk/20140605090108/http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx
[7] JNCC, UK Post-2010 Biodiversity Framework, July 2012. Available at: http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf

Subtidal sands and gravels (MCZ habitat FOCI)

In March 2013, JNCC and Natural England advised Defra that Subtidal sands and gravels should no longer be a habitat on the MCZ FOCI list. The feature is more broadly defined than the broad-scale habitats to which it directly correlates (Subtidal coarse sediment and Subtidal sand). More information on this recommendation is provided in JNCC and Natural England's supplementary advice on Subtidal sands and gravels[8]. The advice was formally accepted by Defra in November 2013[9] and the feature is no longer an MCZ FOCI.

Lagoon snail (*Paludinella littorina*) (MCZ species FOCI)

The Lagoon snail (*Paludinella littorina*) was originally included on the MCZ FOCI list due to its inclusion on Schedule 5 of the WCA 1981. Following the Quinquennial review of Schedule 5 in December 2008[10], Lagoon snail (*P. littorina*) was removed from Schedule 5 as it was found to be more common and widespread than previously thought. The species name no longer exists as a separate taxon as the original specimens used for the classification and description of the species were re-examined and found to have been variants of *Melarhaphe neritoides*, a much more common gastropod species[11]. Another co-generic lagoon snail, *Paludinella globularis* has been linked to *P. littorina* but is currently listed as being of *Least Concern* by the International Union for Conservation of Nature (IUCN). Consequently, *P. littorina* no longer requires the protection mechanisms associated with inclusion on Schedule 5 to the WCA 1981. The ENG noted this impending change (Section 7.2.2.2, Pg 73) and hence JNCC and Natural England – in agreement with Defra – no longer consider *P. littorina* as a feature worthy of enhanced protection through an MCZ beyond any protection afforded to a habitat in which it might occur.

A summary of the lists contributing to the MCZ FOCI list is provided below in Table 1. Table 1 also outlines the changes which have taken place since the original MCZ FOCI lists were published in the ENG in June 2010.

[8] JNCC and Natural England's advice on recommended MCZs: Supplementary advice on the Marine Conservation Zones Feature of Conservation Importance Subtidal sands and gravels. Available at: http://jncc.defra.gov.uk/pdf/181113%20Supplementary%20advice%20on%20Subtidal%20sands%20and%20gravels.pdf

[9] Marine Conservation Zones: Site designations and summary of site-specific consultation responses. Defra, November 2013. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/259856/mcz-site-specific-responses-20131121.pdf

[10] Fifth Quinquennial Review of Schedules 5 and 8 of the Wildlife & Countryside Act 1981: Report and Recommendations from the Joint Nature Conservation Committee. Available at: http://jncc.defra.gov.uk/PDF/5qr.pdf

[11] Kadolsky D. (2012) Nomenclatural comments on non-marine molluscs occurring in the British Isles. *Journal of Conchology* 41(1): 65-90.

Table 1: Summary of contributing lists to the MCZ Features of Conservation Importance list and changes since the Ecological Network Guidance was being developed and/or published

Contributing Habitat or Species list to MCZ FOCI list	Changes since ENG development
OSPAR List of Threatened and/or Declining species and habitats	None applicable
Schedules of protected species in the Wildlife and Countryside Act 1981	Two Quinquennial reviews each covering Schedules 5 and 8 of the WCA 1981 with species recommended for addition to or removal from both Schedules
The list of habitats and species of Principal Importance from Section 41 of the Natural Environment and Rural Communities Act 2006	List was not used to inform the original MCZ FOCI list and was revised in August 2010 (for species only)
UK Biodiversity Action Plan list of priority habitats and species	UKBAP was superseded in July 2012 when the UK Post-2010 Biodiversity Framework was published.

This current paper reviews the original list of MCZ FOCI (habitats and species) published in the ENG in June 2010 in light of the changes shown in Table 1. It examines the current positions of each of the features on national biodiversity lists and reflects on both their appropriateness for protection by a spatial measure (i.e. an MCZ), and their appropriateness for such a measure in offshore waters (i.e. beyond 12nm).

This present review does not consider highly mobile species that were previously considered during the development of the MCZ FOCI in the ENG. A separate process is being taken forward in order to determine the appropriateness of spatial protection for highly-mobile species found in the area where Defra can designate MCZs. The outputs of that process will, if required, be reflected in a future revision of Annex B.

1.1. Defra's request for a review of MCZ Features of Conservation Importance

In September 2014, Defra raised the following questions regarding the MCZ Species FOCI list:

A. There are 23 species on the MCZ FOCI list that were included for MCZ protection based on their inclusion on either Section 41 of the NERC Act 2006 (previously UKBAP) or Schedule 5 of the WCA 1981. As these Acts only apply within the 12nm limit, can you confirm those MCZ FOCI that remain suitable for protection within the UK offshore area?

B. Species are listed on Schedule 5 of the WCA 1981 according to specific criteria - can JNCC and Natural England advise what the relevant criteria used to identify MCZ species FOCI were, and what additional protection is required through a MCZ beyond that already provided under the WCA 1981?

In light of the legislative changes outlined above and to answer these questions, the present paper provides a comprehensive review covering both MCZ habitat and species FOCI. The paper is presented in the following way:

- Part I provides an overview of the MCZ FOCI and from which biodiversity lists they were drawn. The text also discusses where changes in legislation mean that features are no longer adequately represented on biodiversity lists. Any such features are considered as to whether they should remain as MCZ FOCI;

- Part II considers the applicability of the MCZ FOCI list to the offshore marine environment (i.e. beyond 12nm) and which features should still be sought for protection within MCZs;

- Part III reviews the MCZ species FOCI list and considers whether the measures provided through the WCA 1981 should be supplemented by a spatial protection measure (i.e. an MCZ);

- Part IV considers whether any changes to the WCA 1981 following Quinqunnenial reviews should result in the addition or removal of features from the MCZ FOCI list. Furthermore, this part reflects on the introduction of the NERC Act 2006 Section 41 list and whether any features should be added to the MCZ FOCI list. Finally, it also considers any other habitats or species that should be added to the MCZ FOCI list where these features have not previously been considered when drafting the ENG.

Following the conclusion of all parts, the revised list of MCZ FOCI is provided in Annex B. This revised list will be used in place of Tables 3 and 4 of the ENG[1] for any future MCZ designations.

2. PART I: Overview of MCZ Features of Conservation Importance

Tables 11 and 12 in Annex 2 of the ENG[1] list all of the habitats and species originally considered as FOCI, and thus merit formal protection by an MCZ. These two lists were drawn from three sources – the UK List of Priority Species and Habitats (UKBAP), the OSPAR List of Threatened and/or Declining Species and Habitats, and the WCA 1981 (Schedules 5 and 8). These features were assessed to determine whether a MCZ was an appropriate conservation measure for their protection (see Annex 2 of the ENG, Tables 13 – 17).

Table 2 lists the habitat and species FOCI that were considered appropriate for protection through an MCZ. These features would also contribute to the representative range of habitats and species found in the UK requiring protection. Additionally Table 2 notes whether the habitat or species is found on one of the previously mentioned lists or schedules, as well as the NERC Act 2006 Section 41 list of habitats and species of principal importance.

