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Marine Conservation Zones

Scientific advice on proposed MCZs for highly mobile species: Tranche 3 pre-consultation advice overview report

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Purpose of this report

The UK Government's Department for Environment Food & Rural Affairs (**Defra**) asked the Joint Nature Conservation Committee (**JNCC**) and Natural England to provide further formal pre-consultation advice on 12 draft Marine Conservation Zones (**MCZs**) for highly mobile species that have been proposed by third-parties as part of the third tranche of MCZ designations.

This pre-consultation advice report provides an overview of the process followed by JNCC and Natural England to review proposals for highly mobile species MCZ submitted by third-parties. Our formal pre-consultation advice is set out in Section 2 (our initial assessment of proposals against the principles identified for highly mobile species MCZs) and our further formal pre-consultation advice in Section 3. This report is supplemented by individual site assessments and site summaries that provide an overview of the scientific case for designation of the 12 highly mobile species MCZ proposals for which Defra have requested further formal pre-consultation advice.

Executive Summary

Marine Conservation Zones (MCZs) are a form of Marine Protected Area (MPA) created under the Marine and Coastal Access Act 2009 (HM Government, 2009) to conserve marine animals, plants and their habitats, together with areas of seabed important for their geomorphological and/or geological features. By conserving these features, MCZs join other types of MPAs with the aim of creating an ecologically coherent and well managed network of MPAs that make a contribution to completing the Blue Belt.

Since 2013, Defra have designated 50 MCZs following a comprehensive stakeholder led process, scientific review and public consultation. During this Parliament, Defra aim to designate a further tranche of MCZs, with the possibility of including MCZs proposed by third-parties for the conservation of highly mobile species. MCZs designated to conserve highly mobile species must clearly be able to contribute to the long-term viability of protected populations and, where necessary, help recover those populations. In 2016, third-parties were asked by Defra to propose highly mobile species for protection within MCZs where there is clear evidence that their conservation will benefit from site-based protection measures.

To support third-parties in preparing submissions for highly mobile species MCZs, JNCC and Natural England jointly produced guidance setting out the principles that third-parties should follow in preparing their submissions (Natural England and JNCC, 2016a). These principles draw on the MCZ network principles set out in the Ecological Network Guidance (Natural England and JNCC, 2010), as well as experience in selecting Special Protection Areas and Special Areas of Conservation for highly mobile species under the EC Wild Birds (European Commission, 1979) and EC Habitats Directives (European Commission 1992) respectively.

Four principles were identified as being important for the identification of MCZs for highly mobile species:

- **Ecological significance** – is the area considered to be of critical importance to the life history of the highly mobile species, e.g. for feeding or breeding behaviours?
- **Persistence** – supporting data should demonstrate long-term persistence (allowing for natural seasonal and inter-annual variation) of highly mobile species at a greater than average density by comparison to the wider sea area.
- **Site size and delineation** – MCZs should be large enough to maintain the supporting functions that a highly mobile species requires in a given location. This includes any supporting habitats, oceanographic processes, geological/geomorphological features or species important to the conservation of a given highly mobile species in the same locality are also considered in the context of MCZ size and extent.

- **Appropriateness of management** - The particular value of site-based protection measures to the conservation of the species must be clear in an MCZ proposal to conserve a highly mobile species. For example, the proposal should demonstrate how a site-based measure compares to wider (possibly already existing) measures. Site-based measures may be particularly useful where localised threats are present that are not adequately considered by wider existing measures.

In August 2016, JNCC and Natural England received 21 highly mobile species MCZ submissions from Defra that were prepared by third-parties. Defra requested that JNCC and Natural England undertake a review of the degree to which the principles outlined in Natural England and JNCC (2016a) (and summarised above) are considered to be met according to the process set out in **Annex 3** for 17 of these submissions. The four proposals not assessed were for smelt (*Osmerus eperlanus*) in the Alde Ore, Medway, Thames and Wyre Lune estuaries because these areas were already under consideration for smelt as part of the main Tranche 3 MCZ work programme. Natural England have provided advice to Defra on smelt as a feature of these four sites and have also applied the process set out below in order to assess the sites against the four highly mobile species principles.

Of the 17 proposals JNCC and Natural England assessed, Defra requested further formal pre-consultation advice on 10 (and agreed that the Dorset composite proposals should thereon be considered as 3 separate proposals called Poole Rocks, Southbourne Rough and Purbeck), namely all those proposals (including their specific features) that sufficiently met the four principles *i.e.* scored moderate or high (or had the potential to score moderate or high with modest additional analysis of readily available evidence) across all four principles as set out in Natural England and JNCC (2016a). Due to the splitting of the Dorset composite proposal into 3 separate proposals, there were then 12 proposals to provide further formal pre-consultation advice on. Table 1 provides an overview of these MCZ proposals and their proposed protected feature(s). The locations of these 12 MCZ proposals for highly mobile species are illustrated in Figure 1. Table 5 provides a summary of our further formal pre-consultation advice on these 12 proposals, including the General Management Approach (GMA).

The present report provides an overview of the process followed by JNCC and Natural England to review proposals for highly mobile species MCZ submitted by third-parties. This report is supplemented by individual site assessments (provided separately) that provide an overview of the scientific case for designation concerning the 12 highly mobile species MCZ proposals for which Defra have requested further formal pre-consultation advice.

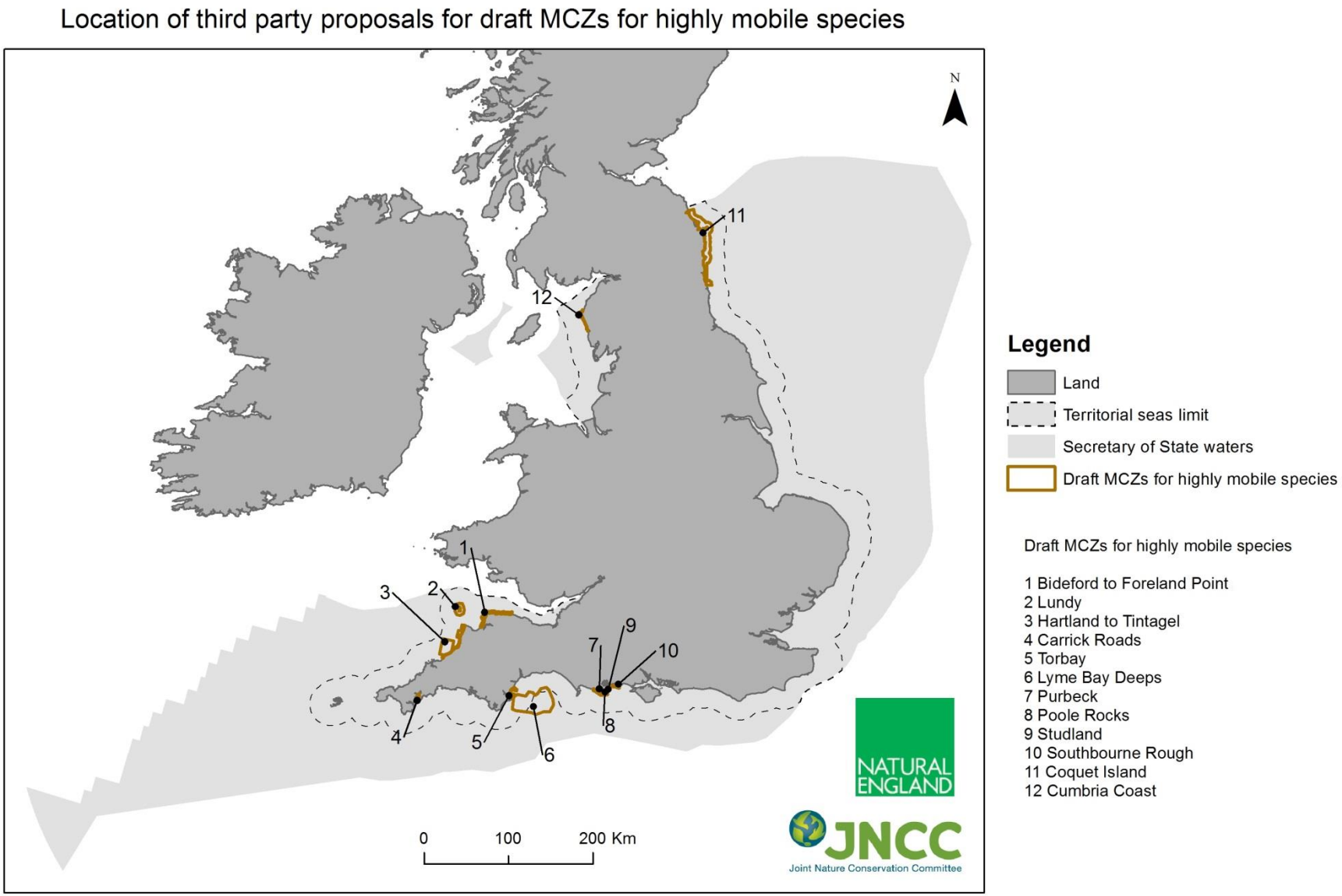
Table 1. MCZ proposals for highly mobile species considered to sufficiently meet the principles set out in Natural England and JNCC (2016a).

Site	Proposed protected feature(s)
Lyme Bay Deeps	White-beaked dolphin
Purbeck[1]	Black bream
Poole Rocks[1]	Black bream
Southbourne Rough[1]	Black bream
Bideford to Foreland Point	Common guillemot, Razorbill
Carrick Roads	Black-necked grebe
Coquet to St Mary's	Common eider

[1] Submitted by third-party as 'Dorset composite site' but considered as 3 separate sites in our further formal pre-consultation advice

Hartland to Tintagel	Common guillemot
Lundy	Manx shearwater, Common guillemot, Razorbill
Studland	Black-necked grebe
Torbay	Black-necked grebe, Common guillemot
Cumbria Coast	Common guillemot, Razorbill

Figure 1 Map of the twelve MCZ proposals for highly mobile species for which Defra have requested further formal pre-consultation advice



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1 Introduction

1.1 Developing the MPA network

The UK Government and Devolved Administrations are committed to creating an ecologically coherent network of Marine Protected Areas (MPAs) in UK waters and, in 2012, published a statement on the expected UK contribution to an ecologically coherent MPA network in the north-east Atlantic (Joint Administrations Statement 2012). Defra's guidance on the selection and designation of Marine Conservation Zones (MCZs) outlines their ambition to develop an ecologically coherent and well-managed network of MPAs (Defra 2010), which in turn will contribute to the achievement of European and international marine conservation targets such as those outlined under the EU Marine Strategy Framework Directive, the Convention on Biological Diversity and OSPAR Convention. The current UK Government has also committed to completing a "Blue Belt" of MPAs around the UK. Since 2013, Defra have designated 50 MCZs and in 2017 Defra are preparing to designate a further tranche of MCZs, with the possibility of including sites proposed for the conservation of highly mobile species.

1.2 The case for highly mobile species MCZs

In the UK many highly mobile species are already protected under existing European and national legislation. Marine protected areas (including MCZs) should be designated for highly mobile species only where there is clear evidence that their conservation would benefit from site-based protection measures, such as where a species is present in sufficient numbers at predictable and stable locations (for example where there is an important food source) in order to establish meaningful site boundaries, conservation objectives, and management that would go beyond that provided by wider seas measures.

The ecology of highly mobile species at sea (cetaceans, birds and fish/elasmobranchs) is such that it is considered in many cases that their conservation can be more effectively delivered through measures taken at the wider seas scale, rather than measures taken within MCZs. However, where there is evidence that a spatially definable area is of persistent importance to the life history of a highly mobile species with localised threats that need to be managed in that area, site-based mechanisms may prove to be effective conservation tools. Few such areas have been identified so far in English Waters and Northern Irish Offshore Waters. Exceptions include the identification of Kingmere MCZ as being of importance for black bream (*Spondyliosoma cantharus)*, and the protection of smelt (*Osmerus eperlanus*) in the Tamar Estuary MCZ.

1.3 Guidance for the identification of MCZs for highly mobile species

The identification of MCZs to date has been based on the principles outlined in the Ecological Network Guidance (ENG) (Natural England and JNCC 2010) to establish a network of MPAs. The ENG sets out a series of seven network design principles (with 19 underlying guidelines) for developing a network of MCZs, to reflect the guidance provided by the OSPAR Commission and the obligations under the Marine & Coastal Access Act (HM Government 2009). These principles provide the context in which sites can be identified for features such that all sites in combination make up a network. In addition, the ENG also lays out several further considerations that may be helpful in the development of a network of MCZs.

Some of the guidelines and further considerations in the ENG are not directly relevant in the context of highly mobile species. JNCC and Natural England therefore created further guidance (Natural England and JNCC 2016a) to assist third parties in proposing suitable sites for highly mobile species. This guidance includes a number of principles that third-parties should consider in preparing their submissions. The principles drew on the MCZ network principles set out in the Ecological Network Guidance, as well as experience in selecting Special Protection Areas and Special Areas of Conservation for highly mobile species. The four ecological principles were:

Principle 1 - Ecological significance – is the area considered to be of critical importance to the life cycle of the highly mobile species, e.g. for feeding or breeding behaviours. 'Critical importance' should be read as if the area was not protected within an MCZ the species would be affected at a population or sub-population level. Identifying the need for, the number of, and the location of MCZs to conserve a highly mobile species should be based on an appropriate-scale assessment. An appropriate scale assessment might be, for example, at the bio-geographical level, UK-wide assessments or, for cetaceans, within Management Units of important areas for each species. Such an approach can help demonstrate how any single or suite of site proposals may contribute to the conservation of a given species.

Principle 2 – Persistence – supporting data should demonstrate long-term presence (allowing for natural seasonal and inter-annual variation) at a greater than average density of the wider area where possible. Approaches to considering persistence can differ depending on the species type in question. To support third-parties, we provided an overview of best practice examples (also given in Annex 1 of this report for reference).

In the guidance document for highly mobile species, JNCC and Natural England set out that a preference would be given to proposals underpinned by scientifically robust, quality assured long-term datasets that account for aspects such as seasonal and inter-annual variation. However, we also noted that lay and expert-knowledge may also be used as an information source to support proposals and that contrary information should not be ignored.

Principle 3 – MPA size – MCZs should be large enough to maintain the supporting functions that the species requires in a given location where any site is being considered. Such consideration includes ensuring that any supporting habitats, oceanographic processes, geological/geomorphological features or species important to the conservation of a given highly mobile species in the same locality are also considered in the context of MCZ size and extent. MCZ proposals aiming to conserve highly mobile species should follow the MCZ boundary setting principles outlined in the ENG i.e. ensuring a minimum number of straight lines, ensuring compact shapes tightly aligned to features (including an appropriate margin if considered necessary to achieve conservation of the features) and combining adjoining discrete locations.

Principle 4 – Appropriateness of management – The particular value of site-based protection measures to the conservation of the species must be clear in an MCZ proposal to conserve a highly mobile species. For example, the proposal would demonstrate how a site-based measure compares to wider (possibly already existing) measures. Site-based measures may be particularly useful where localised threats are present that are not adequately considered by wider existing measures. A proposal should also consider whether improvements to measures taken at a wider area would be more effective than a local site-based measure such as a MCZ.

Whilst Natural England and JNCC (2016a) included a review of the in-principle suitability of MCZs for a range of highly mobile species, the guidance clearly stated that this should not be considered as a finite list and that JNCC and Natural England would consider the scientific case for any proposal put forward by a third-party.

Included in the guidance was a submissions template for third-parties to complete (Annex 2) and an assessment table (Annex 3) that illustrated the evidence requirements from third-parties under the four principles set out in Natural England and JNCC (2016a).

1.4 Overview of third-party MCZ proposals for highly mobile species

A total of 21 MCZ proposals for highly mobile species were received by Defra from third-parties in July 2016. Defra requested that JNCC and Natural England undertake a review of the degree to which the principles outlined in Natural England and JNCC (2016a) were considered to be met as per the process set out in Annex 3 for all of these submissions except those for smelt. The four smelt proposals not assessed were for the Alde Ore, Medway, Thames and Wyre Lune estuaries, because these areas were

already under consideration for smelt as part of the main Tranche 3 MCZ work programme. Natural England have provided separate advice to Defra on smelt as a feature of these 4 sites and have also followed the process set out below in order to assess the sites against the four highly mobile species principles.

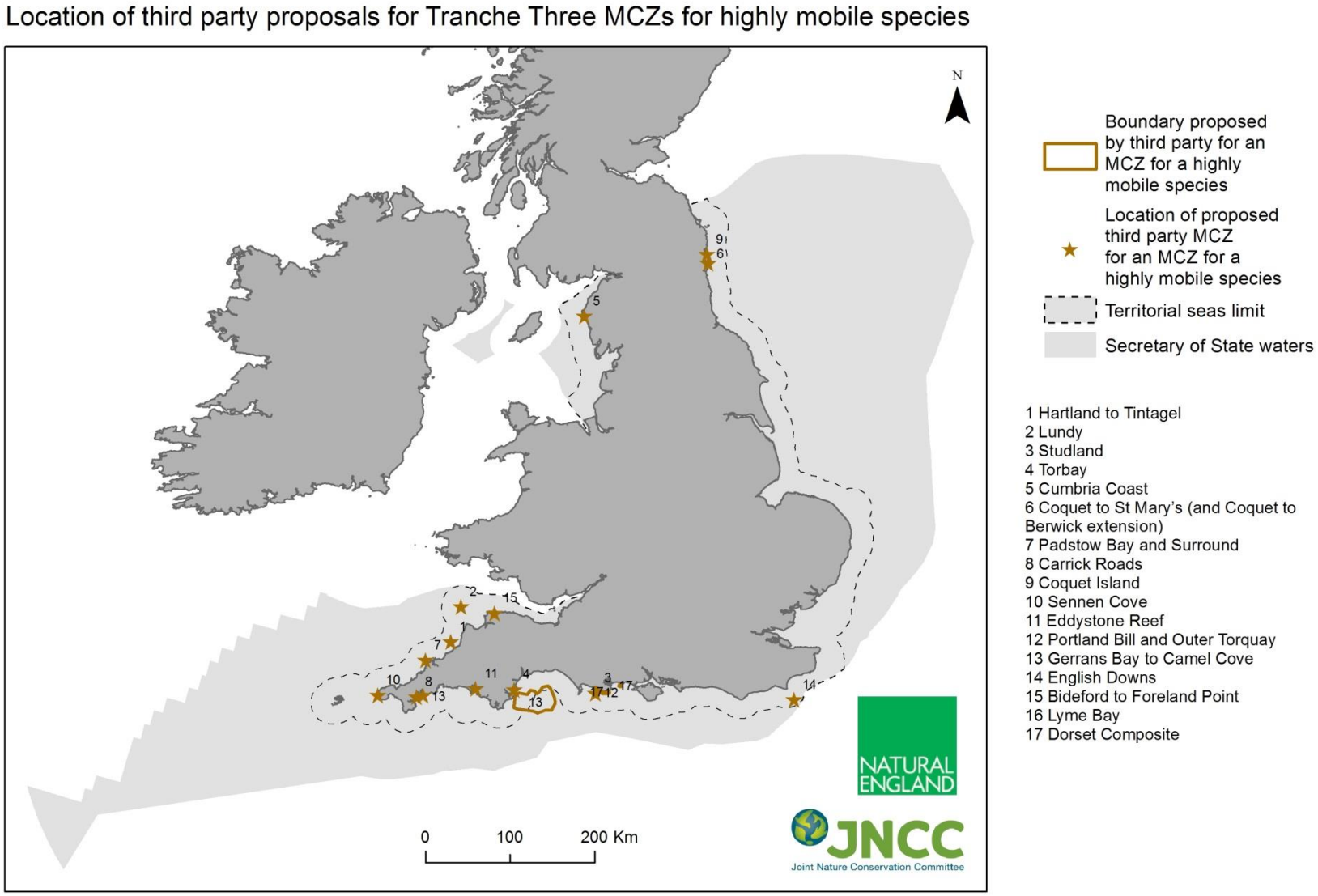
Of the remaining 17 proposals, four were for fish, eleven for birds and two for marine mammals (Table 2). In September 2016, JNCC and Natural England provided an initial assessment of how the 17 remaining proposals scored against the principles, using the assessment framework contained within Annex 3. An overview of the proposals assessed by Natural England and JNCC in September 2016 is shown in Table 2 below. These 17 proposals are shown in Figure 2 (largely as indicative locations rather than site boundaries). It is worth noting that one proposal for black bream in Dorset was comprised of a composite site made up of three distinct geographical areas. Some of these proposals were envisaged as the addition of mobile species features to existing MCZs, or extensions to existing MCZs. Other proposals received were for new MCZs entirely.