Table 2: List of all MCZ Features of Conservation Importance previously determined as suitable for spatial protection measures and whether they are found on lists of protected habitats and/or species

MCZ FOCI (as listed in Table 2 or Table 3 of the ENG)	OSPAR Threatened and/or Declining Species and Habitats[12]	Wildlife & Countryside Act 1981 Schedule 5 and 8 of protected species	UK Biodiversity Action Plan list of priority species and habitats	Natural Environment & Rural Communities Act 2006 Habitats & Species of Principal Importance
Habitat FOCI				
Blue Mussel beds (including intertidal beds on mixed and sandy sediments)	Yes[13]	Not applicable	Yes	Yes
Cold-water coral reefs	Yes	Not applicable	Yes	No
Coral Gardens	Yes	Not applicable	No	No
Deep-sea sponge aggregations	Yes	Not applicable	Yes	No
Estuarine rocky habitats	No	Not applicable	Yes	Yes
File shell beds	No	Not applicable	Yes	No
Fragile sponge & anthozoan communities on subtidal rocky habitats	No	Not applicable	Yes	Yes
Intertidal underboulder communities	No	Not applicable	Yes	Yes[14]
Littoral chalk communities	Yes	Not applicable	Yes	Yes[15]

[12] Note that not all OSPAR Threatened and/or Declining Species and Habitats are threatened or declining in all areas of the OSPAR region
[13] Note that the habitat is only considered Threatened or Declining in the North Sea and Celtic Sea regions
[14] Note that in the Section 41 NERC Act list of habitats and species of principal importance, this habitat is referred to as 'Intertidal boulder communities'
[15] Note that in the Section 41 NERC Act list of habitats and species of principal importance, this habitat is referred to as 'intertidal chalk'

MCZ FOCI (as listed in Table 2 or Table 3 of the ENG)	OSPAR Threatened and/or Declining Species and Habitats[12]	Wildlife & Countryside Act 1981 Schedule 5 and 8 of protected species	UK Biodiversity Action Plan list of priority species and habitats	Natural Environment & Rural Communities Act 2006 Habitats & Species of Principal Importance
Maerl beds	Yes	Not applicable	Yes	Yes
Horse mussel (*Modiolus modiolus*) beds	Yes	Not applicable	Yes	Yes
Mud habitats in deep water	No	Not applicable	Yes	Yes
Sea-pen and burrowing megafauna communities	Yes	Not applicable	Yes	No
Native oyster (*Ostrea edulis*) beds	Yes	Not applicable	No	No
Peat and clay exposures	No	Not applicable	Yes	Yes
Honeycomb worm (*Sabellaria alveolata*) reefs	No	Not applicable	Yes	Yes
Ross worm (*Sabellaria spinulosa*) reefs	Yes	Not applicable	Yes	Yes
Seagrass beds	Yes	Not applicable	Yes	Yes
Sheltered muddy gravels	No	Not applicable	Yes	Yes
Subtidal chalk	No	Not applicable	Yes	Yes
Subtidal sands and gravels	No	Not applicable	Yes	Yes
Tide-swept channels	No	Not applicable	Yes	Yes

MCZ FOCI (as listed in Table 2 or Table 3 of the ENG)	OSPAR Threatened and/or Declining Species and Habitats[12]	Wildlife & Countryside Act 1981 Schedule 5 and 8 of protected species	UK Biodiversity Action Plan list of priority species and habitats	Natural Environment & Rural Communities Act 2006 Habitats & Species of Principal Importance
Species FOCI				
Peacock's tail (*Padina pavonica*)	No	No	Yes	Yes
Burgundy maerl paint weed (*Cruoria cruoriaeformis*)	No	No	Yes	Yes[16]
Grateloup's little-lobed weed (*Grateloupia montagnei*)	No	No	Yes	Yes[17]
Coral maerl (*Lithothamnion corallioides*)	No	No	Yes	Yes
Common maerl (*Phymatolithon calcareum*)	No	No	Yes	Yes
Tentacled lagoon-worm (*Alkmaria romijni*)	No	Yes	No	No
Lagoon sandworm (*Armandia cirrhosa*)	No	Yes	No	Yes
Giant goby (*Gobius cobitis*)	No	Yes	No	No
Couch's goby (*Gobius couchi*)	No	Yes	No	No
Long snouted seahorse (*Hippocampus guttulatus*)	Yes	Yes	Yes	Yes

[16] Referred to as 'A Red Seaweed' rather than 'Burgundy maerl paint weed'
[17] Referred to as 'A Red Seaweed' and under its previous Latin name '*Dermocorynus montagnei*'

MCZ FOCI (as listed in Table 2 or Table 3 of the ENG)	OSPAR Threatened and/or Declining Species and Habitats[12]	Wildlife & Countryside Act 1981 Schedule 5 and 8 of protected species	UK Biodiversity Action Plan list of priority species and habitats	Natural Environment & Rural Communities Act 2006 Habitats & Species of Principal Importance
Short snouted seahorse (*Hippocampus hippocampus*)	Yes	Yes	Yes	Yes
Trembling sea mat (*Victorella pavida*)	No	Yes	Yes	Yes
Sea-fan anemone (*Amphianthus dohrnii*)	No	No	Yes	Yes
Pink sea-fan (*Eunicella verrucosa*)	No	Yes	Yes	Yes
Stalked jellyfish (*Haliclystus auricula*)[18]	No	No	Yes	Yes
Sunset cup coral (*Leptopsammia pruvoti*)	No	No	Yes	Yes
Stalked jellyfish (*Lucernariopsis campanulata*)	No	No	Yes	Yes
Stalked jellyfish (*Lucernariopsis cruxmelitensis*)	No	No	Yes	Yes
Starlet sea anemone (*Nematostella vectensis*)	No	Yes	Yes	Yes
Lagoon sand shrimp (*Gammarus insensibilis*)	No	Yes	Yes	Yes
Amphipod shrimp (*Gitanopsis*	No	No	Yes	No

[18] See Part IV of this paper – *Haliclystus* species included in the MCZ FOCI list due to taxonomic changes

MCZ FOCI (as listed in Table 2 or Table 3 of the ENG)	OSPAR Threatened and/or Declining Species and Habitats[12]	Wildlife & Countryside Act 1981 Schedule 5 and 8 of protected species	UK Biodiversity Action Plan list of priority species and habitats	Natural Environment & Rural Communities Act 2006 Habitats & Species of Principal Importance
***bispinosa*)**				
Gooseneck barnacle (*Pollicipes pollicipes*)	No	No	Yes	Yes
Spiny lobster (*Palinurus elephas*)	No	No[19]	Yes	Yes
Ocean quahog (*Arctica islandica*)	Yes	No	No	No
Fan mussel (*Atrina pectinata*)[20]	No	Yes	Yes	Yes
Defolin`s lagoon snail (*Caecum armoricum*)	No	Yes	Yes	No
Native oyster (*Ostrea edulis*)	Yes	No	Yes	Yes
Sea snail (*Paludinella littorina*)	Yes	No[21]	Yes	No
Lagoon sea slug (*Tenellia adspersa*)	No	Yes	Yes	Yes
Highly-mobile species FOCI				
Smelt (*Osmerus eperlanus*)	No	No[22]	Yes	Yes
European eel (*Anguilla anguilla*)	Yes	No	Yes	Yes

[19] Note that in the 6th Quinquennial review of Schedules 5 and 8 of the Wildlife & Countryside Act 1981, Spiny lobster (*Palinurus elephas*) was recommended as being added to Schedule 5

[20] Note this feature should be referred to as *Atrina fragilis*– more information is provided in Part IV of this report

[21] Note this feature was removed from Schedule 5 of the Wildlife & Countryside Act 1981 following the 5th Quinquennial review

[22] This feature was recommended for addition to Schedule 5 of the Wildlife & Countryside Act 1981 following the 6th Quinquennial review

MCZ FOCI (as listed in Table 2 or Table 3 of the ENG)	OSPAR Threatened and/or Declining Species and Habitats[12]	Wildlife & Countryside Act 1981 Schedule 5 and 8 of protected species	UK Biodiversity Action Plan list of priority species and habitats	Natural Environment & Rural Communities Act 2006 Habitats & Species of Principal Importance
Undulate ray (*Raja undulata*)	No	No[23]	Yes	Yes

[23] Note that in the 5th Quinquennial review of Schedules 5 and 8 of the Wildlife & Countryside Act 1981, Undulate ray (*Raja undulata*) was recommended as being added to Schedule 5 but that this species was not added to the Schedule following review of JNCC's recommendations from Defra and Welsh Government. More information on this decision is available at: http://jncc.defra.gov.uk/pdf/QQR5_wildlife-countryside-act-gov-response110805.pdf

Following the withdrawal of the UKBAP list of priority habitats and species with the implementation of the UK Post-Biodiversity Framework in July 2012[24], there are two features on the MCZ FOCI list that are not listed features on either the NERC Act 2006 Section 41 list, or the WCA 1981 schedules:

- File shell beds;
- Amphipod shrimp (*Gitanopsis bispinosa*).