Table 2. Summary of third party proposals assessed by Natural England and JNCC as part of their initial formal advice to Defra

Proposed site name	Type of proposal	Proposed protected feature(s)
Purbeck, Poole Rocks & Southbourne Rough	Dorset composite site made up of 3 areas: 2 wholly new areas[2], and an area that overlaps with an existing MCZ	Black bream
Lyme Bay Deeps	Wholly new area[2].	White-beaked dolphin
Eddystone Reef	Wholly new area	Bass; Pollack; Cod
Sennen Cove	Wholly new area	Grey mullet (*Chelon labrosus*; *Liza ramada; Liza auratus*)
English Downs	Wholly new area	Atlantic herring
Coquet to St Marys	Adding feature to existing MCZ	White-beaked dolphin
Studland	Existing Tranche 3 MCZ consideration	Black-necked grebe
Padstow Bay and the surrounds	Adding feature to existing MCZ	Northern fulmar; Common guillemot; Atlantic puffin
Gerrans Bay to Camel Cove	Partly or wholly overlaps with an existing type of MPA	Common guillemot; European shag
Hartland to Tintagel	Partly or wholly overlaps with an existing type of MPA	Common guillemot
Portland Bill and Outer Torquay	Partly or wholly overlaps with an existing type of MPA	Balearic shearwater
Bideford to Foreland Point	Partly or wholly overlaps with an existing type of MPA	Common guillemot; Razorbill
Carrick Roads	Wholly new area[2]	Black-necked grebe
Coquet Island	Wholly new area	Common eider
Cumbria Coast	Partly or wholly overlaps with an existing type of MPA	Black Guillemot; Atlantic puffin; Common guillemot; Razorbill; Black-legged kittiwake; Fulmar
Lundy	Partly or wholly overlaps with an existing type of MPA	Manx shearwater; Atlantic puffin; Common guillemot; Razorbill
Torbay	Partly or wholly overlaps with an existing type of MPA	Black-necked grebe; Common guillemot

[2] Proposal has potential to partly or wholly overlap with a Tranche 3 MCZ new site option currently under consideration as part of Natural England and JNCC's advice to Defra on ecological gaps in the existing MPA network; this will require further consideration should the proposal (and new site option) be progressed further.

Figure 2 Map of the 17 proposals for highly mobile species MCZs Defra requested that JNCC and Natural England assess against the principles set out in Natural England and JNCC (2016a). These are the proposals Defra received from third-parties in July 2016 (21 in total), minus the 4 smelt proposals because these areas were already under consideration for that feature as part of the main Tranche 3 MCZ work programme.



2 Initial assessments of proposals against the selection criteria

2.1 Assessment of evidence supporting highly mobile species MCZs proposals

Natural England and JNCC are committed to the use of the best available evidence to support the designation of MCZs. For MCZ features in Tranches 1–3 proposed by the regional MCZ projects, Natural England and JNCC have followed the guidelines set out in the Ecological Network Guidance (Natural England and JNCC 2010) and applied Technical Protocol E (JNCC and Natural England 2012a) and data sufficiency guidelines (JNCC and Natural England 2015 and previous versions; JNCC and Natural England 2016b) to assess our confidence in, and the sufficiency of, the evidence on the presence and extent of those features being proposed.

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 factors such as ecological importance. Instead, proposals for highly mobile species MCZs have been assessed using the separate guidelines that were developed for highly mobile species proposals (Natural England and JNCC 2016a). Table 5 in those guidelines sets out the criteria for assessing the robustness of the ecological evidence supporting the mobile species proposals for each of the four mobile species selection principles.

Annex 4 contains the criteria for principles 1–3 (Ecological significance, Persistence, MPA size and delineation) which have been applied to the evidence for each site/species and which have formed the basis for the assessments in this document that relate to the presence and extent of the mobile species features. The assessment against the principle 1-3 criteria replaces the Protocol E assessment.

2.2 Summary of initial criteria compliance testing

A workshop was held on the 9th and 10th August 2016, where experts in the marine species groups from both Natural England and JNCC came together to score all of the proposals against the principles for a MCZ for highly mobile species in accordance with the assessment framework set out in Annex 3. To ensure consistency in the approach towards assessing the proposals, all experts worked together on three proposals initially before separating out to score the remaining proposals for their particular feature type. Final quality assurance of the assessment process was undertaken by Principal Specialists within Natural England and JNCC. An assessment sheet was completed for each of the 17 highly mobile species MCZ proposals. These were also used to inform the individual site assessments for those proposals for which Defra requested further formal pre-consultation advice (see Section 3).

The proposals received from third-parties varied greatly in length, complexity, and the nature of the evidence presented against each of the four principles. The initial assessment scores agreed for each proposal against each of the four principles are provided in Table 3. The proposals are ordered from those that best met the principles to those that met the principles least well.

It was obvious to the agency experts that some of the proposals had the potential to be improved within the MCZ Tranche 3 timeframe using other data that are readily available (highlighted in green in Table 3), e.g. where the proponent could provide additional technical information within an acceptable timeframe, or that this was already available to Natural England and/or JNCC. Other proposals could make a possible contribution to the network but they would require significantly more work that would be outside the current MCZ timeframe (i.e. those proposals not highlighted or already ranking highly in Table 3 below).

Table 3. Proposals for MCZs for highly mobile species ranked in order of scores against principles, scored solely on the information provided in the proposals[3]. (Those proposals highlighted in green had the potential to be improved within the Tranche 3 timeframe using other data that are readily available)

Rank	Proposals (and species considered)	Principle 1 – Ecological significance	Principle 2 – Persistence	Principle 3 – Size and delineation	Principle 4 – Appropriateness of management
1	**Dorset composite site (Purbeck, Poole Rocks, Southbourne Rough)** (Black bream)	Purbeck – High Poole Rocks – High Southbourne Rough – Moderate	Purbeck – High Poole Rocks – High Southbourne Rough – High	Purbeck – Low Poole Rocks – High Southbourne Rough – Moderate	Purbeck – Moderate Poole Rocks – Moderate Southbourne Rough – Moderate
2=	**Lundy** (Manx shearwater, Atlantic puffin, Common guillemot, Razorbill)[4]	High – Manx shearwater, razorbill; Moderate – Common guillemot; Low – Atlantic puffin	High	Moderate	Low
2=	**Carrick Roads** (Black-necked grebe)	High	High	Moderate	Low
4	**Lyme Bay Deeps** (White-beaked dolphin)	Moderate	High	Moderate	Low
5	**Torbay** (Common guillemot, Black-necked grebe)[4]	Moderate	Moderate	Low – Common guillemot; Not Met – Black-necked grebe	Moderate – Common guillemot; Low – Black-necked grebe.
6	**English Downs** (Herring)	Low	High	Low	Low
7=	**Portland Bill & Outer Torquay** (Balearic shearwater)	Low	Moderate	Low	Low
7=	**Sennen Cove** (Grey mullet species)	Low	Low	Low	Moderate
9=	**Bideford to Foreland Point** (Common guillemot, Razorbill)[4]	Moderate	Moderate	Moderate	Not met
9=	**Studland** (Black-necked grebe)	High	High	Not Met	Not Met
11	**Cumbria Coast** (Black guillemot, Atlantic puffin, Common guillemot, Razorbill, Black legged kittiwake, Northern fulmar)[4]	Moderate – Common guillemot, razorbill; Low – Black guillemot, Atlantic puffin,	Moderate	Low	Not Met

[3] Where scores differ between species proposed for a given site across the principles, or the different composite areas of a given proposal, these differences are shown in the table; where there are multiple species proposed but a single score provided across the principles then this applies across all species. Ranking is undertaken based on the highest scoring species for each site or area for the Dorset black bream proposal.

[4] These proposals are for extensions to seabirds colonies, and are discussed further in the text below

Rank	Proposals (and species considered)	Principle 1 – Ecological significance	Principle 2 – Persistence	Principle 3 – Size and delineation	Principle 4 – Appropriateness of management
		Black legged Kittiwake, Northern fulmar.			
12	**Coquet Island** (Common eider)	Moderate	Low	Low	Not Met
13=	**Hartland Point to Tintagel** (Common guillemot)[4]	Low	Low	Low	Not Met
13=	**Padstow Bay and Surrounds** (Common guillemot, Northern fulmar, Atlantic puffin)[4]	Low	Low	Low	Not Met
13=	**Coquet to St Marys** (White-beaked dolphin)	Low	Not Met	Low	Low
16	**Gerrans Bay to Camel Cove** (Common guillemot, European shag)[4]	Low	Low	Not Met	Not Met
17	**Eddystone Reef** (Bass, Pollack, Cod)	Low	Not Met	Not Met	Not Met

2.3 Proposed extensions to seabird colonies

In the case of 7 of the proposals submitted by the RSPB (Lundy, Torbay, Bideford to Foreland Point, Hartland Point to Tintagel, Cumbria Coast, Gerrans Bay to Camel Cove, and Padstow Bay and surrounds), the aspiration was to provide additional at sea protection to seabirds that are features of existing coastal Sites of Special Scientific Interest (SSSIs) by creating an adjacent MCZ with a seaward boundary at a fixed distance from the colony (one kilometre, two kilometres or four kilometres depending on the species). In many of these proposals, the site-specific empirical evidence regarding: i) the ecological significance of the areas of water included in the proposed boundary and ii) the persistent occurrence of higher densities of birds inside the proposed boundary compared to outside, was insufficient to merit a score of High (Table 3). However, in considering these proposals (especially in regard of principles 2 and 3), which seek to put in place a "generic" maintenance extension around an existing seabird colony, it must be considered whether it is appropriate to apply the scoring criteria strictly against the site specific information provided. Natural England considered it a valid approach that, in proposing a "generic" sea area, the evidence base underpinning the derivation of that "generic" approach should be the focus of the compliance scoring exercise. In that case, the agreement regarding the ecological significance of maintenance extensions around seabird colonies to the birds of that colony, and the evidence that these generic areas support persistent use by breeding seabirds at higher densities than areas further offshore, and that a one kilometre distance is appropriate for auks, are all provided by various JNCC analyses and reports (McSorley *et al.* 2003, 2005, 2006; Reid and Webb 2005). These reports have already provided the justification for implementing maintenance extensions to numerous seabird colonies within SPAs. As this generic evidence was considered to be suitable in the SPA context, scores for many of these 7 MCZ sites for some or all of the first three principles could be increased to High. Annex 5 provides more information on the evidence sources that support this principle of applying maintenance extensions around breeding seabird colonies. Annex 5 is referred to as part of the relevant individual site assessments (provided separately).

In several of these 7 proposals, additional information is presented regarding the wider pattern of space use around colonies by various species. This information is based on analysis and modelling of at sea tracking data gathered from breeding birds carrying out foraging trips. In every case these foraging-based

data indicate areas of greatest use that are far more extensive then the “generic” boundaries proposed by the RSPB and are not used to justify the chosen boundary. Nonetheless, such information could in future provide the evidence base for much larger MCZs that would seek to protect species’ key foraging grounds. If such foraging areas were to be considered as a legitimate focus for future MCZ proposals, much more information than is currently provided would be required regarding the nature of the evidence underpinning the modelling, the details of the model itself and, critically, of its validation with independent empirical data. It is unlikely all this additional information could be provided within the timeframe for the current tranche of MCZs even if such an approach were considered appropriate.

Annex 6 provides a summary of the available colony count data in relation to those English seabird colonies that support the species of breeding seabirds in the third party MCZ proposals that Defra requested further formal pre-consultation advice on. Annex 6 is referred to as part of the relevant individual site assessments.

2.4 Potential scores

In line with the observation from Table 3 that several of the highly mobile species MCZ proposals had the potential to be improved within the MCZ Tranche 3 timeline, Table 4 provides a ranked list of proposals in terms of their potential to better meet the principles set out in Natural England and JNCC (2016a) using data that are readily available and that could be incorporated within the MCZ Tranche 3 timeframe. The basis for ‘potential’ scores against the principles was specific to each proposal and is described within each of the individual site assessments (provided below).

Table 4: Proposals ranked in order of potential scores[5]

Rank	**Proposals** (and species considered)	**Principle 1 – Ecological significance**	**Principle 2 – Persistence**	**Principle 3 – Size and delineation**	**Principle 4 – Appropriateness of management**
1=	**Lundy** (Manx shearwater, Atlantic puffin, Common guillemot, Razorbill)	High – Manx shearwater, Razorbill; Moderate – Common guillemot; Low – Atlantic puffin	High	High	Moderate
1=	**Dorset composite site (Purbeck, Poole Rocks, Southbourne Rough)** (Black bream)	Purbeck – High Poole Rocks – High Southbourne Rough – Moderate	Purbeck – High Poole Rocks – High Southbourne Rough – High	Purbeck – Low Poole Rocks – High Southbourne Rough – Moderate	Purbeck – Moderate Poole Rocks – Moderate Southbourne Rough – Moderate
3=	**Lyme Bay Deeps** (White-beaked dolphin)	Moderate	High	High	Moderate
3=	**Torbay** (Common guillemot, Black-necked grebe)	Moderate	High – Common guillemot; Moderate – Black-necked grebe	High – Common guillemot; Not met – Black-necked grebe	Moderate – Common guillemot; Low – Black-necked grebe
3=	**Bideford to Foreland Point** (Common guillemot, Razorbill)	Moderate	High	High	Moderate
3=	**Hartland Point to Tintagel** (Common guillemot)	Moderate	High	High	Moderate
3=	**Studland** (Black-necked grebe)	High	High	Moderate	Moderate
8	**Coquet Island** (Common eider)	High	Moderate	Moderate	Moderate
9=	**Cumbria Coast** (Black	High – Common guillemot;	High	High	Low[6]

[5] Where scores differ between species proposed for a given site across the principles, or the different composite areas of a given proposal, these differences are shown in the table; where there are multiple species proposed but a single score provided across the principles then this applies across all species. Ranking is undertaken based on the highest scoring species for each site, or area for the Dorset black bream proposal.

[6] The proposals for both Carrick Roads and Cumbria Coast initially scored low for Principle 4 (Appropriateness of Management) and at that time it was also thought that there was no potential to increase this score. However, just after Natural England submitted their assessments to Defra (in September 2016), further information was obtained from local staff which indicated that a potential score of 'moderate' may be more suitable against this principle, for both sites. As a result, Defra requested Natural England provide further advice on these two sites, along with the proposals that scored 'moderate' or 'high' for all principles.

Rank	**Proposals** (and species considered)	**Principle 1 – Ecological significance**	**Principle 2 – Persistence**	**Principle 3 – Size and delineation**	**Principle 4 – Appropriateness of management**
	guillemot, Atlantic puffin, Common guillemot, Razorbill, Black legged kittiwake, Northern fulmar)	Moderate – Razorbill; Low – Black guillemot, Atlantic puffin, Black legged kittiwake, Fulmar.			
9=	**Carrick Roads** (Black-necked grebe)	High	High	High	Low[6]
11	**Gerrans Bay to Camel Cove** (Common guillemot, European shag)	Moderate – European shag; Low – Common guillemot	High	High	Low
12	**Padstow Bay and Surrounds** (Common guillemot, Northern fulmar, Atlantic puffin)	Low	High	High	Low / Moderate
13	**English Downs** (Herring)	Low	High	Low	Low
14=	**Portland Bill & Outer Torquay** (Balearic shearwater)	Low	Moderate	Low	Low
14=	**Sennen Cove** (Grey mullet species)	Low	Low	Low	Moderate
14=	**Coquet to St Marys** (White-beaked dolphin)	Moderate	Low	Low	Low
17	**Eddystone Reef** (Bass, Pollack, Cod)	Low	Not Met	Not Met	Not Met

3 Natural England and JNCC's further formal pre-consultation advice on highly mobile species MCZ proposals

3.1 Proposals considered within scope of further formal pre-consultation advice

Defra requested further formal pre-consultation advice on 10 (a total of 12 proposals once the Dorset composite proposal had been split into 3 separate proposals) of the 17 proposals for which JNCC and Natural England provided an initial assessment against the principles set out in Natural England and JNCC (2016a). The decision was based on those proposals or feature(s) (in the case of multi-feature proposals) that scored (Table 3) (or had the potential to score with a modest amount of work during the highly mobile species MCZ advice work timeframe – Table 4) moderate or high across all of the principles.

Table 5 provides an overview of our further formal advice on the 12 MCZ proposals and their proposed protected feature(s), including their revised scores against the MCZ principles and the proposed General Management Approach (GMA) for each proposed protected feature. Section 3.4 outlines Natural England and JNCC's approach to establishing GMAs. The locations of these twelve MCZ proposals for highly mobile species are illustrated in Figure 3.

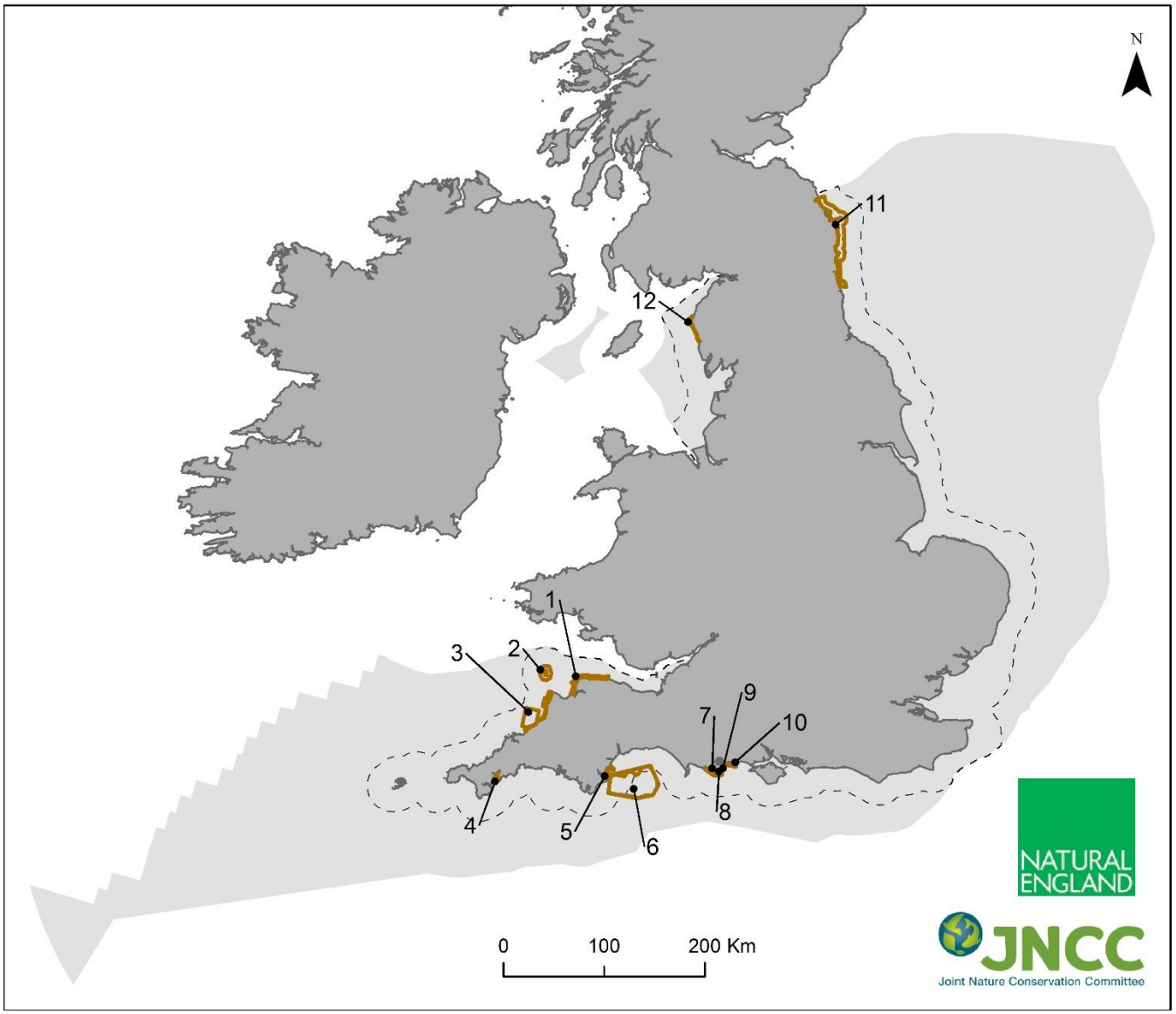
Table 5 Summary of pre-consultation advice for third-party MCZ proposals for highly mobile species for which Defra have requested further advice against the principles set out in Natural England and Defra (2016), their proposed protected feature(s) and General Management Approach

Site	Proposed protected feature(s)	Ecological significance	Persistence	Size and delineation	Appropriateness of management	Proposed GMA
Lyme Bay Deeps	White-beaked dolphin	Moderate	High	High	Moderate	Maintain
Purbeck	Black bream	High	High	Moderate	Moderate	Recover
Poole Rocks	Black bream	High	High	High	Moderate	Recover
Southbourne Rough	Black bream	Moderate	High	Moderate	Moderate	Recover
Bideford to Foreland Point	Common guillemot; Razorbill	High	High	High	Moderate	Maintain (both features)
Carrick Roads	Black-necked grebe	High	High	High	Moderate	Maintain
Coquet Island	Common eider	High	Low (proposed boundary); High (extension)	Low (proposed boundary); Moderate (extension)	Moderate	Recover
Hartland to Tintagel	Common guillemot	High	High	High	Moderate	Maintain
Lundy	Manx shearwater; Common guillemot; Razorbill	High	High	High	Moderate	Maintain (all features)
Studland	Black-necked grebe	High	High	High	Moderate	Recover

Torbay	Black-necked grebe; Common guillemot	High	High	High	Moderate	Recover – Black-necked grebe; Maintain – Common guillemot
Cumbria Coast	Common guillemot; Razorbill	High	High	High	Moderate	Maintain – Common guillemot; Recover – Razorbill

Individual site assessments have been developed (and are included below) that provide an overview of the scientific case for designation concerning the 12 highly mobile species MCZ proposals for which Defra requested further formal pre-consultation advice.

Figure 3 Location of the 12 MCZ proposals for highly mobile species for which Defra requested further formal pre-consultation advice



Legend

- Land
- Territorial seas limit
- Secretary of State waters
- Draft MCZs for highly mobile species

Draft MCZs for highly mobile species

1 Bideford to Foreland Point
2 Lundy
3 Hartland to Tintagel
4 Carrick Roads
5 Torbay
6 Lyme Bay Deeps
7 Purbeck
8 Poole Rocks
9 Studland Bay
10 Southborne Rough
11 Coquet Island
12 Cumbria Coast

3.2 Setting a site boundary for MCZ proposals that would be extensions to existing SSSIs

Of the 12 sites for which further formal pre-consultation advice is provided, 8 sites have been proposed for bird species. Of these, 5 MCZs have been proposed to provide protection in the waters immediately around seabird colonies that are currently protected by SSSIs (see the relevant individual site assessments for further details). Of these 5 proposed sites, part, or all, of the area covered by the existing SSSI overlaps a MCZ that has already been designated for other features. These designated MCZs have an upper boundary of mean high water (MHW).

In determining where to recommend the boundary for the 5 SSSI extension site proposals, Natural England has referred to the following:

- Marine and Coastal Access Act (Marine and Coastal Access Act, 2009); Section 23 (4) that establishes that SSSIs form part of the MPA network.
- Defra Guidance Note 4 (Defra, 2011) which, in section 5, provides guidance on circumstances where overlaps between SSSIs and MCZs are acceptable.
- The reasons why the Third party made their proposal for a MCZ for mobile species.
- Ecological Network Guidance (Natural England and JNCC 2010) boundary-setting principles for MCZs.
- Guidelines on MCZs for mobile species (JNCC and Natural England 2016a) that provides guidance on the setting of site boundaries.

The following method has then been applied by Natural England to draw the site boundary. This method reflects the third party proposals which were to extend the existing SSSI boundary seaward by a buffered distance:

- The bird feature has been added to the entirety of the existing designated MCZ; and
- Where the third-party proposed boundary (i.e. SSSI buffer) extends beyond the existing designated MCZ boundary, the new MCZ boundary has been drawn as a seaward extension of the lower SSSI boundary (which is typically Mean Low Water). This seaward extension assumes the bird species is already receiving protection in the intertidal area through the SSSI, and so the MCZ would provide additional at sea protection for the bird feature, whilst avoiding additional areas of overlap with the existing SSSI designation.

The resulting proposed site boundaries are provided within the individual site assessments (included below).

3.3 Assessment of evidence supporting proposals for highly mobile species MCZ proposals for which Defra have requested further formal pre-consultation advice

Natural England and JNCC have used the same approach as that outlined in Section 2.1 to assess the evidence associated with the third-party proposals against the mobile species principles. These assessments have incorporated any available additional evidence, which is described in detail in the individual site assessment documents themselves.

Further, the evidence summarised in Annex 5 (evidence underpinning the generic maintenance extensions for breeding seabird colonies) and Annex 6 (summary of breeding seabird colony count data) was used as part of these assessments, as detailed within the individual site assessment documents.

3.4 Developing General Management Approaches

This section describes how an assessment of the likely feature condition of a mobile species has been undertaken, and how the proposed general management approach (GMA) has been developed for each proposed protected feature of the draft MCZs for highly mobile species for which Defra have requested further formal pre-consultation advice. The type of GMA (i.e. to recover to, or maintain in, favourable condition) describes what is required to achieve the conservation objective for each feature (Defra, 2013).

For each feature, a likely condition of 'favourable' or 'unfavourable' and a GMA of 'Maintain' (in favourable condition) or 'Recover' (to favourable condition), respectively, has been advised. Ideally, the likely condition of a feature will 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 for condition. 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 of likely condition of species and habitat features within the sites where they are proposed for designation. A vulnerability assessment involves a review of the species or habitat to assess whether it is exposed to any pressures in the site to which it is sensitive to the point where it may be in unfavourable condition.

For all of the proposed protected features of the draft MCZs for highly mobile species, JNCC and Natural England reviewed the availability of direct evidence of condition. Where such empirical evidence occurs it was prioritised (JNCC and Natural England 2011). For some of the draft MCZs which were proposed to provide seaward extensions to existing Sites of Special Scientific Interest (SSSI) protecting colonies for the same species and population, recent SSSI condition assessments fulfil this direct evidence criterion. In cases where SSSI condition assessments were available for the same population for which the adjacent MCZ had been proposed they were used to determine condition of the feature in the proposed site overall and formed the main basis for the proposed GMA. This approach replaced a vulnerability assessment, as direct evidence on condition is generally of higher confidence and specificity than a purely risk-based vulnerability assessment as described below. If the condition assessment showed the condition to be 'favourable', a 'maintain' (in favourable condition) GMA was advised. In these scenarios, descriptions of any activities and related pressures that still might be of concern due to sensitivity evidence and possible exposure, albeit that the overall GMA is 'maintain', are described where necessary in the text of the site overview document.

Where direct evidence on condition was not available for a proposed protected feature of a draft MCZ for highly mobile species for which Defra have requested further formal pre-consultation advice on, a vulnerability assessment was completed and used to provide an indication of current condition. Spreadsheet workbooks were put together that compiled all available sensitivity evidence (ICES 2015; Pérez-Domínguez *et al*. 2016), knowledge about currently-occurring human activities, and the pressures that those activities would be likely to cause.

Combinations of feature, activity and likely related pressures were considered not to cause the feature to be either moderately or highly vulnerable (and were screened out of the initial vulnerability assessment) if any of the following cases applied:

- the activity is not considered to have been (in the recent past) or to be currently occurring in the site;
- the activity does not cause the pressure;
- there is considered to be a low risk of the activity causing the pressure;

- the activity causes the pressure but the feature is not sensitive or has a low sensitivity to the pressure; and,
- there is lack of evidence to show that there would be an impact on the feature as a result of being exposed to the activity and associated pressures.

Any remaining combinations of feature/activity/pressure that had not been screened out after the initial review were then tested against expert judgement to determine whether the population of the feature could be realistically considered to be in unfavourable condition due to the activity taking place at the site. In cases where it was concluded that the feature could be considered to be in unfavourable condition, a 'recover' to favourable condition GMA is advised, and a narrative as to which activities and pressures that could be causing this judgement is provided.

Exceptions, *i.e.* where a conclusion of moderate or high vulnerability was not made for the remaining 'high priority' feature-activity-pressure combinations, included:

- the activity and pressure take place but in such a way that it wouldn't impact the population, either because the activity takes place only at certain times of year, or in areas of the site where it would not impact the feature, or impact it to such a low level that it would not be deemed to be affecting the population.
- the activity is managed at the site so that its potential impacts on the feature are already mitigated

In addition to providing the GMA output and justification, any activities and pressures which are currently not thought to be triggering a 'Recover' GMA but may require further information or could pose a risk if circumstances changed were highlighted within the document.

Quality assurance processes for this element of the advice are described in **Section 4** below.

Each individual site assessment presents the proposed GMA for each proposed protected feature.

4 JNCC and Natural England's Evidence Quality Assurance

When compiling our advice, JNCC and Natural England have complied with the Government Chief Scientific Adviser's Guidelines on the Use of Scientific and Engineering Advice in Policy Making (Government Office for Science 2010), and the recommendations of the Graham-Bryce report (Defra 2011) that reviewed the evidence process for selecting marine Special Areas of Conservation.

Natural England has a series of internal standards that Natural England staff follow in delivering work to ensure all advice provided and all decisions made meet Natural England's Evidence Strategy (Natural England 2012a). These standards include:

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

Natural England has also applied the following QA process to this final advice in accordance with Natural England standards:

- A detailed technical review has been undertaken by the Chief Scientist and Principal Specialist for marine designations
- This review process has been witnessed by a member of Natural England's Board.

JNCC has its own internal Evidence Quality Assurance Policy (JNCC 2014) to ensure our advice is scientifically robust. The advice has been comprehensively checked and quality assured through JNCC's internal systems that include reviews by technical specialists and the MPA Programme Leader, and then reviewed by JNCC's independent non-executive MPA Sub Group.

Quality assurance of the advice presented in this document was provided by JNCC and Natural England's national specialists and Natural England's local site leads. A series of workshops and conference calls facilitated this QA process. Detailed audit logs underpin our advice on the General Management Approach, which are available on request from Natural England and JNCC.

In summary, our assessments have followed published criteria and used the best evidence available at the time of writing. Overall, we are content that our advice is a quality-assured product, fit for purpose, to assist the UK Government to make decisions about the designation of MCZs for highly mobile species.

5 Summary of JNCC and Natural England's Site Specific Advice

This section contains summaries of JNCC and Natural England's site specific advice on proposed Highly Mobile Species sites. The full site specific advice can be found in Section 6 JNCC and Natural England's Site Specific Advice.

5.1 Lyme Bay Deeps

5.1.1 Site summary

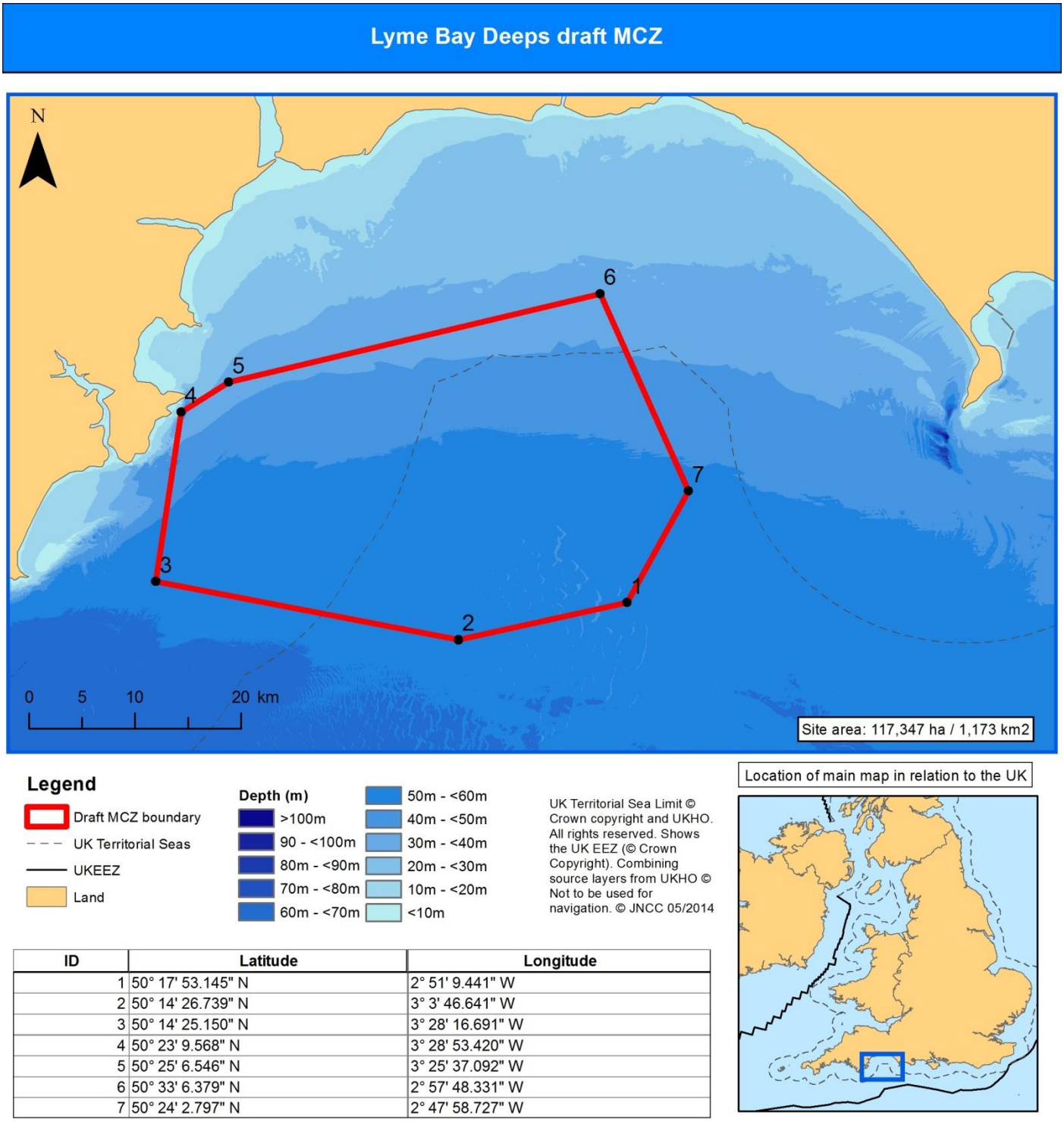
Site name	Lyme Bay Deeps draft MCZ
Site description	The Lyme Bay Deeps draft MCZ, is situated east of Torbay and Brixham and covers an area of 1,173 km^2. It extends from inshore waters beyond the 12 nautical mile limit into offshore waters (Figure 4). The draft MCZ covers much of western Lyme Bay, which represents the core area of white-beaked dolphin distribution in this region. The draft MCZ is characterised by water depths of more than 30 metres and a gently sloping, predominantly sandy seabed (composed of circalittoral fine sand and circalittoral muddy sand). The Lyme Bay Deeps draft MCZ fully encompasses a potential New Site Option under consideration for the broad-scale habitat - subtidal sand (East of Start Point) and is adjacent to several designated MPAs in the Lyme Bay area (Figure 5).
Proposed protected features	White-beaked dolphin *Lagenorhynchus albirostris* (Gray, 1846)
Aim of the MCZ in relation to conserving highly mobile species:	This draft MCZ is proposed to conserve the most southerly known group of white-beaked dolphin which are regularly observed in UK waters (Reid *et al*., 2003). This is believed to encompass an estimated 140 animals. The management intention for the Lyme Bay Deeps draft MCZ would be to safeguard this group of white-beaked dolphin against potentially damaging human activities that may take place in the future and to ensure that any potential impacts from such activities are adequately considered.
Summary of ecological significance of the site for the conservation of highly mobile species	Lyme Bay Deeps is the only area where white-beaked dolphins are regularly observed in the English Channel, at the southern edge of their known range in UK waters. They are observed year-round (with some of the same individuals observed across multiple years), indicating a high degree of persistence and site fidelity. Encounters are often with feeding animals (50% of recorded encounters) and calves (present in 20% of observed groups), demonstrating that this draft MCZ may represent a key foraging and calving area for this isolated group (Brereton *et al*., 2016). Overall, JNCC and Natural England have concluded a Moderate score against Principle 1 – ecological significance for the Lyme Bay Deeps draft MCZ– noting that empirical evidence for the ecological significance of the area for white-beaked dolphin is limited (based on a single study) and that benefits would unlikely be at the population or sub-population level.