Given they previously occurred on the UKBAP list but don't occur on the NERC Act 2006 Section 41 list or WCA Act 1981 schedules, it is appropriate to review whether they should remain as MCZ FOCI.

File shell beds

A definition of the habitat can be found on the JNCC website[25]. In UK waters, file shells (also referred to as flame shells) live predominantly on Western coasts with the densest beds found off west Scotland, mainly recorded on coarse sand, gravel and shells. They are found from low water to around 100m depth, often in areas with moderate or strong water currents. Individuals may also live under stones, or in kelp holdfasts. Scottish Natural Heritage's detailed ecological guidance for 'Flame shell beds' states that: "*Recent survey evidence suggests that the beds are found at several lochs along the West coast of Scotland, from Loch Broom in the north to Loch Fyne in the south. Thus the beds have a rather restricted distribution around Scotland. However, it is quite likely that the cryptic appearance of the beds and the potential for them to exist beyond normal dive limits (> 30m) has led to them being under recorded*"[26].

File shell beds are considered scarce in the UK, and therefore the Scottish beds have national importance. There are records of file shells (*Limaria hians*) as individuals across UK waters however the only known occurrences of 'beds' are in Scottish waters. File shell beds are only correlated with one biotope (SS.SMx.IMx.Lim) for which the current known distribution in UK is only shown to occur in Scotland[27]. The ENG noted this restricted distribution but the feature was retained on the MCZ FOCI list since it was possible the feature could occur in the MCZ project area (see footnote under Table 2, pg 32 of ENG). Despite the significant additional data made available to the MCZ programme over recent years, the habitat is still not known to occur within the Defra Secretary of State's waters.

[24] UK Post-2010 Biodiversity Framework. Published by JNCC and Defra on behalf of the Four Countries' Biodiversity Group, July 2012. Available at: http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf
[25] UK Biodiversity Action Plan; Priority Habitat Descriptions. BRIG (ed. Ant Maddock) 2008 (Updated December 2011). Available at: http://jncc.defra.gov.uk/PDF/UKBAP_PriorityHabitatDesc-Rev2011.pdf
[26] Scottish Natural Heritage, Detailed ecological guidance on flame shell beds. Available at: http://www.snh.gov.uk/docs/A1209985.pdf
[27] *Limaria hans* beds in tide-swept sublittoral muddy mixed sediment. Information available at: http://jncc.defra.gov.uk/marine/biotopes/biotope.aspx?biotope=JNCCMNCR00001221

Consequently file shell beds is not considered representative of the range of features present in Secretary of State waters and therefore should not currently be considered as an MCZ FOCI. JNCC & Natural England have removed the feature file shell beds from the MCZ FOCI list.

Amphipod shrimp (*Gitanopsis bispinosa*)

Very little is known about this tiny shrimp, which is found on the seabed at depths of 100-200m. It grows to about 0.5cm long, and is similar in appearance to the common sandhopper (*Talitrus saltator*). Records of the Amphipod shrimp (*Gitanopsis bispinosa*) in UK waters are shown in Figure 1 below.

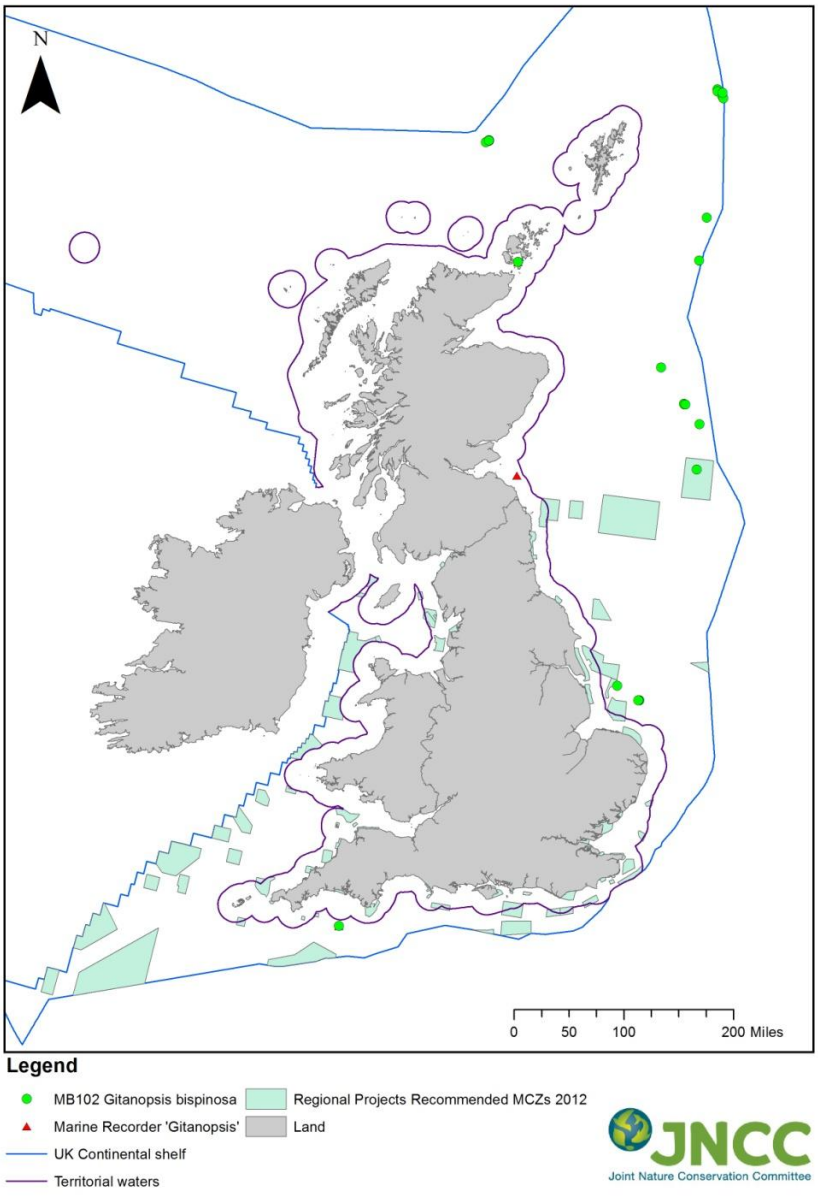

Figure 1: Map of data records of Amphipod shrimp (*Gitanopsis bispinosa*) in the UK alongside recommended Marine Conservation Zones

Outside of UK waters, the range of the Amphipod shrimp (*Gitanopsis bispinosa*) extends between Norway and Greenland[28]. Figure 1 shows that there are limited records of the species occurring either within existing rMCZs or generally in UK waters. Given that the species does occur within UK waters and there are some data that indicate its presence in the Defra marine area, JNCC and Natural England have retained the species on the MCZ FOCI list as it is still considered an important and rare species. While it remains an MCZ FOCI, JNCC and Natural England believe that there are likely to be insufficient data to identify a site to progress to designation for this feature within Secretary of State waters at the present time (January 2016).