Overview of supporting data	The evidence supporting this site is primarily from MARINElife[7], and includes effort-related survey data collected annually from 1995 to 2015. These data were supplemented with public sighting data from 2006-2015 and (limited) photo ID catalogues of the Lyme Bay group covering the period 2007-2014, and other individuals from around the UK and Iceland. Using these datasets, estimates of abundance and distribution were generated by MARINElife and The Wildlife Trust. It is the view of JNCC and Natural England that these data support the conclusion that a group of white-beaked dolphin persists in this area of the English Channel and demonstrate the groups fidelity to the area proposed as the Lyme Bay Deeps draft MCZ. We consider this conclusion to be based on a scientifically robust evidence-base and have therefore concluded a High score against Principle 2 – presence and persistence. However, it is important to note that white-beaked dolphins were not observed in the Lyme Bay region on a regular basis until the mid-2000s and there is a risk that this small isolated group at the edge of its range (normally found in more northerly and cooler waters) may not persist in the region in the long-term due to climate change or other increasing pressures.
Appropriateness of management and proposed General Management Approach	There are a range of human activities that take place, or could conceivably take place in the future, within or in close proximity to the Lyme Bay Deeps draft MCZ that pose a threat to white-beaked dolphins. These activities include commercial fishing, military activities, waste disposal and discharge, recreational activities, commercial shipping and other potentially licensable activities such as piling. Based on JNCC and Natural England's understanding of the pressures associated with these activities, the sensitivity of white-beaked dolphin to those pressures (based on ICES, 2015a), and activities that could realistically be managed through an MPA-based management approach, we consider that the General Management Approach for white-beaked dolphin in Lyme Bay Deeps draft MCZ should be set to Maintain the group in favourable condition. This conclusion is supported by data that suggest this group of white-beaked dolphin have persisted in the area for a number of years. The management intention for the Lyme Bay Deeps draft MCZ is to safeguard this group of white-beaked dolphin against potentially damaging activities that may take place in the future and to ensure any potential impacts from those activities are adequately assessed. Whilst the management of other activities is unlikely to be required within or near the Lyme Bay Deeps draft MCZ at the present time, if

[7]Further information on MARINElife projects is available on the MARINELife website: http://www.marine-life.org.uk/projects

	evidence becomes available in the future to suggest they pose a threat to achieving the conservation objectives for the site then further management measures may need to be considered. Overall, JNCC and Natural England consider that there is sufficient evidence to support a Moderate score against Principle 4 – appropriateness of management. The majority of activities that could give rise to pressures to which this group of white-beaked dolphin may be considered to be sensitive are largely already adequately managed through existing mechanisms. However, there is the added value in designating an MCZ for this particular group of white-beaked dolphin as it would enable greater consideration being given to impacts from more localised activities taking place within the area – most notably powerboating and wildlife tourism.

5.1.2 Site maps



ID	Latitude	Longitude
1	50° 17' 53.145" N	2° 51' 9.441" W
2	50° 14' 26.739" N	3° 3' 46.641" W
3	50° 14' 25.150" N	3° 28' 16.691" W
4	50° 23' 9.568" N	3° 28' 53.420" W
5	50° 25' 6.546" N	3° 25' 37.092" W
6	50° 33' 6.379" N	2° 57' 48.331" W
7	50° 24' 2.797" N	2° 47' 58.727" W

Figure 4 Map showing the suggested boundary for Lyme Bay Deep MCZ

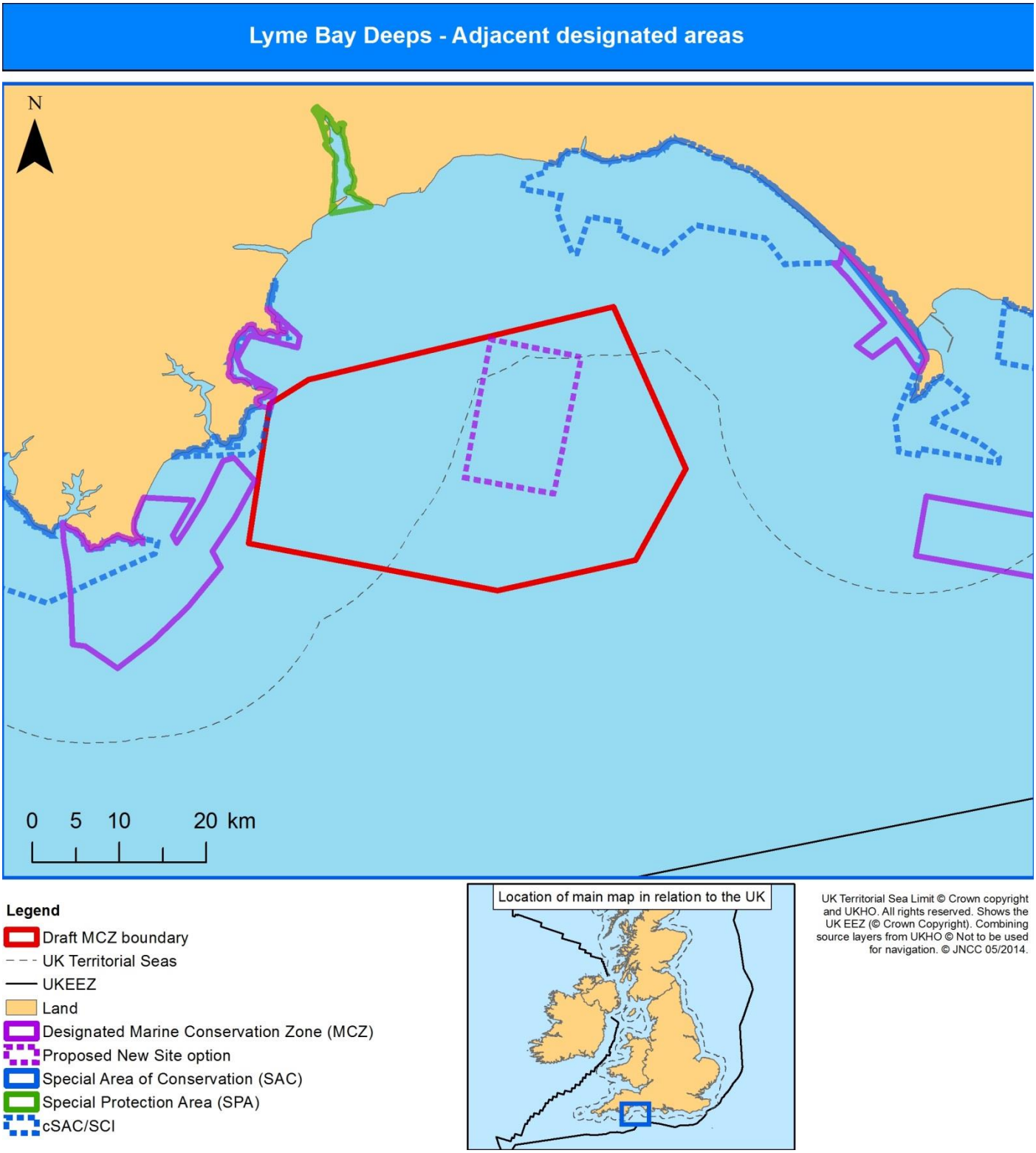


Figure 5 Map showing Lyme Bay Deeps MCZ in the context of other designations within and around the MPA

Summary of Natural England's Advice

Ecological significance

Table 1 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
White-beaked dolphin	**Moderate**	**Moderate**	**Moderate** No additional information available to support the case for the ecological significance of the area for white-beaked dolphin.

Persistence

Table 2 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
White-beaked dolphin	**High**	**High**	**High** A significant body of robust scientific evidence from multiple sources supports to the persistence of white-beaked dolphin within the outer Lyme Bay area.

Site size and delineation

Table 3 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
White-beaked dolphin	**Moderate**	**High**	**High** Boundary re-drawn in accordance with MCZ boundary setting principles and to encompass all effort-related sightings data in the outer Lyme Bay area collected annually between 2007 and 2014 and the majority of the largest concentration of casual sightings between 2006 and 2015.

Appropriateness of Management

Table 4 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	**Original score (Aug 2016)**	**Potential score (Aug 2016)**	**Updated score (taking into account further evidence review**
White-beaked dolphin	**Low**	**Moderate**	**Moderate** Closer examination of activities data within the area suggested potential threats from localised activities that may not be adequately managed under existing regulatory mechanisms.

General Management Approach

Table 5 Proposed General Management Approach

Feature proposed	**GMA proposed at the current time**	**Activities that have influenced the GMA**
Black-necked grebe	Maintain in favourable condition	White-beaked dolphin are not considered to be significantly exposed to pressures to which they are sensitive at the time the GMA was drafted.

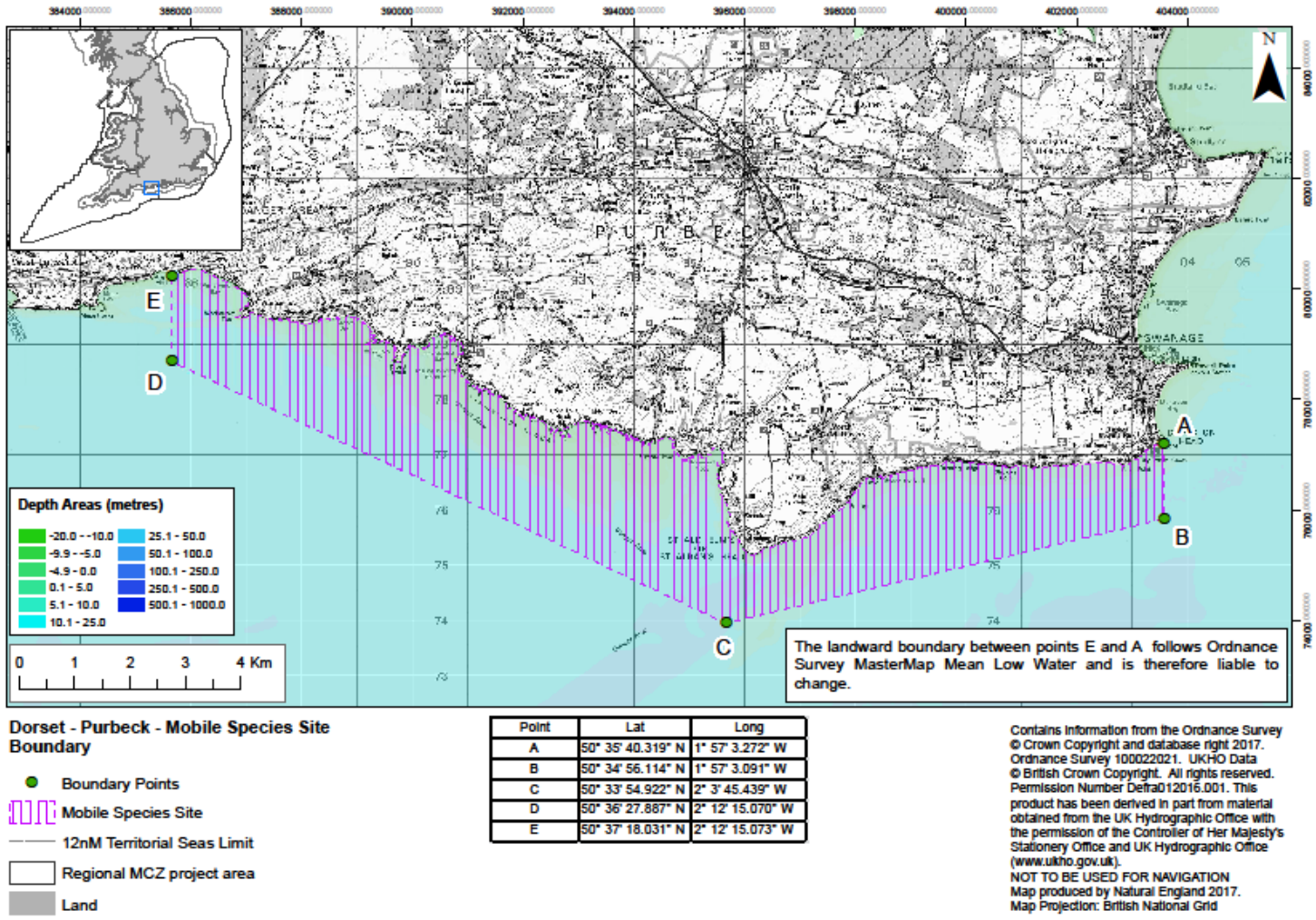
5.2 Purbeck

5.2.1 Site summary

Site Name:	Purbeck
Site description:	The site spans from Worbarrow Bay to Anvil Point in Dorset, comprising mostly near-horizontal or shallowly dipping circalittoral bedrock ledges with a thin covering of sediment in patches and gullies. It should be noted that the Studland to Portland SAC covers much of the area that is proposed for protection. Whilst consideration of bream protection through this SAC designation could be considered, this would be inconsistent with the recent protection of this species (black bream) through the existing MCZ designation process to date. Reef habitat currently receives protection as a designated feature of the SAC. The reef habitat protected through the SAC has is a supporting habitat for nesting black bream. The area is used between April and early July as a nesting ground for the black bream. The Purbeck third-party proposed highly mobile species MCZ also falls within the Purbeck Coast new site option. Therefore whilst each site is a potential Tranche 3 MCZ in its own right, should both be designated they would need to be combined as one site to avoid overlapping MCZ designations. Figure 6 shows the proposed boundary of the third-party proposed MCZ, and Figure 7 shows the third-party proposed MCZ in the wider context of other local marine protected areas.
Proposed protected features	Nesting black bream (*Spondyliosoma cantharus*)
Aim of the MCZ in relation to conserving highly mobile species:	Protection for nesting black bream during the nesting season (April to early July). The site is within the currently designated Studland to Portland SAC, but the nesting bream are not currently a feature of the site.
Summary of ecological significance of the site for the conservation of highly mobile species	Only one site in the UK is currently designated to protect nesting black bream, at Kingmere MCZ in Sussex. Black bream are summer visitors to the south and west coasts of the UK, overwintering in deeper waters and migrating inshore to breed (Collins & Mallinson 2012). Fish spawning aggregations and nursery habitats are the two most critical aspects in the lifecycle of most fish species. Unlike most other finfish that visit British waters to breed, the black bream exhibit highly selective 'nesting behaviour' (Pawson 1995). This unique characteristic makes this species highly vulnerable during the breeding period of their life cycle. This is one of three sites on the Dorset coast known for nesting black bream. There is good quality evidence that identifies at least three nesting assemblages within the site and the site contains the most extensive abundance of nests recorded in the area, off Kimmeridge Bay.
Overview of supporting data	**Army** The Lulworth Ranges Information for Mariners 2016.- 2016. **Collins, K. J. & Mallinson, J. J.** Surveying black bream,

	Spondyliosoma cantharus (L.), nesting sites using sidescan sonar. Underwater Technology Vol 30 No.4. 2012. pp. 183-188. **Dapling Tim [*et al.*]** Monitoring the Movements of the Black Sea Bream (*Spondyliosoma cantharus*, L.) utilising Kingmere Marine Conservation Zone as a Spawning Site. 2016. **Doggett M. & Openshaw M.** The Black seabream Project. Revealing the secrets of black seabream breeding behaviour off the Dorset coast. 2015. http://www.mattdoggett.com/the-black-bream-project/ **Martin & Sheila Openshaw** (bream researchers) *pers. comm.* 2016 **Seasearch** SCUBA diving reports 2010-2016 as described in Dorset Wildlife Trust's mobile species proposal, 2016. **Southern IFCA** Black bream Status Report [Report]. 2016. **Southern IFCA** Black bream nest side scan sonar survey data 2016 for Purbeck.
Proposed GMA	Recover to favourable condition

5.2.2 Site maps



Point	Lat	Long
A	50° 35' 40.319" N	1° 57' 3.272" W
B	50° 34' 56.114" N	1° 57' 3.091" W
C	50° 33' 54.922" N	2° 3' 45.439" W
D	50° 36' 27.887" N	2° 12' 15.070" W
E	50° 37' 18.031" N	2° 12' 15.073" W

Figure 6 Map showing the suggested boundary for Purbeck MCZ mobile species site

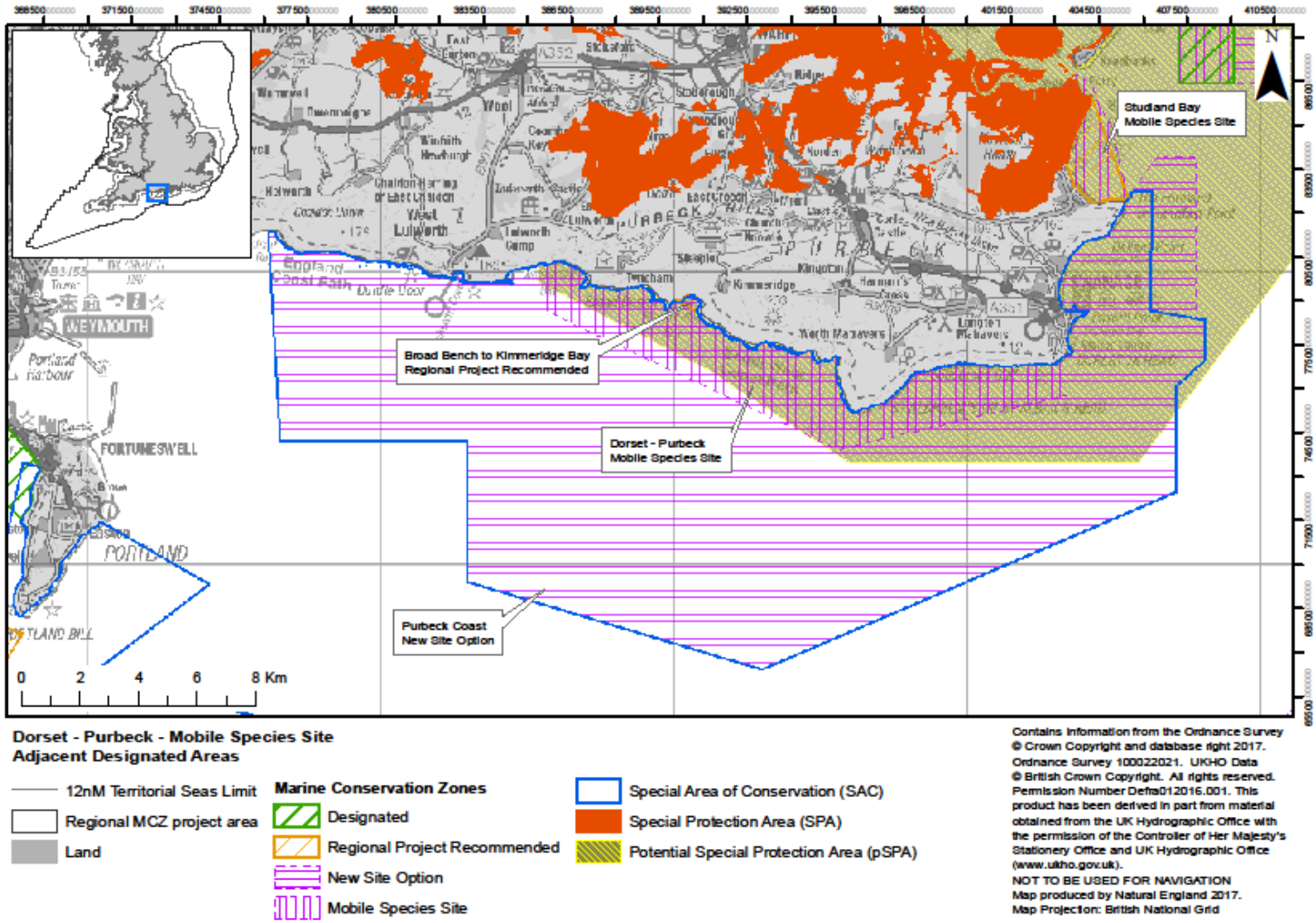


Figure 7 Map showing Purbeck MCZ in the context of other designations within and around the MPA

5.2.3 Summary of Natural England's Pre-Consultation Advice

Ecological significance

Table 6 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black bream (nesting)	**High** There is high quality and a range of evidence (side scan sonar, SCUBA diving, SIFCA observations) that identifies the location of nests within the Purbeck site, highlighting its ecological significance as a nesting ground for bream (Collins & Mallinson 2012; Dorset Wildlife Trust mobile species proposal 2016; Southern IFCA 2016b).	**High**	**High** Southern Inshore Fisheries and Conservation Authority (Southern IFCA) side scan sonar surveys identified an additional nesting ground within the proposed site boundary (Southern IFCA 2016c). Bream researchers have observed thousands of nests within the site which further supports the site's ecological significance for the species (Openshaw *pers. comm*. 2016)

Persistence

Table 7 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting black bream	**High** There is good quality and a range of evidence (side scan sonar, SCUBA diving, Southern IFCA observations and recreational angling activity data) that identifies the persistence of nesting bream at this site between 2008 and 2012 (Collins & Mallinson 2012; Dorset Wildlife Trust mobile species proposal 2016;	**High**	**High** Southern IFCA side scan sonar surveys in 2016 identified an additional nesting ground within the proposed site boundary (Southern IFCA 2016c). Sidescan sonar and SCUBA diving surveys indicate the persistent use of this site by nesting bream over at least a 7 year period between 2010 and 2016 (Collins & Mallinson 2012; Southern IFCA 2016c; Dorset Wildlife Trust mobile species proposal 2016).

	Southern IFCA 2016b).		

Site size and delineation

Table 8 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting Black bream	**Low** The rationale for the boundary for the site as proposed is unclear. The site does include the Kimmeridge and Dancing Ledge assemblages of nests but does not include the Tanville Ledges nest assemblage.	**Low**	**Moderate** Southern IFCA side scan sonar surveys identified an additional nest assemblage captured within the boundary which now encompasses three nest assemblages identified through robust side scan sonar techniques and supported by SCUBA diving observations through Seasearch and bream researchers. One known nest assemblage remains outside the proposed boundary.

Appropriateness of Management

Table 9 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting black bream	**Moderate**	**Moderate**	**Moderate**

General Management Approach

Table 10 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Activities that have influenced the GMA
Nesting black bream	Recover to favourable condition	Recover due to fishing activities. For further information on activities/pressures which may be of concern in the future if impact increases please see below.

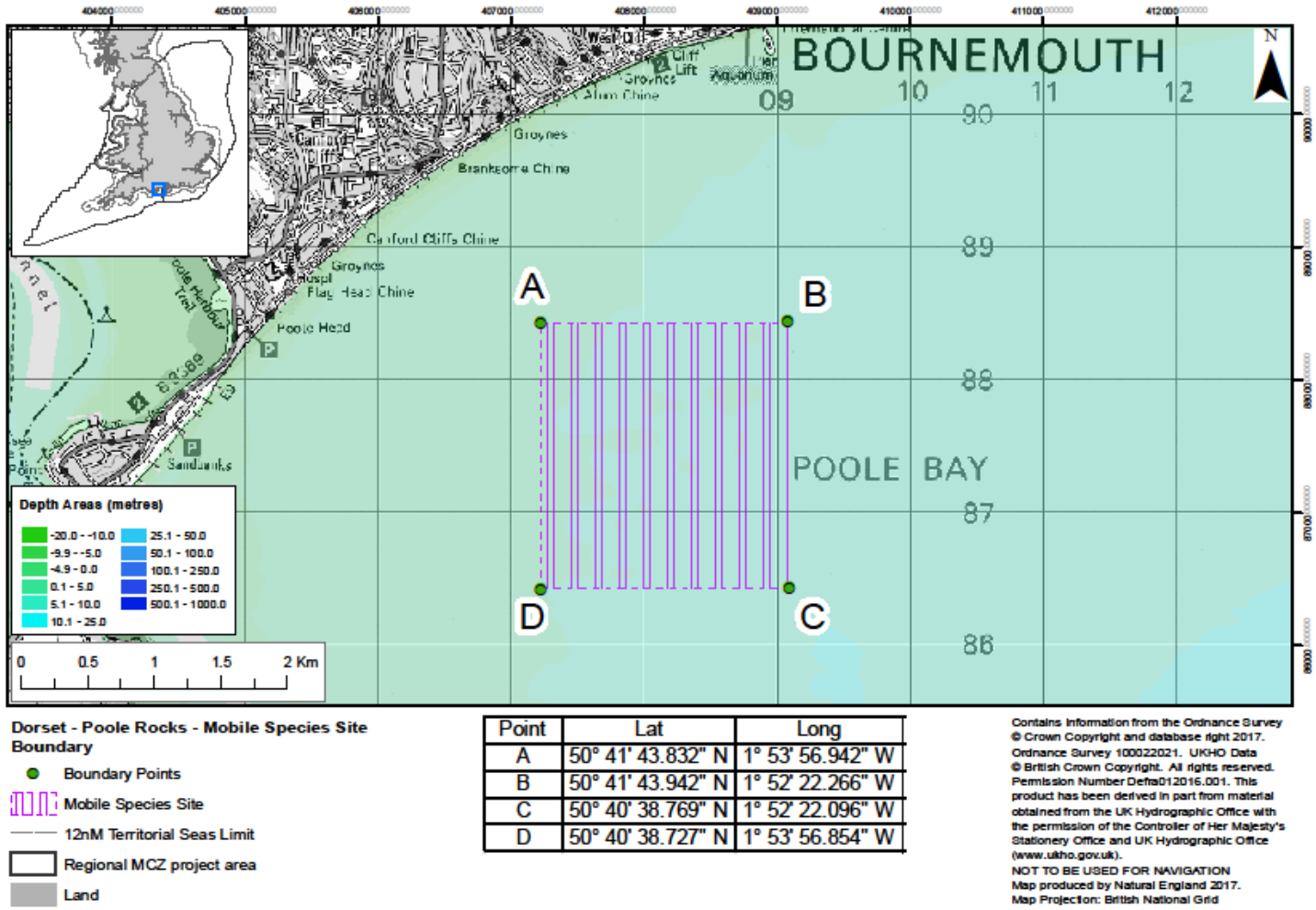
5.4 Poole Rocks

5.4.1 Site summary

Site Name:	Poole Rocks
Site description:	*Information sourced from the original third-party proposal* Poole Rocks MCZ is an inshore site covering an area of around four km^2 and is one of the smaller MCZs. It lies to the east of the entrance to Poole Harbour and approximately 2 to 2.5 kilometres to the east of the beachfront at Sandbanks. The site protects an area of rocky outcrops within the sediment-dominated Poole Bay. The third-party proposal from Dorset Wildlife Trust requests that black bream is added to the site as a feature because the area is used between April and July as a nesting ground for by the species. Figure 8 shows the proposed boundary of the third-party proposed MCZ, and Figure 9 shows the third-party proposed MCZ in the wider context of other local marine protected areas.
Proposed protected features	Nesting black bream (*Spondyliosoma cantharus*)
Aim of the MCZ in relation to conserving highly mobile species:	Protection for nesting black bream during the nesting season (April to early July). Nesting black bream are proposed as an additional feature to the existing Poole Rocks MCZ. This extends the range of sites protecting nesting black bream from only Sussex previously, to Dorset.
Summary of ecological significance of the site for the conservation of highly mobile species	Only one site in the UK is currently designated to protect nesting black bream, at Kingmere MCZ in Sussex. Black bream are summer visitors to the south and west coasts of the UK, overwintering in deeper waters and migrating inshore to breed (Collins and Mallinson 2012). Fish spawning aggregations and nursery habitats are the two most critical aspects in the lifecycle of most fish species. Unusually, the black bream nest on flat boulders with mixed sediment in this site away from rocky outcrops. Unlike most other finfish that visit British waters to breed, the black bream exhibit highly selective 'nesting behaviour' (Pawson, 1995). This unique characteristic makes this species highly vulnerable during the breeding period of their life cycle. This is one of three sites on the Dorset coast known for nesting black bream. There is a good range and quality of data showing that bream persistently use this site as a nesting ground.
Overview of supporting data	**Colenutt, A & Evans, J** Poole Rocks MCZ Post-Survey Site Report. - [s.l.]. DEFRA, 2015. **Collins, K. J. & Mallinson, J. J.** Surveying black bream, *Spondyliosoma cantharus* (L.), nesting sites using sidescan sonar. Underwater Technology Vol 30 No.4. 2012. pp. 183-188. **Dapling, T *et al*.** Monitoring the movements of the black sea bream (*Spondyliosoma cantharus*, L.) utilising Kingmere Marine Conservation Zone as a Spawning Site. 2016. **Doggett, M., & Openshaw, M.** The Black seabream Project.

	Revealing the secrets of black seabream breeding behaviour off the Dorset coast. 2015. http://www.mattdoggett.com/the-black-bream-project/ **James *et al.*** The South Coast Regional Environmental Characterisation. *British Geological Survey Open Report* OR/09/51. 2010 **James *et. al*.** The MALSF synthesis study in the central and eastern English Channel. *British Geological Survey Open Report (OR/11/01).* 2011 **Seasearch** SCUBA diving reports 2010-2016 as described in Dorset Wildlife Trust's mobile species proposal. 2016. **Southern IFCA** Black Bream Status Report [Report]. 2016. **Southern IFCA** *pers. comm.* 2016
Proposed General Management Approach (GMA)	Recover to favourable condition

5.4.2 Site maps



Point	Lat	Long
A	50° 41' 43.832" N	1° 53' 56.942" W
B	50° 41' 43.942" N	1° 52' 22.266" W
C	50° 40' 38.769" N	1° 52' 22.096" W
D	50° 40' 38.727" N	1° 53' 56.854" W

Figure 8 Map showing the boundary for Poole Rocks MCZ

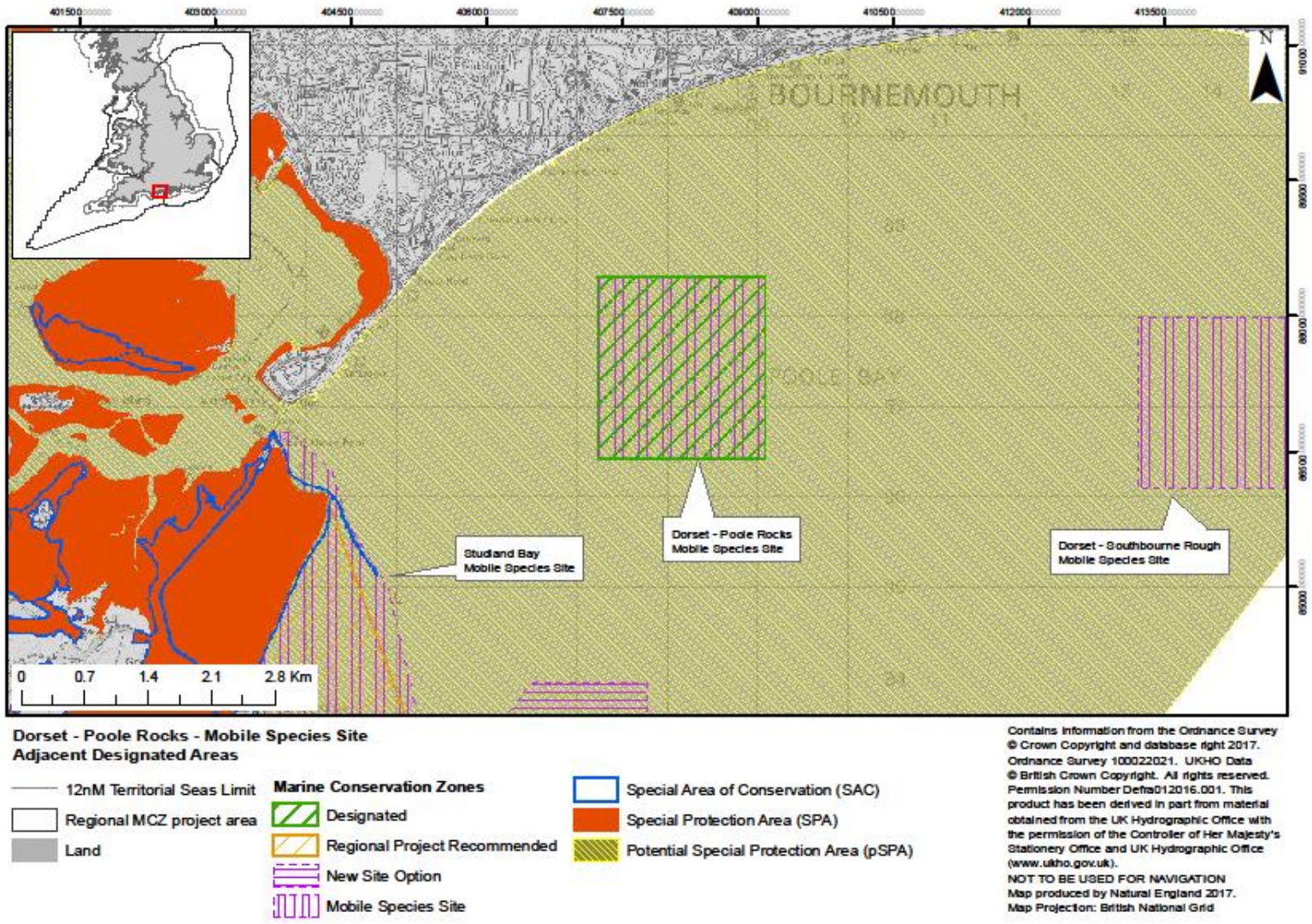


Figure 9 Map showing Poole Rocks MCZ in the context of other designations within and around the MPA

5.4.3 Summary of Natural England's Pre-Consultation Advice

Ecological significance

Table 11 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting black bream	**High** There is high quality evidence that identifies the location of nests throughout the sites. The side scan evidence is relatively recent (Collins & Mallinson 2012). Side scan is a recognised technique for the identification of bream nests.	**High**	**High** Southern Inshore Fisheries and Conservation Authority (Southern IFCA) side scan surveys were unsuccessful in identifying any further nest assemblages due to rough sea conditions affecting the quality of the data collected. However Southern IFCA have provided the location of angling marks which occur both inside and just outside the existing MCZ boundary where bream are targeted by anglers. These marks may indicate the presence of further nesting sites. There is good quality evidence that identifies the location of nests within the Poole Rocks MCZ, highlighting the site's ecological significance as a nesting ground for bream. The side scan sonar data was collected in 2010 (James *et al.* 2010; James *et al.* 2011; Collins & Mallinson 2012); so is relatively recent. SCUBA diving surveys have recorded nests at the site since 2010. Observations since 2012 indicate the site is regularly targeted by recreational anglers during the nesting season (Collins & Mallinson 2012; Southern IFCA *pers. comm*. 2016b).

Persistence

Table 12 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting black bream	**High** Evidence for persistence within these areas is good. The use of different data types; side scan, commercial and recreational catches and observation by divers and of recreational fishing vessels on the sites provide a clear indication of persistence across the sites.	**High**	**High** Side scan sonar, SCUBA diving surveys, and evidence of recreational sea anglers targeting the site indicate the persistent use of this site by nesting bream over at least a 7 year period between 2010 and 2016 (Collins & Mallinson 2012; Dorset Wildlife Trust mobile species proposal 2016; Southern IFCA, *pers. comm.* 2016b).

Site size and delineation

Table 13 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting Black bream	**High** The area suggested is appropriate at this point in time. The site could be extended following further survey data that indicates significant numbers of nests outside of the current MCZ boundary.	**High**	**High** Southern IFCA side scan sonar surveys were not successful in providing evidence of nesting sites outside the current boundary so the original MCZ boundary is assessed as proposed by Dorset Wildlife Trust. The existing MCZ boundary encompasses most of the nesting sites identified through side scan sonar and diving surveys (Collins & Mallinson 2012; James *et al.* 2010; James *et al*. 2011; Dorset Wildlife Trust mobile species proposal 2016) and is therefore deemed appropriate to ensure the viability of the site for nesting bream. Southern IFCA have suggested there are likely to be further nesting areas to the east of the current boundary (Southern IFCA *pers. comm.* 2016b). Additional survey work may identify further nesting grounds outside the current boundary.

Appropriateness of Management

Table 14 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting Black bream	**Moderate**	**Moderate**	**Moderate**

General Management Approach

Table 15 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Activities that have influenced the GMA
Black bream (nesting)	Recover to favourable condition	Recover due to fishing activities such as anchored nets and lines (includes angling from an anchored boat) and demersal trawling. For further information on activities/pressures which may be of concern in the future if impact increases please see below.