[28] UK Priority Species data collation *Gitanopsis bispinosa*, Version 2 updated on 15th December 2010. Available at: http://jncc.defra.gov.uk/_speciespages/2291.pdf

3. PART II: MCZ FOCI in the offshore marine environment

The NERC Act 2006 and the WCA 1981 only make provision for species protection measures in territorial waters (within 12nm of the UK baseline). However, the UK's commitment to the OSPAR Convention to implement the appropriate measures for the OSPAR List of Threatened and/or Declining (T&D) Species and Habitats applies to the whole UK Marine Area; the OSPAR T&D list covers the entire wider OSPAR area. At the time of publishing the ENG, the protection of the UK List of Priority Species and Habitats (UKBAP) was also applicable in offshore waters. However, the supporting policies have changed with the result that the UKBAP process no longer applies offshore in England and Wales (UKBAP is now replaced by Section 41 of the NERC Act 2006 in England and Wales, and an associated England Biodiversity Strategy[29]). JNCC assume that those habitats and species on the OSPAR T&D list remain appropriate for offshore spatial protection where they occur offshore (see Annex A for further clarity). However, it is appropriate to review those MCZ FOCI absent from the OSPAR list but listed on either the NERC Act 2006 Section 41 list or WCA 1981 Schedules to ascertain whether they should be considered for protection in offshore waters. Table 3 lists those MCZ FOCI that are not on the OSPAR List of T&D Species and Habitats and reviews their suitability for site protection in offshore waters.

[29] Biodiversity 2020: A strategy for England's wildlife and ecosystem services. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf

Table 3: Assessment of whether MCZ FOCI not listed as an OSPAR Threatened and/or Declining Habitats and Species should be search features offshore

MCZ Feature of Conservation Importance	Present in the offshore marine environment (i.e. beyond 12nm)?	Appropriate as a search feature for offshore MCZs?	Rationale
MCZ Habitat FOCI			
Estuarine rocky habitats	No	No	Not found outside of estuarine environments
Fragile sponge & anthozoan communities on subtidal rocky habitats	Yes	Yes	Communities associated with this habitat are found on bedrock reefs, including in offshore waters
Intertidal under-boulder communities	No	No	Not found outside of the intertidal zone
Mud habitats in deep water	Yes	No	The original UK BAP definition of Mud Habitats in deep water pre-dates the current definition of the broad-scale habitat Subtidal mud and the OSPAR Rare & Threatened list of habitats. The definition of Mud habitats in deep water is largely synonymous with Subtidal mud and includes aspects of the OSPAR habitat Sea-pen and burrowing megafauna communities (also an MCZ FOCI). Subtidal mud below 20-30m in the UK marine environment equates to the definition of the FOCI Mud habitats in deep water. Contemporary data for deeper mud habitats have revealed some more unusual communities and it would be more appropriate to review these data and where appropriate, define new FOCI in due course. The present definition of Mud habitats of deep water is too generic and does not fit with the ethos of a FOCI. It

MCZ Feature of Conservation Importance	Present in the offshore marine environment (i.e. beyond 12nm)?	Appropriate as a search feature for offshore MCZs?	Rationale
			therefore is dropped as a feature of the MCZ process.. See Part IV for a more detailed explanation.
Peat and clay exposures	Yes	Yes	Little is known about Peat and clay exposures in the subtidal environment and how deep the habitat exists. There is anecdotal evidence to suggest the habitat may exist beyond 12nm. It therefore is appropriate for this habitat to be considered for offshore protection where data exist to indicate its presence.
Honeycomb worm (*Sabellaria alveolata*) reefs	No	No	In the UK, found predominately on shores with strong to moderate wave action, with limited records in the subtidal area. It is not considered as a feature of conservation importance in offshore waters
Sheltered muddy gravels	No	No	Occurs principally in estuaries, rias and sea lochs and is not found in offshore waters
Subtidal chalk	Yes	Yes	The most extensive areas of Subtidal chalk in UK occur in Kent and Sussex. Other areas occur inshore around Flamborough Head, Isle of Wight and Studland. While most biotopes associated with this habitat are associated with inshore communities, it is technically possible for this habitat to occur offshore. It therefore is appropriate for this habitat to be considered for offshore protection where appropriate data exist to indicate its presence
Subtidal sands and gravels	Yes	No	Directly correlates with broad-scale habitats Subtidal coarse sediment and Subtidal sand, both of which are found extensively beyond 12nm. However as this feature has been removed from the MCZ FOCI list it is not considered an appropriate search feature for MCZs (see Introduction)
Tide-swept channels	No	No	Found in high-tidal energy environments, where tidal water flow is constricted by physiographic features. Generally associated with rias, fjords, straits and islands and thus not

MCZ Feature of Conservation Importance	Present in the offshore marine environment (i.e. beyond 12nm)?	Appropriate as a search feature for offshore MCZs?	Rationale
			likely to be found offshore
Species FOCI			
Peacock's tail (Padina pavonica)	No	No	Found only in rock pools in the mid to lower rocky shore
Burgundy maerl paint weed (Cruoria cruoriaeformis)	No	No	Usually found on maerl beds which predominantly occur inshore in the infralittoral zone
Grateloup's little-lobed weed (Grateloupia montagnei)	No	No	Found only on small mobile stones and pebbles in shallow waters in coastal environments
Coral maerl (Lithothamnion corallioides)	No	No	Usually found on maerl beds which predominantly occur inshore in the infralittoral zone
Common maerl (Phymatolithon calcareum)	No	No	Usually found on maerl beds which predominantly occur inshore in the infralittoral zone
Tentacled lagoon-worm (Alkmaria romijni)	No	No	Found in sheltered estuaries or lagoons
Lagoon sandworm (Armandia cirrhosa)	No	No	Found in sheltered estuaries or lagoons
Giant goby (Gobius cobitis)	No	No	Found only in rock pools
Couch's goby (Gobius couchi)	No	No	Found in the lower shore or shallow water
Trembling sea mat (Victorella pavida)	No	No	Found in coastal lagoons or estuaries
Sea-fan anemone (Amphianthus dohrnii)	Yes	Yes	Found at a depth range of 10 – 1000m so it is possible for the Sea-fan anemone (*Amphianthus dohrnii*) to occur offshore. However the pink sea-fan (*Eunicella verrucosa*) on which it

MCZ Feature of Conservation Importance	Present in the offshore marine environment (i.e. beyond 12nm)?	Appropriate as a search feature for offshore MCZs?	Rationale
			typically resides (in England), is not known to occur offshore and the only other UK sea-fan which it may occur on is the Northern sea-fan (*Swiftia pallida*) but that is only known to occur in Scottish waters. The Sea-fan anemone (*Amphianthus dohrnii*) may also occur on hydroids (i.e. the Oaten pipes hydroid (*Tubularia indivisa*)) which occur within the offshore area. Therefore it is appropriate for Sea-fan anemone (*Amphianthus dohrnii*) to be considered for protection through an offshore MCZ
Pink sea-fan (Eunicella verrucosa)	Yes	Yes	Existing records in UK are predominantly inshore and, while it is possible for the species to occur offshore, there is limited evidence to support any such occurrence in UK waters at the present time. Therefore the species should be retained as a search feature for offshore MCZs but further evidence is needed to support a significant presence offshore
Stalked jellyfish (Haliclystus* species[30]*)	No	No	Prefer shallow waters, usually attached to seagrass or seaweeds and thus unlikely to be found offshore
Sunset cup coral (Leptopsammia pruvoti)	No	No	Found at open coast locations mainly facing away from prevailing winds. It is commonest between 10m and 30m and is not known to occur offshore
Stalked jellyfish (Lucernariopsis campanulata)	No	No	Usually found in the intertidal or infralittoral zones, commonly attached to seagrass or seaweeds
Stalked jellyfish (Lucernariopsis cruxmelitensis)	No	No	Usually found in the intertidal or infralittoral zones, commonly attached to seagrass or seaweeds
Starlet sea anemone (Nematostella vectensis)	No	No	Lives in brackish lagoons at or above high water tide mark

[30] This feature was previously known as Stalked jellyfish (*Haliclystus auricula*) but, owing to taxonomic uncertainty over records involving a similar species has been changed to Stalked jellyfish (*Haliclystus* species) and is discussed in Section 5.3 in Part IV.