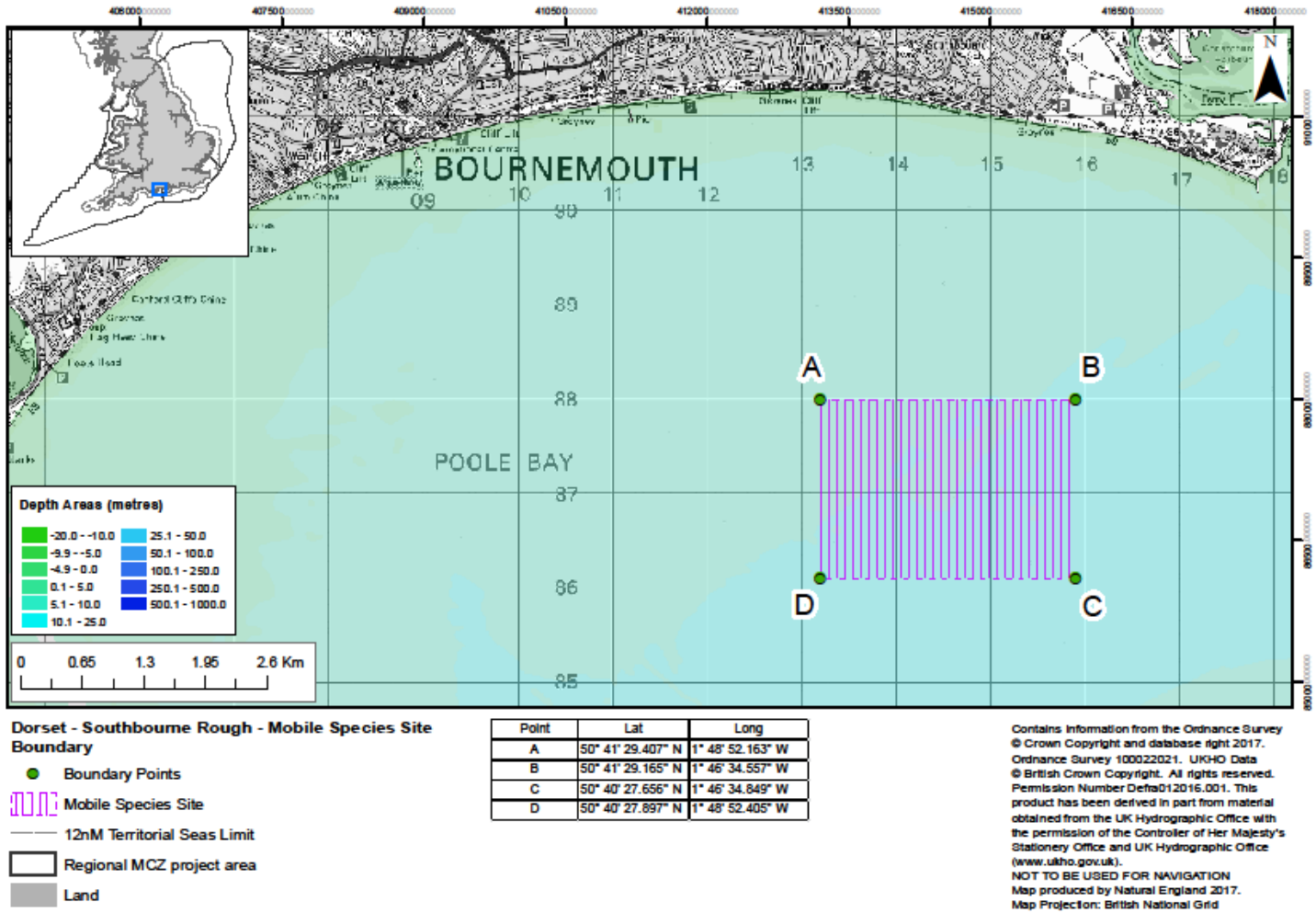
5.5 Southbourne Rough

5.5.1 Site summary

Site Name:	Southbourne Rough
Site description:	*Information sourced from the original third-party proposal* The site is located in an area of patch reefs to the east of Poole Rocks in Poole Bay, slightly further offshore and deeper than Poole Rocks. The area is used between April and early July as a nesting ground for the black bream. Figure 10 shows the proposed boundary of the third-party proposed MCZ, and Figure 11 shows the third-party proposed MCZ in the wider context of other local marine protected areas.
Proposed protected features	Nesting black bream (*Spondyliosoma cantharus*)
Aim of the MCZ in relation to conserving highly mobile species:	Protection for nesting black bream during the nesting season (April to early July). This extends the range of sites protecting nesting black bream from only Sussex previously, to Dorset.
Summary of ecological significance of the site for the conservation of highly mobile species	Only one site in the UK is currently designated to protect nesting black bream at Kingmere MCZ in Sussex. Black bream are summer visitors to the south and west coasts of the UK, overwintering in deeper waters and migrating inshore to breed (Collins & Mallinson 2012). Fish spawning aggregations and nursery habitats are the two most critical aspects in the lifecycle of most fish species. Unlike most other finfish that visit British waters to breed, black bream exhibit highly selective 'nesting behaviour' (Pawson 1995). This unique characteristic makes this species highly vulnerable during the breeding period of their life cycle. This is one of three sites on the Dorset coast known for nesting black bream. This site was first studied for nesting black bream in 1990 (Collins & Mallinson 2012) and observations suggest nesting black bream have persisted at the site between 1990 and 2014.
Overview of supporting data	**Collins, K.** Dorset marine habitat surveys: maerl, worm reefs, bream nests, sea fans and brittlestars, 2003 survey results. Report to Dorset Wildlife Trust and English Nature. 2003 15pp. **Collins, K. J. & Mallinson, J. J.** Surveying black bream, *Spondyliosoma cantharus* (L.), nesting sites using sidescan sonar. Underwater Technology Vol 30 No.4. 2012. pp.183-188. **Dapling, Tim [*et al.*]** Monitoring the Movements of the Black Sea Bream (*Spondyliosoma cantharus*, L.) utilising Kingmere Marine Conservation Zone as a Spawning Site. 2016. **Doggett, M. & Openshaw, M.** The Black seabream Project. Revealing the secrets of black seabream breeding behaviour off the Dorset coast. 2015. http://www.mattdoggett.com/the-black-bream-project/ **Mike Markey** (charter boat operator). *Pers. comm*. 2016. Seasearch

	SCUBA diving reports 2010-2016 as described in Dorset Wildlife Trust's mobile species proposal, 2016. **Southern IFCA** Black bream Status Report [Report]. 2016.
Proposed General Management Approach (GMA)	Recover to favourable condition

5.5.2 Site maps



Point	Lat	Long
A	50° 41' 29.407" N	1° 48' 52.163" W
B	50° 41' 29.165" N	1° 46' 34.557" W
C	50° 40' 27.656" N	1° 46' 34.849" W
D	50° 40' 27.897" N	1° 48' 52.405" W

Figure 10 Map showing the suggested boundary for Southbourne Rough MCZ mobile species site

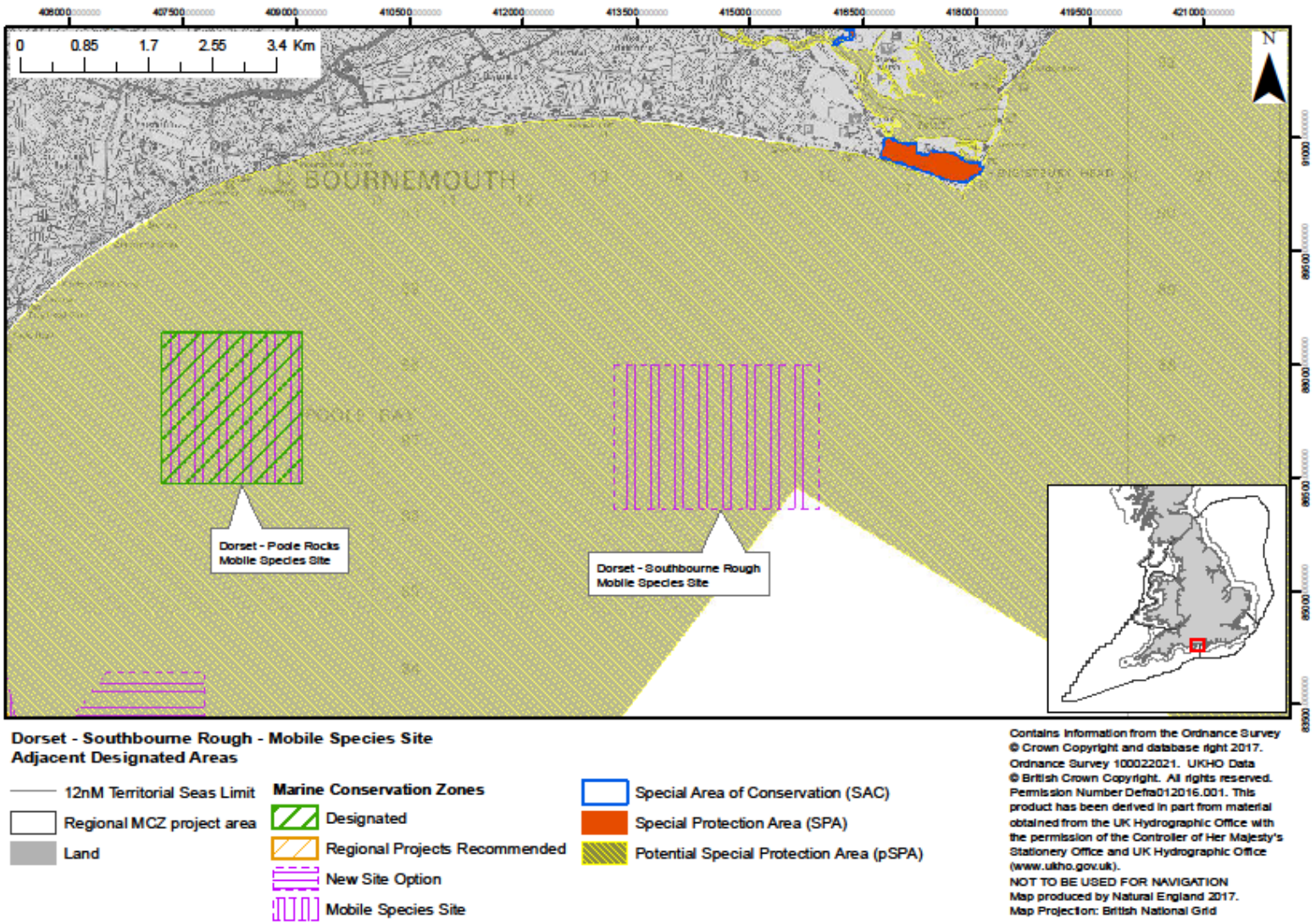


Figure 11 Map showing Southbourne Rough MCZ in the context of other designations within and around the MPA

5.5.3 Summary of Natural England's Pre-Consultation Advice

Ecological significance

Table 16 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting black bream	**Moderate** Side scan sonar evidence of nests in centre of site as well as records of nests in similar location from diving surveys in 1990 and more recent Seasearch survey. No evidence of nests occurring in other parts of site, although supporting habitat is present and boundary has been drawn to incorporate supporting reef habitat.	**Moderate**	**Moderate**

Persistence

Table 17 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting black bream	**High** The use of different data types; side scan, commercial and recreational catches and observation by divers and of recreational fishing vessels in the sites provide a clear indication of persistence across the sites.	**High**	**High** Side-scan and diving surveys and reports of recreational fishing activity show nesting bream have been present at this site from 1990-2014 (Collins & Mallinson 2012; Dorset Wildlife Trust mobile species proposal 2016; Markey *pers. comm*. 2016).

Site size and delineation

Table 18 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting black bream	**Moderate** The proposed area is drawn to protect the majority of the rocky area. It is unclear how this relates to nest coverage	**Moderate**	**Moderate** Nest assemblies identified through side scan sonar and diving observations occur at the centre of the site on reef habitat (Collins & Mallinson 2012; Dorset Wildlife Trust mobile species proposal 2016). No further evidence of nests within other parts of the site currently exist, although the reef habitat which extends beyond the centre of the site could support further nesting areas.

Appropriateness of Management

Table 19 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting black bream	**Moderate**	**Moderate**	**Moderate**

General Management Approach

Table 20 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Activities that have influenced the GMA
Nesting black bream	Recover to favourable condition	Recover due to fishing activities such as anchored nets and lines (includes angling from an anchored boat) and demersal trawling. For further information on activities/pressures which may be of concern in the future if impact increases please see below.

5.6 Bideford to Foreland Point

5.6.1 Site summary

Site Name:	Bideford to Foreland Point
Site description:	*Information sourced from the original third-party proposal* The West Exmoor Coast SSSI is notified for common guillemot and razorbill which form 1.2% and 6% of England's population respectively. The Finding Sanctuary regional MCZ project recommended the inclusion of common guillemot and razorbill as features for the Bideford to Foreland Point rMCZ. These seabird features (together with grey seals and harbour porpoise) were highlighted for their importance by stakeholders in North Devon. Overall common guillemot and razorbill are both increasing within this designation, although cliff sites show a variation, with some populations declining and others increasing rapidly. The designation of these species within this boundary would ensure that these species are properly monitored and any threats managed as appropriate. This site was designated as an MCZ in January 2016 for a variety of broad scale habitats, and FOCI including S*abelleria alveolata* reef and pink sea fans. West Exmoor Coast and Woods SSSI is notified for common guillemot and razorbill, noting that this is the best mainland site in north Devon for this species. Figure 12 shows the suggested boundary of the third-party proposed MCZ, and Figure 13 shows the third-party proposed MCZ in the wider context of other local marine protected areas.
Proposed protected features	Common guillemot (*Uria aalge*) Razorbill (*Alca torda*)
Aim of the MCZ in relation to conserving highly mobile species:	Addition of two new features to the proposed MCZ (Bideford to Foreland Point) and inclusion within the MCZ boundary of a one kilometre 'generic maintenance extension' extending offshore around the existing coastal SSSI (West Exmoor Coast and Woods SSSI) in which the birds nest in order to afford site-based protection within the sea area considered most likely to support maintenance activities of its features.
Summary of ecological significance of the site for the conservation of highly mobile species	West Exmoor Coast and Woods colony is an important breeding seabird colony, and has been for some time. The numbers of birds it currently supports means it is the 6th most important site in England for common guillemots and 3rd most important site in England for razorbills. This is based on recent and reliable count data and indicates that in an English context, this site is of considerable ecological significance to both species. Waters within one kilometre of colonies of breeding common guillemot and razorbill have been recognised, in the context of

	considering marine extensions to Special Protection Areas, to be of high ecological significance to the birds breeding at that colony by virtue of these being the areas within which the birds carry out critical 'active maintenance behaviours'. The same conclusion regarding the ecological significance of such waters to birds nesting within colonies is equally valid when considering colonies within SSSIs too.
Overview of supporting data	Six counts of nesting birds at the West Exmoor Coast and Woods colony in five of the last six decades showing increasing numbers of common guillemots and variable numbers of razorbills. Colony counts placed in the context of counts at all English seabird colonies in Seabird 2000 national census and in context of more recent counts where available. Use of waters within one kilometre of colony based on evidence provided in published JNCC reports demonstrating the generality of the significance of use of such waters across all auk colonies.
Proposed General Management Approach (GMA)	Maintain in favourable condition

5.6.2 Site maps

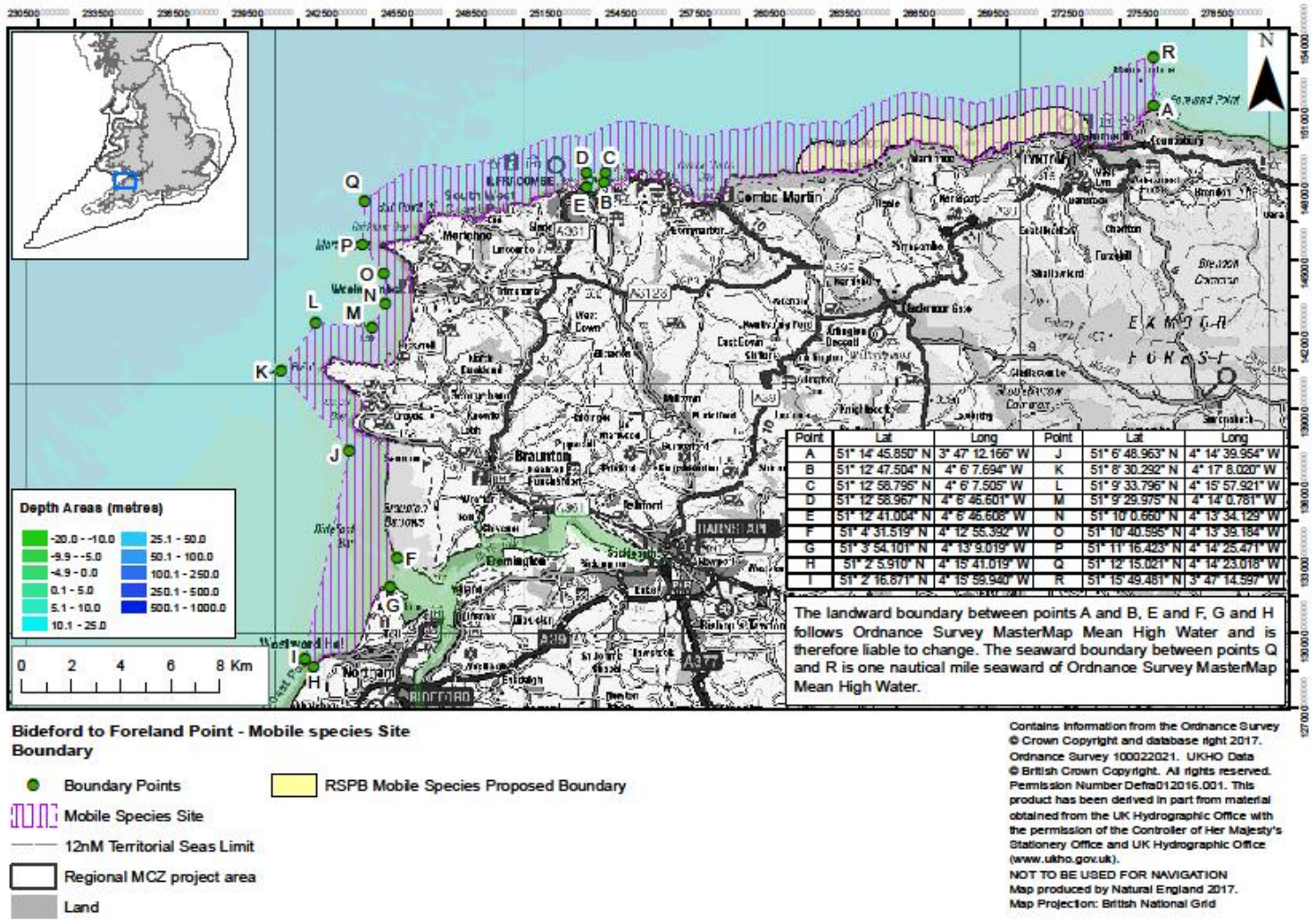


Figure 12 Map showing the suggested boundary for Bideford to Foreland Point MCZ

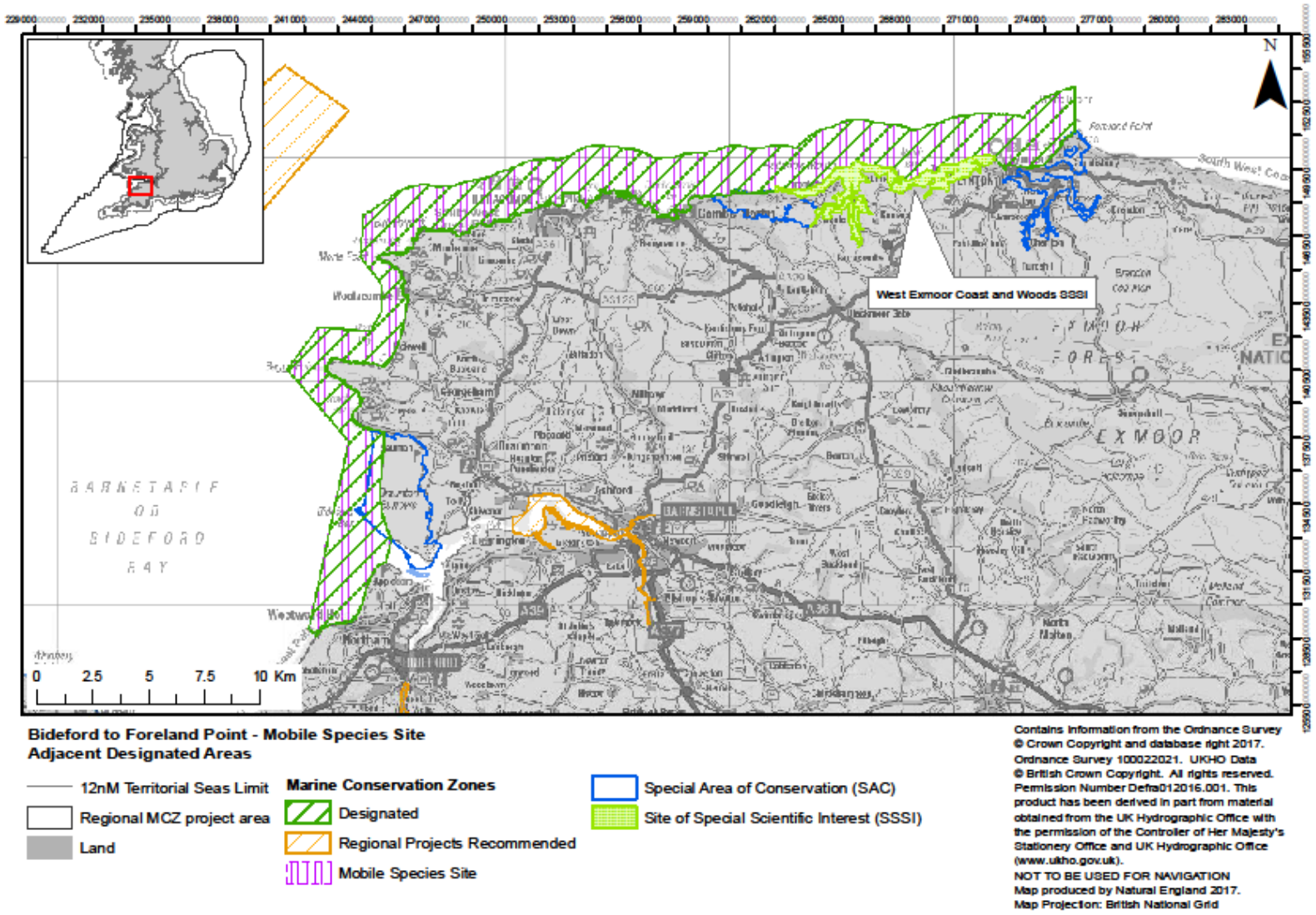


Figure 13 Map showing Bideford to Foreland Point MCZ in the context of other designations within and around the MPA

5.6.3 Summary of Natural England's Pre-Consultation Advice

Ecological significance

Table 21 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	**Moderate** (in terms of site-specific evidence)	**Moderate**	**High** Historical count data from 1960s-1990s have confirmed the long-term significance of the numbers of this feature within the SSSI colony which this MCZ seeks to protect at sea. A re-consideration of recent count data in comparison with that from other sites in England (Annex 6 in the Advice Overview document) shows the breeding colony at West Exmoor Coast and Woods SSSI to have been the fifth most important colony for common guillemot at the time of last national census (Seabird 2000) and, based on more recent count data where available, to be the sixth most important colony in England now. It is the third most important site for common guillemot within the Regional MCZ Project Area. Work by JNCC has clearly demonstrated the persistent use by breeding auks of waters within one kilometre of their colonies for conducting critical "active maintenance behaviour" and that this is a consistent pattern across colonies.
Razorbill	**Moderate** (in terms of site-specific evidence)	**Moderate**	**High** Historical count data from 1960s-1990s have confirmed the long-term significance of the numbers of this feature within the SSSI colony which this MCZ seeks to protect at sea. A re-consideration of recent count data in comparison with that from other sites in England (Annex 6 in the Advice Overview document) shows the breeding colony at West Exmoor Coast and Woods SSSI to have been the sixth most important colony for razorbill at the time of last national census (Seabird 2000) and, based on more recent count data where available, to be the third most important colony in England now. It is the second most important site for razorbill within the Regional

			MCZ Project Area. Work by JNCC has clearly demonstrated the persistent use by breeding auks of waters within one kilometre of their colonies for conducting critical 'active maintenance behaviour' and that this is a consistent pattern across colonies.