MCZ Feature of Conservation Importance	Present in the offshore marine environment (i.e. beyond 12nm)?	Appropriate as a search feature for offshore MCZs?	Rationale
Lagoon sand shrimp (Gammarus insensibilis)	No	No	Found only in coastal lagoons that form high up on beaches
Amphipod shrimp (Gitanopsis bispinosa)	Yes	Yes	Known to occur offshore, however limited data exist
Gooseneck barnacle (Pollicipes pollicipes)	No	No	Live on rocky shores only
Spiny lobster (Palinurus elephas)	Yes	Yes	Found offshore amongst bedrock and boulders
Fan mussel (Atrina fragilis)[20]	Yes	Yes	Found on soft seabed across all depth ranges of UK waters. There are recent records showing the presence of the fan mussel (*Atrina fragilis*) in the offshore area
Defolin`s lagoon snail (Caecum armoricum)	No	No	Only found in coastal areas
Lagoon sea slug (Tenellia adspersa)	No	No	Lives in shallow water and mainly found in lagoons on the shore
Highly-mobile species FOCI			
Smelt (Osmerus eperlanus)	Yes	No	There are no data or scientific evidence to suggest that Smelt (*Osmerus eperlanus*) have any particular ecological requirements for any areas beyond estuarine and coastal waters. The essential part of its life is spent in the estuarine zone, with just short incursions in the littoral zone[31]. Therefore JNCC views records of Smelt (*Osmerus eperlanus*) being present within an offshore site as vagrant individuals passing through the area, with no evidence to suggest any element of their life cycle is dependent on the offshore region, nor any

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

MCZ Feature of Conservation Importance	Present in the offshore marine environment (i.e. beyond 12nm)?	Appropriate as a search feature for offshore MCZs?	Rationale
			particular area offshore. For more information please consult JNCC's Scientific advice on possible offshore MCZs considered for consultation in 2015[32]
Undulate ray (Raja undulata)	Yes	Yes	Data show that the species occurs in offshore areas and may show fidelity to areas in the English Channel. At the present time, these data only show repeated presence of the species and do not provide evidence of the reason why individuals show fidelity to particular areas. Current JNCC advice is that Undulate ray should not go forward for designation within offshore MCZs until data are available demonstrating site fidelity in the English Channel, together with an understanding of the reason why individuals aggregate such that appropriate management may be implemented. Although these data are not currently available, they may become so in the future and therefore this species should remain under consideration for offshore protection.

[32] Scientific advice on possible offshore MCZs considered for consultation in 2015, JNCC, June 2014. Available at: http://jncc.defra.gov.uk/page-6658

4. PART III: Review of whether spatial measures are additionally required for MCZ species FOCI protected under the Wildlife & Countryside Act 1981

As demonstrated in Part I, a number of the MCZ species FOCI were derived from the Schedules to the Wildlife & Countryside Act (WCA) 1981. Being on these schedules requires a number of measures are placed upon these species in order to contribute to their protection. The aims of this present section are to:

a) Review the MCZ species FOCI that are also on the WCA 1981 Schedules;
b) Examine the protection available to the species under the WCA 1981, and;
c) Assess whether a spatial protection measure (i.e. an MCZ) would help to ensure the protection of that species beyond the measures already provided for the species through the WCA.

Note that the possible question of whether additional site based protection is required for species of principal importance from Section 41 of the NERC Act 2006 is not considered here as relatively limited additional legal protection is derived through being on this list. The list of species of principal importance requires the Secretary of State to take reasonably practicable steps to further the conservation of species on the list, and promote the taking of such steps by others. The list should guide public bodies in implementing their wider biodiversity duty as set in Section 40 of the NERC Act 2006[33], which states that public authorities must have regard to the purpose of conserving biodiversity.

Through Schedule 5 of the WCA 1981 certain non-avian animals are protected from killing, injury, uprooting, collection and trade, as well as damage or obstruction to any structure or place which any such non-avian animal may use for shelter or protection. Such measures do not necessarily apply to all non-avian animals on the schedule – protection of certain species is limited to different aspects of the legislation i.e. only Schedule 9(4)(a) applies to many marine species in order to protect their structure or place used for shelter or protection. It should be noted that whilst the legislation is clear for the most part, there is considerable scope for interpretation of the meaning of what might be meant by a structure or place used for shelter or protection. One extreme interpretation might consider only nests,

[33] Section 40(1) of the Natural Environment and Rural Communities Act 2006: "*Every public authority must, in the exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity*."

dreys or burrows *etc* as places of shelter or protection. On the other hand, it is more reasonable to consider that an animal's habitat, essential to it as a place of shelter or protection, is - or ought to be - the subject of protection, especially where the species involved is extremely rare, threatened or restricted to a very small number of locations.

The phrase 'place of shelter or protection', has long caused difficulties and as a consequence, some of the species currently listed on Schedule 5 are listed only to enable their habitat to be protected (for example the Short snouted seahorse (*Hippocampus Hippocampus*). There is provision under the WCA 1981 that allows Sites of Special Scientific Interest (SSSI) to be selected and notified as spatial measures to protect species whose habitat is under threat, irrespective of how restricted or extensive it may be, or whether it is used exclusively as a "place of shelter or protection" or not, or whether the species is threatened or a typical component of that habitat. The benefits of providing spatial protection to help conserve species listed on Schedule 5 of the WCA 1981 is recognised as SSSIs have been notified to include listed species; a number of these SSSIs were notified to provide spatial protection for marine Schedule 5 species, notably those associated with saline lagoons. For marine species whose place of shelter in the subtidal area is considered to require protection, then in the same way that SSSIs may be notified on land and at the coast, MCZs could provide benefit by protecting their habitat at sea. It is also important to remember that Section 9(4) of the WCA 1981, i.e. the section relating to a species' shelter, does not apply to all Schedule 5 marine species and so for a few species, the habitat is not protected and as a result other spatial measures would then be necessary.

Spatial measures such as MCZs may also enable more effective direct species conservation, in addition to the protection of supporting habitats. Whilst inclusion in Schedule 5 may offer a degree of protection when activities or works are carried out, especially under licence, additional spatial measures, such as MCZs, provide a more proactive approach to protection. Such measures may be of particular benefit for species in the marine environment where they are difficult to observe. If a species is listed under Schedule 5 it is protected from intentional or reckless damage and disturbance. It may be that if a species is damaged but the person is unaware of its presence then no offence has occurred. The designation of a Schedule 5 species in an MCZ will provide a mechanism to increase awareness of its occurrence and it is therefore less likely to be damaged or disturbed unintentionally.