Persistence

Table 22 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	**Moderate** (site specific), **High** (generic)	**High**	**High** A review of historical data has confirmed the persistence of the presence of common guillemot at the main source colony (West Exmoor Coast and Woods) since at least the 1960s with a general increasing trend in numbers since then. Seabird 2000 census data indicates that this colony was the 5th most important common guillemot colony in England at that time. More recent count data from the colony in comparison with more recent count data from other English colonies (where available) show that this colony has maintained its importance and is now the 6th (or 5th if Flamborough and Filey considered as one) most important site in England. Work by JNCC has clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.
Razorbill	**Moderate** (site specific), **High** (generic)	**High**	**High** A review of historical data has confirmed the persistence of the presence of Razorbill at the main source colony (West Exmoor Coast and Woods) since at least the 1960s. Seabird 2000 census data indicates that this

			colony was the 6th most important razorbill colony in England at that time. More recent count data from the colony in comparison with more recent count data from other English colonies (where available) show that this colony has increased its importance and is now the 3rd most important site in England. Work by JNCC has clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.

Site size and delineation

Table 23 Summary of scoring for Principle 3 Site size and delineation

Species proposed	**Original score (Aug 2016)**	**Potential score (Aug 2016)**	**Updated score (taking into account further evidence review, Feb 2017)**
Common guillemot	**Moderate** (site specific). **High** (generic) (though Ecological Network Guidance principles re boundary setting not applied).	**High**	**High** Work by JNCC has clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.
Razorbill	**Moderate** (site specific). **High** (generic) (though Ecological Network Guidance principles re boundary setting not applied).	**High**	**High** Work by JNCC has clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.

Appropriateness of Management

Table 24 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	**Not met**	**Moderate**	**Moderate** Additional site specific evidence has been provided of potentially impacting activities occurring within the proposed area and any relevant management measures currently in place.
Razorbill	**Not met**	**Moderate**	**Moderate** Additional site specific evidence has been provided of potentially impacting activities occurring within the proposed area and any relevant management measures currently in place.

General Management Approach

Table 25 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Activities that have influenced the GMA
Common guillemot	Maintain in favourable condition	A maintain GMA has been proposed due to SSSI condition assessment of 'favourable condition' for the same population of birds. For further information on activities/pressures which may be of concern in the future if impact increases please see below.
Razorbill	Maintain in favourable condition	A maintain GMA has been proposed due to SSSI condition assessment of 'favourable condition' for the same population of birds. For further information on activities/pressures which may be of concern in the future if impact increases please see below.

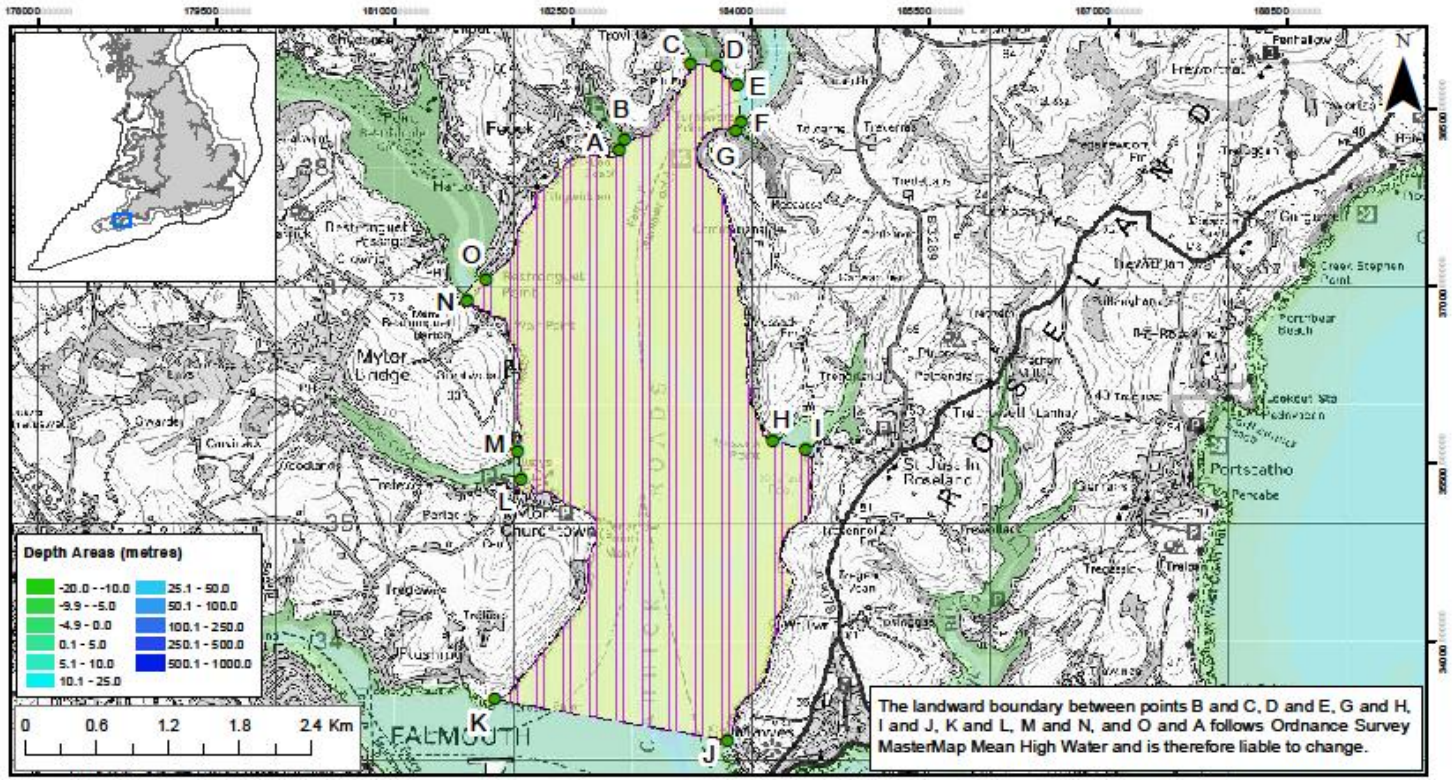
5.7 Carrick Roads

5.7.1 Site summary

Site Name:	Carrick Roads
Site description:	*Information sourced from the original third-party proposal* Carrick Roads 'traditionally holds one of the largest flocks of wintering black-necked grebes in the UK'. Numbers in 2011-2012 (WeBS) of 52 are for the whole of the Fal complex and do not specify whether they are Carrick Roads. The population percentage is based on a UK population of 130 (Musgrove *et al.* 2013), although almost all the population winters and breeds in England. The population dipped from 32 to 17 between 2009-2010 and 2010-2011, but generally shows a steady increase in numbers over the last eight years. The inshore seabird review for SEA 6, 7 and 8 shows data between 1997 and 2003 and provides a mean of 37 (for the most recent five years) for the Fal complex. The black-necked grebe is not a feature of the pSPA and there has been an agreement since 2001 that aggregations of black-necked grebe are not recognised under SPA designations. This species sits within the pSPA for great northern diver, black-throated diver and Slavonian grebe. However, this site is nationally important for this species, and is susceptible to disturbance in winter from recreational and commercial users. Therefore, the inclusion of this species within an MCZ is recommended. This species is very sensitive to human disturbance (Martin and Smith 2004) during breeding and would benefit from monitoring and measures to ensure it has a higher level of protection in a busy estuarine site. Figure 14 shows the suggested boundary of the third-party proposed MCZ, and Figure 15 shows the third-party proposed MCZ in the wider context of other local marine protected areas. The third-party proposed Carrick Roads MCZ also overlaps the Fal and Helford Estuaries new site option. Therefore whilst each site is a potential Tranche 3 MCZ in its own right, should both be designated they would need to be combined as one site to avoid overlapping MCZ designations.
Proposed protected features	Black-necked grebe (*Podiceps nigricollis*)
Aim of the MCZ in relation to conserving highly mobile species:	New site with one feature black-necked grebe (that would overlap a small part of the Falmouth Bay to St Austell Bay pSPA of which black-necked grebe is not a feature).
Summary of ecological significance of the site for the conservation of highly mobile species	There is no site-based protection for wintering black-necked grebe within the SPA network in the UK. Wetland Bird Survey (WeBS) counts and other independent data sources indicate that, over the most recent years for which data are available, Carrick Roads holds the highest average overwinter peak number of this species in England and across the UK as a whole. This is based on recent and

	reliable count data and indicates that, in a national context, this site is of considerable ecological significance to the species.
Overview of supporting data	Published reviews of historical count data from the 1980s and 1990s together with: recent count records from Wetland Bird Survey (WeBS) online database; from local recorders from 1995 onwards, and other bespoke surveys of bird distribution in and around the Fal complex confirm the importance of the site in a local, regional and national context and the appropriateness of the proposed site boundaries.
Proposed General Management Approach (GMA)	Maintain in favourable condition

5.7.2 Site maps



Point	Lat	Long	Point	Lat	Long
A	50° 12' 12.542" N	5° 2' 37.702" W	I	50° 10' 52.887" N	5° 1' 13.685" W
B	50° 12' 15.616" N	5° 2' 35.655" W	J	50° 9' 32.407" N	5° 1' 41.940" W
C	50° 12' 36.836" N	5° 2' 9.264" W	K	50° 9' 41.032" N	5° 3' 21.165" W
D	50° 12' 36.561" N	5° 1' 58.020" W	L	50° 10' 41.526" N	5° 3' 13.572" W
E	50° 12' 31.622" N	5° 1' 49.238" W	M	50° 10' 49.169" N	5° 3' 15.492" W
F	50° 12' 21.545" N	5° 1' 46.806" W	N	50° 11' 29.768" N	5° 3' 39.677" W
G	50° 12' 19.108" N	5° 1' 48.726" W	O	50° 11' 35.721" N	5° 3' 32.107" W
H	50° 10' 54.877" N	5° 1' 28.045" W			

Figure 14 Map showing the suggested boundary for Carrick Roads MCZ mobile species site

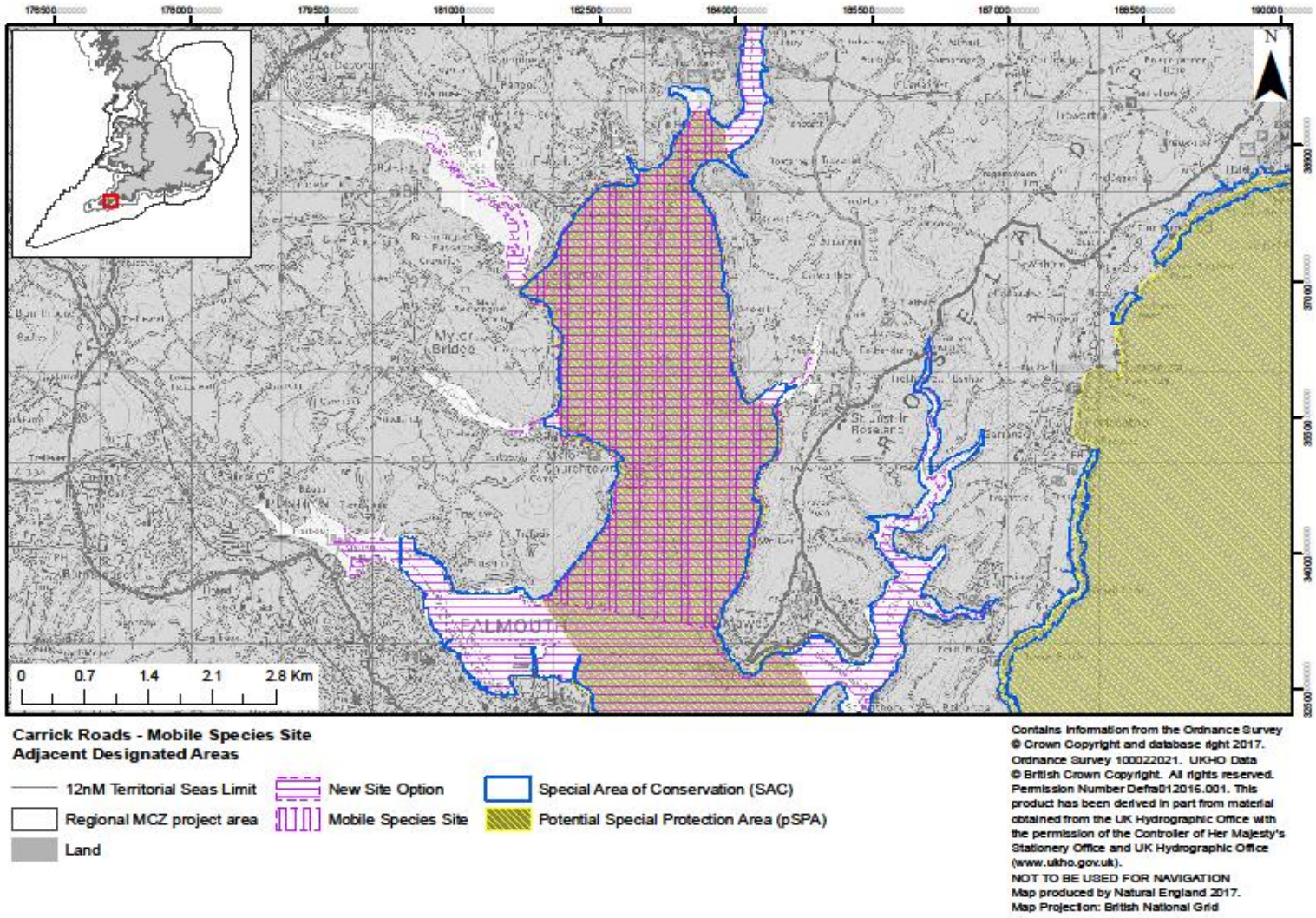


Figure 15 Map showing Carrick Roads MCZ in the context of other designations within and around the MPA

5.7.3 Summary of Natural England's Pre-Consultation Advice

Ecological significance

Table 26 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**High**	**High**	**High** Additional independent count data have confirmed the regular and continuing presence of the species in numbers that confirm the site's position as the most important wintering site for the species in England and the UK.

Persistence

Table 27 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**High**	**High**	**High** Additional independent count data have confirmed the long-term, regular and continuing presence of the species in numbers that confirm the site's position as the most important in England and the UK. Examination of local count records and surveys confirm the persistent presence of greater numbers of the feature inside the site than outside it.

Site size and delineation

Table 28 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**Moderate**	**High**	**High** A collation of county birds records since 2004/5, and the results of two independent systematic surveys of Black-necked grebe distribution, coupled with data on the distribution of a key supporting habitat, confirms the validity of the size and delineation of the site.