Designation will also result in the provision of site and species specific conservation and management advice for the full range of activities, licensed and unlicensed, that may have

an impact. This approach will help the full range of site users to understand their potential impacts on a species and assist them to adopt mitigation measures.

JNCC and Natural England therefore conclude that those MCZ species FOCI that are additionally on Schedule 5 of the WCA 1981, should continue to be search features of an appropriate spatial measure e.g. an MCZ, due to the benefits such a measure will provide to the protection of the species.

5. PART IV: Additional considerations for MCZ FOCI list

5.1. Wildlife & Countryside Act 1981 – changes to Schedules 5 and 8 following the 5th and 6th Quinquennial review

Under Section 24 of the Wildlife & Countryside Act (WCA) 1981, the Nature Conservancy Council (NCC) was required, five years after the passing of the Act in 1981, and every five years thereafter, to review Schedules 5 and 8 and advise the Secretary of State whether in its opinion any animal or plant should be added to or removed from the Schedules. The NCC was also empowered to make such recommendations at any time, outside the constraints of the five-yearly reviews. Recommendations were to be accompanied by a statement of the reasons which led to the advice. Under Section 133 of the Environmental Protection Act, 1990 (which was superseded by Section 36 of the NERC Act 2006) the JNCC assumed responsibility for discharging these functions.

Since the ENG was published in 2011, there has been one quinquennial review of Schedules 5 and 8 of the WCA 1981 in 2014. However the previous review in 2008, took place during the development of the ENG and the review's final recommendations were not able to be fully incorporated. These two reviews have both recommended the inclusion and/or removal of marine species to the Schedules. These changes are not reflected within the current ENG FOCI list for which MCZs are appropriate to act as a protection mechanism. This present section reviews the amendment to the marine species in Schedules 5 and 8 and considers whether these species should be included or removed from the MCZ FOCI list.

Fifth Quinquennial review – December 2008

Two marine species were added to Schedule 5 of the WCA 1981 following the fifth quinquennial review of the WCA 1981 Schedules 5 and 8[34]:

- Angel shark (*Squatina squatina*);
- White skate (*Rostroraja alba*);

Both of these marine species were considered within the development of the MCZ FOCI list – see Tables 12-17 and at the time were not considered appropriate for protection through a

[34] Fifth Quinquennial Review of Schedules 5 and 8 of the Wildlife and Countryside Act, 1981: Report and Recommendations from the Joint Nature Conservation Committee, December 2008. Available at: http://jncc.defra.gov.uk/PDF/5qr.pdf and the Government's response is available at: http://jncc.defra.gov.uk/pdf/wildlife-countryside-act-gov-response110805.pdf

spatial measure (i.e. an MCZ). These species are not considered further within this paper as they are subject to a separate process described in the introduction.

One marine species was recommended for removal from Schedule 5 of the WCA 1981 - the lagoon or sea snail (*Paludinella littorina*). This animal was subsequently removed from the MCZ FOCI list as previously explained in the introduction.

Sixth Quinquennial review – March 2014

Two marine species were recommended to be added to Schedule 5 of the WCA 1981 as part of the sixth quinquennial review of the WCA 1981 Schedules 5 and 8[35]. These were as follows:

- Sparling / smelt (*Osmerus eperlanus*)
- Spiny lobster (*Palinurus elephas*)

No decision has been made yet as to whether they should be added to Schedule 5. Both marine species were considered within the development of the MCZ FOCI list – see Tables 12-17 – both of these species are already on the list of MCZ FOCI as they are considered appropriate for spatial protection.

No marine species were recommended for removal from Schedule 5 of the WCA 1981 in 2014.

5.2. Natural Environment and Rural Communities (NERC) Act 2006 Schedule 41

Subsequent to the development of the ENG and the MCZ FOCI list, Section 41 of the NERC Act 2006[36] and the list of habitats and species of Principal Importance (last updated in August 2010)[37] has replaced the UKBAP list. While the NERC Act 2006 Section 41 list was available at the time the ENG was being written, the list of species of Principal Importance was being updated and therefore was not used to inform the MCZ FOCI list. The Section 41

[35] Sixth Quinquennial Review of Schedules 5 and 8 of the Wildlife and Countryside Act, 1981: Report and Recommendations from the Joint Nature Conservation Committee, March 2014.
[36] Natural Environment and Rural Communities Act 2006. Available at: http://www.legislation.gov.uk/ukpga/2006/16/contents
[37] Habitats and Species of principal Importance in England. Available at: http://webarchive.nationalarchives.gov.uk/20140605090108/http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspxx

list was not published until August 2010 after the ENG was finalised (in late 2009 / early 2010). Furthermore the UKBAP was still an appropriate list to use to inform habitat and species on the MCZ FOCI list in 2010 as it was not formally withdrawn until July 2012 when the UK Post-2010 Biodiversity Framework was published[38].

Now that the NERC Act 2006 Section 41 list is fully implemented, it is necessary to consider whether any marine habitats and species on that list should be added to the MCZ FOCI list. Table 4 below reviews those habitats and species that have not previously been considered in the ENG – see Tables 12-17 of the ENG for a list of those habitats and species that were considered.

Table 4: Coastal and/or marine habitats and species of principal importance not listed by the Ecological Network Guidance

Coastal and/or marine habitats and species of principal importance	Should the feature be added to the MCZ FOCI list?
Habitats	
Coastal sand dunes	No – it should be protected through existing mechanisms (SSSIs, SACs) since the feature occurs predominantly above mean high water
Coastal vegetated shingle	No – it should be protected through existing mechanisms (SSSIs, SACs) since the feature occur predominantly above mean high water
Maritime cliff and slopes	No – it should be protected through existing mechanisms (SSSIs, SACs) since the feature occurs predominantly above mean high water
Species	
Sea Trout (*Salmo trutta*)	Maybe - Sea Trout (*Salmon trutta*) are anadromous and may spend a significant amount of time at sea feeding before returning to their natal river to spawn. Of course this means the Sea Trout (*Salmo trutta*) is highly-mobile and therefore may not be suitable for spatial protection. Further analysis of the scientific literature is required before a conclusion can be drawn over whether to include this species or not as an MCZ FOCI. This is outside the scope of this review and being considered in separate work on highly mobile species.
Arctic Char (*Salvelinus alpines*)	No – While this species is anadromous, it is now

[38] JNCC, UK Post-2010 Biodiversity Framework, July 2012. Available at: http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf

	understood that it primarily resides in freshwater habitats and as such would be unlikely to benefit from an MCZ designation
Stoneworts	No – There are 10 species of stonewort on the NERC Act Section 41 list, some of which can occur in brackish environments, notably the Foxtail stonewort (*Lamprothamnium papulosum*) which occurs in a number of saline lagoons, including the Fleet in Dorset. Although some of these species may be found in brackish environments, they are either in shallow sheltered coastal or freshwater habitats and as such other spatial protection measures, such as SSSIs, are likely to offer more appropriate protection.

5.3. Further changes to the MCZ FOCI list

European eel *(Anguilla anguilla)*

European eel (*Anguilla anguilla*) is an OSPAR T&D species. It was considered within the ENG as a highly-mobile species that was appropriate for protection through a spatial measure and was therefore added to the MCZ FOCI list. However since the ENG was published in June 2010, Defra, JNCC and Natural England (following wider discussion with the Environment Agency and Cefas) have concluded this species should be removed from the MCZ FOCI list whilst still recognising the need for wider conservation measures. The European eel (*Anguilla anguilla*) displays a lack of site fidelity and it was considered that MCZs would be unlikely to provide any additional population protection over and above those conservation mechanisms available through The Eels (England and Wales) Regulations 2009[39] and Eel Management Plans for the UK[40]. It is removed from the MCZ FOCI list.

Fan mussel *(Atrina fragilis)*

The ENG, incorrectly listed this species as *Atrina pectinata* rather than *Atrina fragilis*. *Atrina pectinata* refers to an Indo-Pacific species and has long been incorrectly used when identifying the European variety of fan mussel i.e. *Atrina fragilis*. The MCZ FOCI list now correctly refers to Fan mussel as *Atrina fragilis.*

Stalked jellyfish *(Haliclystus species)*

Haliclystus auricula (Rathke 1806) is an MCZ species FOCI due to its inclusion in the UKBAP and subsequent NERC S41 list of species of Principal Importance. However a

[39] The Eels (England and Wales) Regulations 2009. Available at: http://www.legislation.gov.uk/uksi/2009/3344/made

[40] Eel Management Plans for the United Kingdom: Overview for England and Wales. Defra, March 2010. Available at: http://archive.defra.gov.uk/foodfarm/fisheries/documents/fisheries/emp/overview.pdf

congeneric species, *Haliclystus octoradiatus* may also warrant inclusion on the MCZ species FOCI list. The two species *H. auricula and H. octoradiatus* were differentiated in the 1800s but appear to have been synonymised into one species and recorded under the name *H. auricula* throughout the 1900s, until about 1997 when they were re-separated as two distinct species[41]. Both are listed as accepted on the World Register of Marine Species from at least 2004 onwards.

The UKBAP list (on which the inclusion *H. auricula* as an MCZ FOCI is based) was drawn up between 1995 and 1999, possibly before *H. auricula* was widely recognised to include two distinct species. This re-separation was not widely reported and understood as the stalked jellyfish group have been little studied and the first 'new' records of *H. octoradiatus* date from around 2011, many years after re-classification. Therefore *H. octoradiatus* would not have been considered separately for inclusion on the UKBAP list. Older records may be considered to include the new species 'by proxy' as the *H. auricula* name would have included both *H. auricula* and *H. octoradiatus*. This suggestion is supported by the fact that the 2010 UKBAP Priority Species update based its population and decline estimates on data from Corbin in the 1970's, when the two species were synonymised, and which makes no mention of the re-classification of the species[42]. If this is the case we consider the UKBAP list and subsequent NERC Act 2006 Section 41 list and MCZ FOCI list to be now out of date as it does not recognise the two species.

JNCC and Natural England recommended that, in order to include *H. octoradiatus* on the MCZ FOCI list, the two species are combined under the generic label *Haliclystus* spp. This allows for the fact that the causes of the decline in population that led to the inclusion of *H. auricula* on the lists are likely to also be relevant for *H. octoradiatus* as combined data for both species were used. This proposal also takes into account likely misidentification of recent records owing to the previous situation of a single species.

It should be noted that a third species, *Haliclystus salpinx*, has been recorded in the UK. However, there is only one confirmed record in National Biodiversity Network from John O'Groats, Scotland and it is not known to occur in waters around England and Wales.

[41] For further information on classification and identification of Haliclystus spp. see Hirano, Y. M. (1997). Review of a supposedly circumboreal species of stauromedusa, *Haliclystus auricula* (Rathke, 1806). Proceedings of the 6th International Conference on Coelenterate Biology, 1995: 247-252., and
Kahn, A. S., Matsumoto, G. I., Hirano, Y. M and Collins, A. G. (2010). *Haliclystus californiensis*, a "new" species of stauromedusa (Cnidaria: Staurozoa) from the northeast Pacific, with a key to the species of *Haliclystus.* *Zootaxa* 2518: 49–59.
[42] JNCC, 2010. UK Priority Species pages Haliclystus auricula version 2. Available at: http://jncc.defra.gov.uk/_speciespages/2307.pdf

Determining *Haliclystus* spp. from other stalked jellyfish species is relatively straightforward and can often be undertaken in situ without disturbing the animal. Distinguishing between *H. auricula and H. octoradiatus* is more complex, requires expert knowledge and may not always be possible in the field, especially for juveniles. We would not want to encourage the removal of the animals for identification purposes if it can be avoided. Furthermore, there may be no way to review historic records more precisely to determine which species was actually present. JNCC and Natural England recommended that Defra accept the generic term *Haliclystus* spp. as a valid designated feature in MCZs, rather than specify individual species. Such an approach would also include any new records of *H. salpinx* that may be recorded in English inshore MCZs. Were *H. salpinx* to be found in England, it may warrant inclusion as an MCZ FOCI due to its limited known distribution. Defra accepted this recommendation and subsequent designations will follow this approach. The MCZ FOCI list has been adjusted accordingly.

Mud habitats in deep water

The MCZ FOCI *Mud habitats in deep water* was a UK BAP Habitat (now Section 41 NERC Act Habitat of Principal Importance) that was first defined in the 1990's before the EUNIS classification was completed. It was originally intended to highlight those parts of the EUNIS Level 3 habitat *Sublittoral mud* with particular notable communities that are uncommon in the generally shallow inshore environment. In addition, those communities were not included within the EU Habitats & Species Directive and thus would not be afforded direct protection within SACs. Subsequently, the EUNIS Level 3 habitat *Sublittoral mud* provides an equivalent broad habitat description to include the range of more detailed mud biotopes found across the UK marine area. Furthermore, the OSPAR process to identify rare and threatened habitats included the mud habitat *Sea-pen and burrowing megafauna communities* that was one of the communities mentioned in the original UK BAP definition of *Mud habitats in deep water.* The current definition for *Mud habitats in deep water* is largely synonymous with the broad-scale habitat *Subtidal mud* in areas away from the coast, particularly in the characteristically deeper offshore environment; it also includes the FOCI *Sea-pen and burrowing megafauna communities*. JNCC and Natural England therefore advise Defra that *Mud habitats in deep water*, as currently defined, should no longer be considered an MCZ FOCI as, below a 20m depth range, it shares the same extent as the broad-scale habitat Subtidal mud. It therefore does not help ensure the protection of threatened, rare or declining muddy communities for which MCZ FOCI were intended to deliver. Mud Habitats in Deep Water is no longer being considered as an MCZ FOCI by Defra.

JNCC and Natural England however emphasise the importance of ensuring that the range of different types of subtidal mud communities are appropriately represented within the wider MPA network, particularly those more unusual communities present in deep water that are not currently covered within the definition of the MCZ FOCI Sea-pen and burrowing megafauna communities (which seeks to protect only some of the range of Subtidal mud communities in UK waters). It is important that sufficient representative examples of *Subtidal mud* are designated to provide protection for the range of mud communities present in the UK marine area.

Annex A – Full original list of MCZ Features of Conservation Importance highlighting revisions made since publishing in the Ecological Network Guidance and indicating where the feature is considered for inshore and/or offshore MCZ protection

Bold italics indicate change to MCZ FOCI list as presented in Tables 3 and 4 of the ENG, ~~strikethrough~~ indicates the removal of a habitat/species from the MCZ FOCI list, N/A indicates the feature does not occur in that area, 'Potentially' indicates where there are limited sightings but no significant presence recorded to date and 'To be confirmed' indicates whether further work is required to determine whether a feature should be on the MCZ FOCI list.

MCZ Feature of Conservation Importance	Inshore	Offshore
Habitat FOCI		
Blue Mussel beds (including intertidal beds on mixed and sandy sediments)	Yes	***N/A***[43]
Cold-water coral reefs	Yes	Yes
Coral Gardens	Yes	Yes
Deep-sea sponge aggregations	Yes	Yes
Estuarine rocky habitats	Yes	***N/A***
~~***File shell beds***~~	~~***No***~~	~~***No***~~
Fragile sponge & anthozoan communities on subtidal rocky habitats	Yes	Yes
Intertidal underboulder communities	Yes	***N/A***
Littoral chalk communities	Yes	***N/A***
Maerl beds	Yes	***N/A***[44]

[43] This habitat is an OSPAR Threatened and Declining habitat but it is not found offshore

MCZ Feature of Conservation Importance	Inshore	Offshore
Habitat FOCI		
Horse mussel *(Modiolus modiolus*) beds	Yes	Yes
~~***Mud habitats in deep water***~~	~~***No***~~	~~***No***~~
Sea-pen and burrowing megafauna communities	Yes	Yes
Native oyster (*Ostrea edulis*) beds	Yes	Yes
Peat and clay exposures	Yes	Yes
Honeycomb worm (*Sabellaria alveolata*) reefs	Yes	***N/A***
Ross worm (*Sabellaria spinulosa*) reefs	Yes	Yes
Seagrass beds	Yes	***N/A***[45]
Sheltered muddy gravels	Yes	***N/A***
Subtidal chalk	Yes	Potentially[46]
~~***Subtidal sands and gravels***~~	~~***No***~~	~~***No***~~
Tide-swept channels	Yes	~~***No***~~
Species FOCI		

[44] This habitat is an OSPAR Threatened and Declining habitat but it is not found offshore
[45] This habitat is an OSPAR Threatened and Declining habitat but it is not found offshore
[46] There is no evidence of a significant presence offshore other than rare recorded sightings beyond 12nm

MCZ Feature of Conservation Importance	Inshore	Offshore
Habitat FOCI		
Peacock's tail (*Padina pavonica*)	Yes	~~***No***~~
Burgundy maerl paint weed (*Cruoria cruoriaeformis*)	Yes	~~***No***~~
Grateloup's little-lobed weed (*Grateloupia montagnei*)	Yes	~~***No***~~
Coral maerl (*Lithothamnion corallioides*)	Yes	~~***No***~~
Common maerl (*Phymatolithon calcareum*)	Yes	~~***No***~~
Tentacled lagoon-worm (*Alkmaria romijni*)	Yes	~~***No***~~
Lagoon sandworm (*Armandia cirrhosa*)	Yes	~~***No***~~
Giant goby (*Gobius cobitis*)	Yes	~~***No***~~
Couch's goby (*Gobius couchi*)	Yes	~~***No***~~
Long snouted seahorse (*Hippocampus guttulatus*)	Yes	Yes
Short snouted seahorse (*Hippocampus hippocampus*)	Yes	Yes
Trembling sea mat (*Victorella pavida*)	Yes	~~***No***~~
Sea-fan anemone (*Amphianthus dohrnii*)	Yes	Yes
Pink sea-fan (*Eunicella verrucosa*)	Yes	Potentially[47]

[47] There is no evidence of a significant presence offshore other than rare recorded sightings beyond 12nm

MCZ Feature of Conservation Importance	Inshore	Offshore
Habitat FOCI		
Stalked jellyfish (*Haliclystus* species)[48]	***Yes***	***~~No~~***
Sunset cup coral (*Leptopsammia pruvoti*)	Yes	***~~No~~***
Stalked jellyfish (*Lucernariopsis campanulata*)	Yes	***~~No~~***
Stalked jellyfish (*Lucernariopsis cruxmelitensis*)	Yes	***~~No~~***
Starlet sea anemone (*Nematostella vectensis*)	Yes	***~~No~~***
Lagoon sand shrimp (*Gammarus insensibilis*)	Yes	***~~No~~***
Amphipod shrimp (*Gitanopsis bispinosa*)	Yes	Yes
Gooseneck barnacle (*Pollicipes pollicipes*)	Yes	***~~No~~***
Spiny lobster (*Palinurus elephas*)	Yes	Yes
Ocean quahog (*Arctica islandica*)	Yes	Yes
Fan mussel (*Atrina fragilis*)	Yes	Yes
Defolin`s lagoon snail (*Caecum armoricum*)	Yes	***~~No~~***
Native oyster (*Ostrea edulis*)	Yes	Yes
~~Sea snail (*Paludinella littorina*)~~	***~~No~~***	***~~No~~***

[48] See Part IV of this paper – additional species recommended for inclusion in the MCZ FOCI list due to taxonomic changes

MCZ Feature of Conservation Importance	Inshore	Offshore
Habitat FOCI		
Lagoon sea slug (*Tenellia adspersa*)	Yes	~~***No***~~
Highly-mobile species FOCI		
Smelt (*Osmerus eperlanus*)	Yes	~~***No***~~
European eel (*Anguilla anguilla*)	~~*No*~~	~~***No***~~
Undulate ray (*Raja undulata*)	Yes	Potentially[49]
Sea Trout (Salmo trutta)	To be confirmed[50]	~~***No***~~

[49] Refer to Table 3 for more information
[50] Subject to a separate review process explained in the introduction

Annex B – Revised list of MCZ Features of Conservation Importance

Habitat Features of Conservation Importance
Blue Mussel beds (including intertidal beds on mixed and sandy sediments)
Cold-water coral reefs
Coral Gardens
Deep-sea sponge aggregations
Estuarine rocky habitats
Fragile sponge & anthozoan communities on subtidal rocky habitats
Intertidal underboulder communities
Littoral chalk communities
Maerl beds
Horse mussel *(Modiolus modiolus*) beds
Sea-pen and burrowing megafauna communities
Native oyster (*Ostrea edulis*) beds
Peat and clay exposures
Honeycomb worm (*Sabellaria alveolata*) reefs
Ross worm (*Sabellaria spinulosa*) reefs
Seagrass beds
Sheltered muddy gravels
Subtidal chalk
Tide-swept channels

Species Features of Conservation Importance
Peacock's tail (*Padina pavonica*)
Burgundy maerl paint weed (*Cruoria cruoriaeformis*)
Grateloup's little-lobed weed (*Grateloupia montagnei*)
Coral maerl (*Lithothamnion corallioides*)

Species Features of Conservation Importance
Common maerl (*Phymatolithon calcareum*)
Tentacled lagoon-worm (*Alkmaria romijni*)
Lagoon sandworm (*Armandia cirrhosa*)
Giant goby (*Gobius cobitis*)
Couch's goby (*Gobius couchi*)
Long snouted seahorse (*Hippocampus guttulatus*)
Short snouted seahorse (*Hippocampus hippocampus*)
Trembling sea mat (*Victorella pavida*)
Sea-fan anemone (*Amphianthus dohrnii*)
Pink sea-fan (*Eunicella verrucosa*)
Stalked jellyfish (*Haliclystus* species)
Sunset cup coral (*Leptopsammia pruvoti*)
Stalked jellyfish (*Lucernariopsis campanulata*)
Stalked jellyfish (*Lucernariopsis cruxmelitensis*)
Starlet sea anemone (*Nematostella vectensis*)
Lagoon sand shrimp (*Gammarus insensibilis*)
Amphipod shrimp (*Gitanopsis bispinosa*)
Gooseneck barnacle (*Pollicipes pollicipes*)
Spiny lobster (*Palinurus elephas*)
Ocean quahog (*Arctica islandica*)
Fan mussel (*Atrina fragilis*)
Defolin`s lagoon snail (*Caecum armoricum*)
Native oyster (*Ostrea edulis*)
Lagoon sea slug (*Tenellia adspersa*)

Highly Mobile Species Features of Conservation Importance
Smelt (*Osmerus eperlanus*)
Undulate ray (*Raja undulata*)