Appropriateness of Management

Table 29 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**Low**	**Moderate**	**Moderate**

General Management Approach

Table 30 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Main issue(s) in relation to this GMA
Black-necked grebe	Maintain in favourable condition	Commercial and recreational vessel movements, shore based activities and anchoring causing disturbance pressures

5.8 Coquet to St Mary's and Coquet to Berwick

5.8.1 Site summary

Site Name:	Coquet to St Mary's (third-party proposed) and suggested larger amended site option with northern extension ('Coquet to Berwick')
Site description:	*Information sourced from the original third-party proposal* The Coquet to St Mary's MCZ was designated in January 2016. The existing MCZ is an inshore site located along the Northumberland coast in the north east of England. The site covers 192 km² of intertidal and offshore waters from near Whitley Bay in the south to near Alnwick in the north. It includes areas around St Mary's Island and Coquet Island (Figure 16). This site helps protects several different types of rock and sediment on the shoreline and on the seabed, however when it was designated it did not include avi-fauna FOCI, which are present at this site in nationally important numbers. Coquet Island has international importance for breeding seabirds during late March until mid-September and proposed and existing SPAs offer protection to a number of species on land and at sea. However, despite efforts by the RSPB to see the inclusion of breeding common eider in the proposed Northumbria Marine pSPA, Natural England have suggested that this species cannot be included as a feature of an SPA. Therefore MCZ designation offers the best available tool to protect this internationally important population at sea. Furthermore, wintering common eider occur at this site in nationally important numbers and are therefore also recommended for inclusion in the MCZ. This species is very sensitive to human disturbance and would benefit from monitoring and measures to ensure it has a higher level of protection at this site. The marine waters north of the proposed MCZ support large numbers of both breeding and non-breeding common eider. Natural England suggests consideration of an extended boundary option, wider than the current boundary of the MCZ, to include the marine waters surrounding the Farne Islands and Lindisfarne, based on evidence provided by Wetland Bird Survey (WeBS), Non-estuarine Waterbird Survey (NEWS) and breeding colony data and other reports referenced throughout this document. The northern extension (referred to here as 'Coquet to Berwick') suggested by Natural England is shown in Figure 17. Figures 18 and 19 show the proposals in the context of other existing designations within the MPA.
Proposed protected features	Common eider (*Somateria mollissima)*
Aim of the MCZ in relation to conserving highly mobile species:	Original proposal by RSPB: Addition of breeding and non-breeding common eider as features to the existing Coquet to St Mary's MCZ. Suggested larger amended site, with northern extension ('Coquet to Berwick'): Addition of northern extension along coast to Berwick-upon-Tweed to existing Coquet to St Mary's for additional features of

	breeding and non-breeding common eider.
Summary of ecological significance of the site for the conservation of highly mobile species	Common eider is not considered to be a migratory species during the breeding season, and is not listed on Annex 1 of the Birds Directive. Accordingly, during the breeding season it is not eligible for consideration as a feature of an SPA, and there are no SPAs for this species in this season. The existing Coquet to St Mary's MCZ encompasses Coquet Island, which holds nationally important numbers of breeding common eider. The area also supports regionally and nationally (England) important numbers of common eider in the non-breeding season. The area to the north of the existing Coquet to St Mary's MCZ, which is covered by the suggested northern extension ('Coquet to Berwick'), is equally important for common eider. The northern extension encompasses the Farne Islands common eider breeding site, and these islands together with Coquet Island are the main breeding areas of common eiders on the east coast of England and form the southern limit of regular breeding in the species on the western side of the North Sea (Coulson 2010). This area also regularly supports regionally and nationally (England) important numbers of common eider in the non-breeding season. Together the combined suggested larger site (Coquet to St Mary's MCZ plus northern extension 'Coquet to Berwick') holds 26.21% of the English and 5.72% of the GB non-breeding common eider populations.
Overview of supporting data	For both sites (Coquet to St Mary's MCZ and suggested larger amended site with northern extension 'Coquet to Berwick'): Breeding common eider count data from Farne Islands (1971-2016) and Lindisfarne (2005-2016). Count data from most recent five years (2010/11-2014/15) from WeBS core counts (sourced from the Wetland Bird Survey (WeBS) online database) and for winter 2015/16 Non-estuarine Waterbird Survey (NEWS) (sourced from the BTO) for all sectors located along the stretch of the Northumberland coast from Middlesbrough to Berwick-on-Tweed. Plus additional information from studies on the ecology of common eider at any time of year along the Northumberland coast, eg university student theses.
Proposed General Management Approach (GMA)	Recover to favourable condition

5.9 Site maps

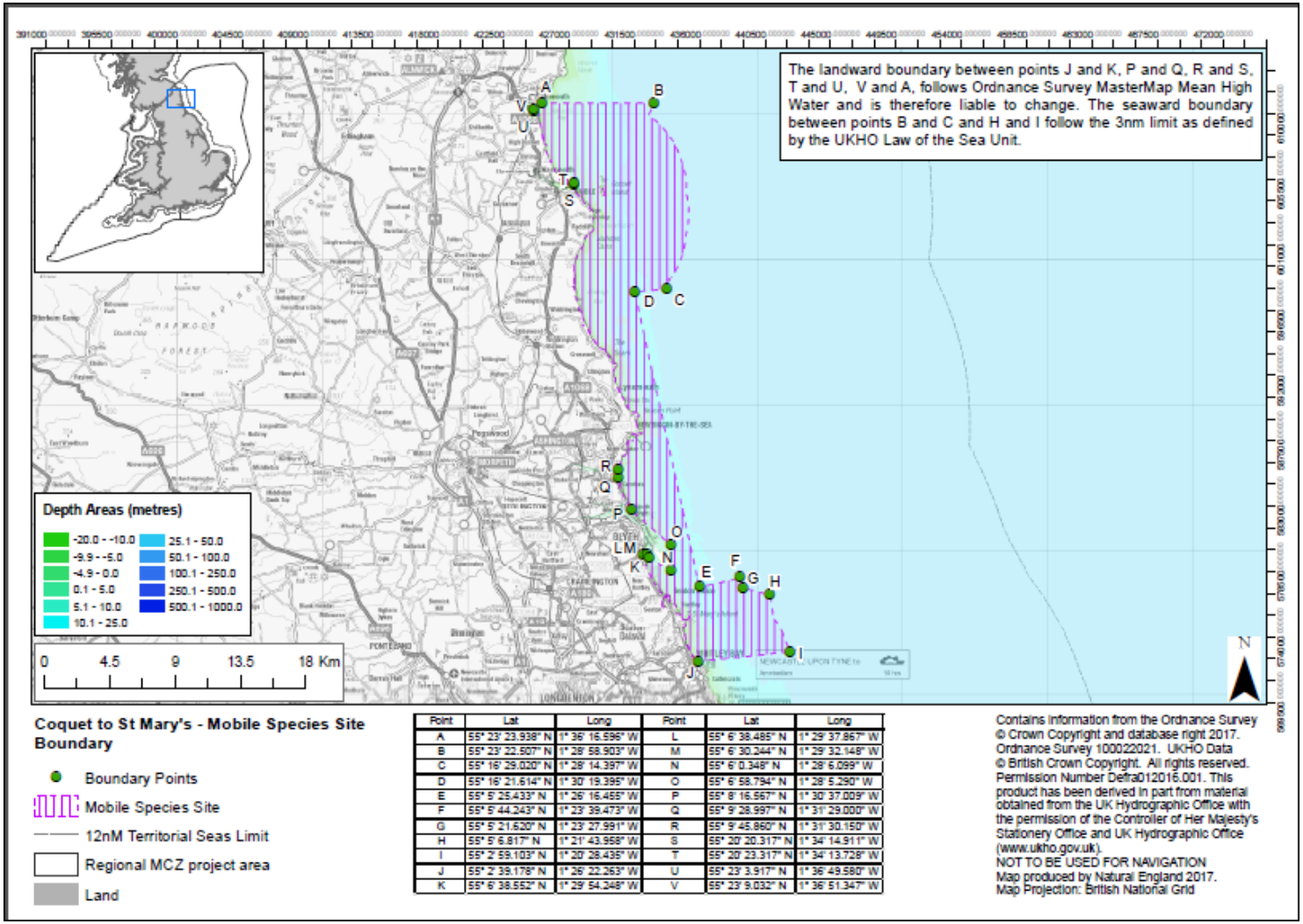


Figure 16 Map showing the suggested boundary for Coquet to St Mary's MCZ (as proposed by RSPB)

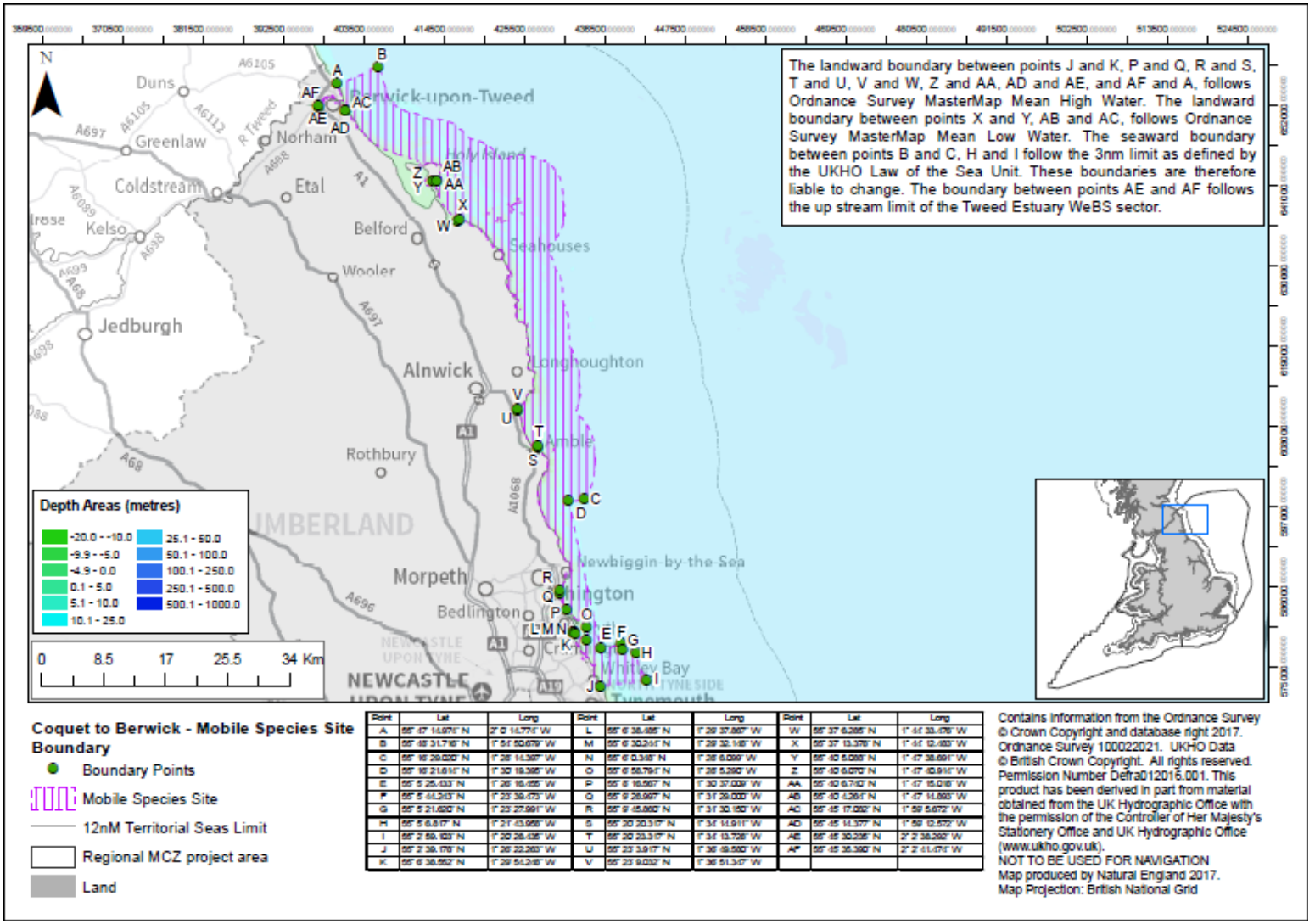


Figure 17 Map showing the boundary of the Natural England suggested northern extension to Coquet to St Mary's MCZ, referred to as 'Coquet to Berwick

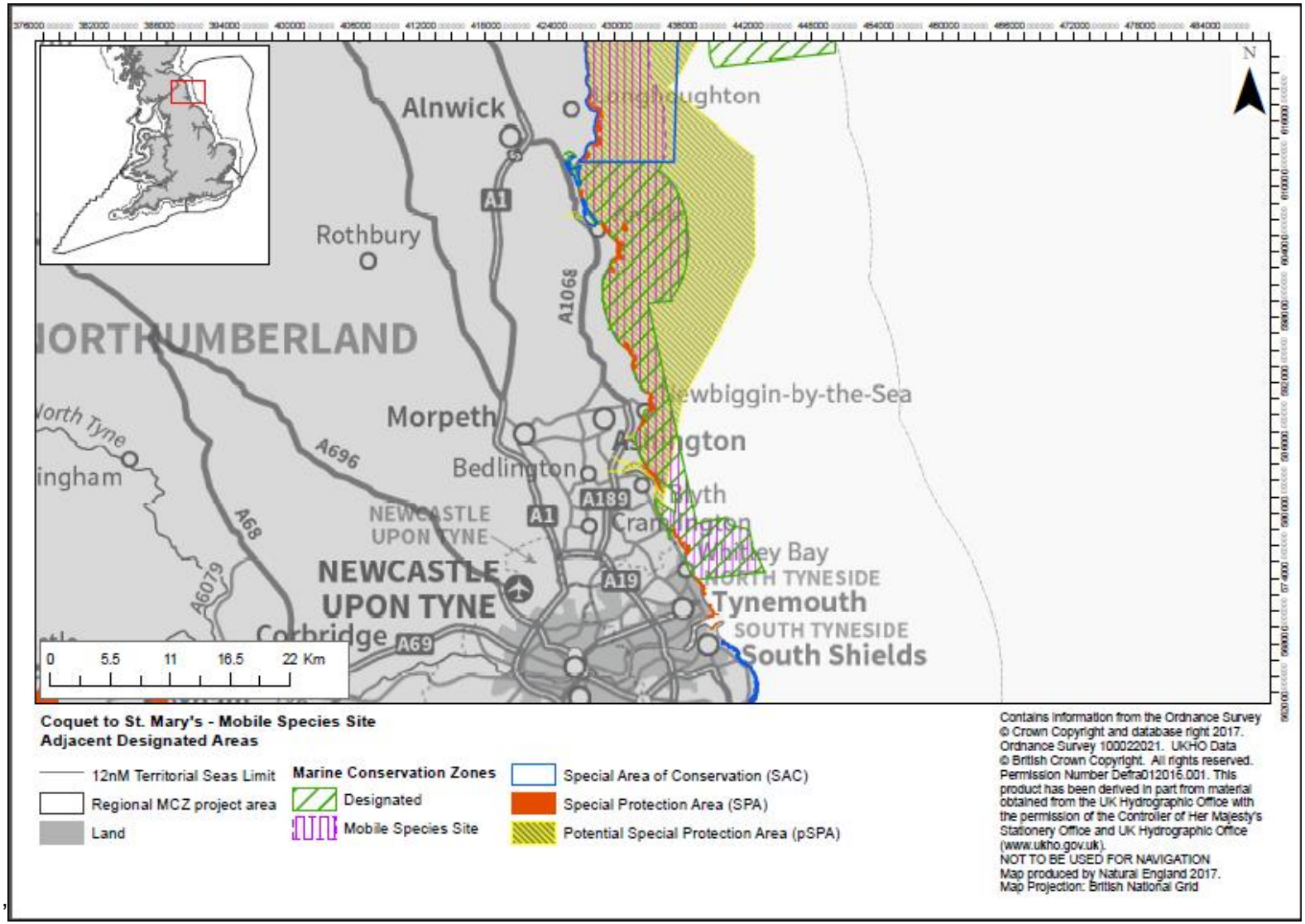


Figure 18 Map showing Coquet to St Mary's MCZ (as proposed by RSPB) in the context of other designations within and around the MPA

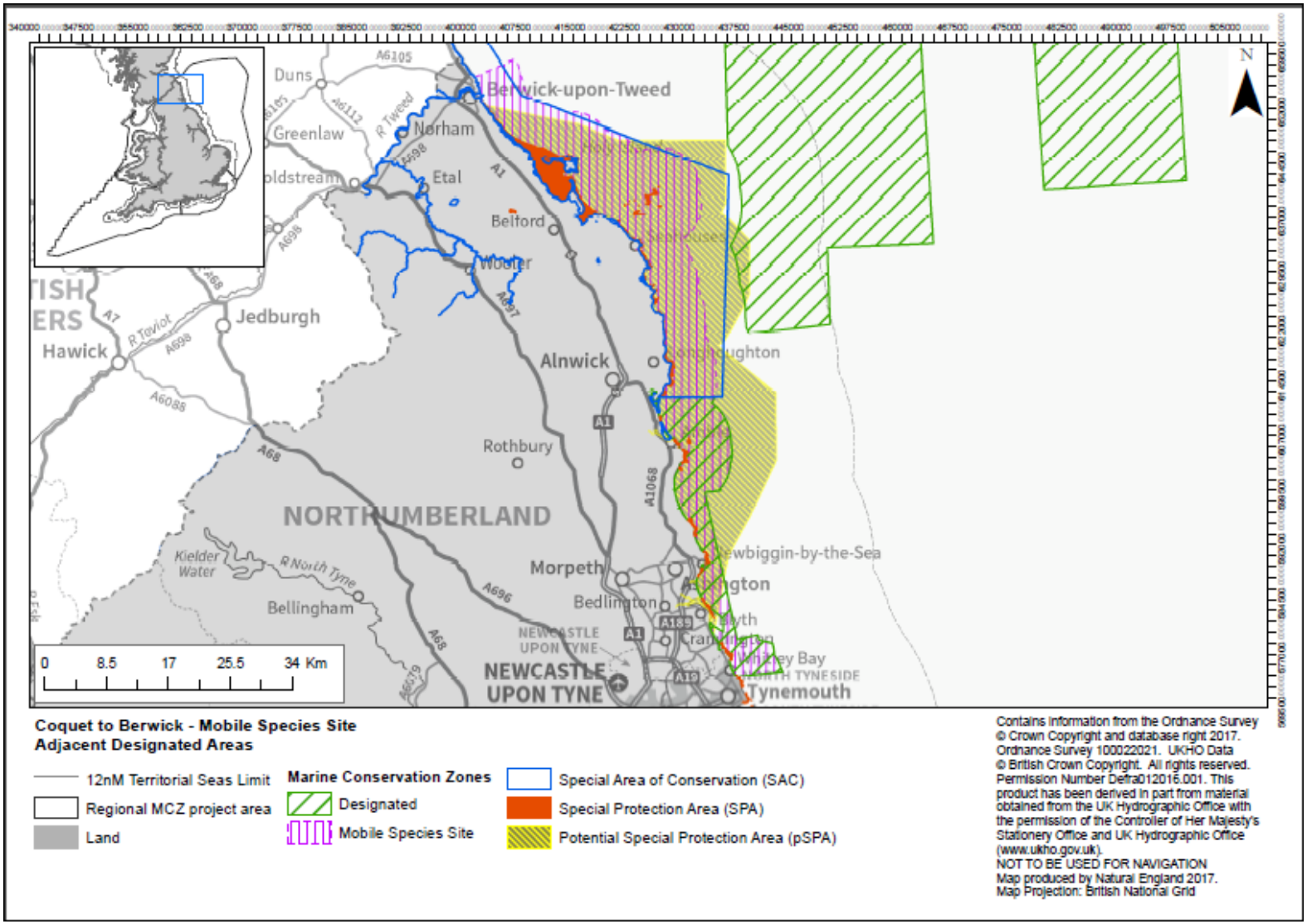


Figure 19 Map showing the Natural England suggested northern extension to Coquet to St Mary's MCZ, referred to as 'Coquet to Berwick', in the context of other designations within and around the MPA

5.9.1 Summary of Natural England's Pre-Consultation Advice

Ecological significance

Table 31 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score	Potential score	Updated score (taking into account further evidence review, Feb 2017)
Common eider	**Moderate**	**High**	Coquet to St Mary's MCZ (as proposed by RSPB): **High** Suggested larger amended site with northern extension ('Coquet to Berwick')**: High** Additional evidence on breeding and non-breeding numbers and on locations used by feeding ducklings and adults has provided evidence on use of areas both within the Coquet to St Mary's site as proposed by RSPB and within the suggested larger amended site with northern extension ('Coquet to Berwick') for breeding and non-breeding activities and for feeding. Both sites are of regional and national (English) importance for both breeding and non-breeding common eider. In terms of adequacy of the network, there is no network for protection of common eider at all in the marine environment at present.

Persistence

Table 32 Summary of scoring for Principle 2 Persistence

Species proposed	Original score	Potential score	Updated score (taking into account further evidence review, Feb 2017)
Common eider	**Low**	**Moderate**	Coquet to St Mary's MCZ (as proposed by RSPB): **Moderate** As although additional evidence obtained suggested evidence for continued persistent presence, as the site supports nationally (England) important numbers (>1% of estimated English non-breeding population) of non-breeding common eider and Coquet Island supports nationally important numbers of breeding common eider, there is a degree of uncertainty due to the numbers of common eider present to the north of the site both in the breeding and non-breeding seasons. Numbers within the site are persistently at higher levels than the waters to the south of

Species proposed	Original score	Potential score	Updated score (taking into account further evidence review, Feb 2017)
			the site and suggested larger numbers are unlikely to be found further out to sea than within the site. Suggested larger amended site with northern extension ('Coquet to Berwick): **High** As the additional evidence indicated, there is continued persistent presence of breeding and non-breeding common eider of regional and national importance in both the breeding and non-breeding seasons and at higher numbers/densities within the suggested larger boundary than within the areas outside of the boundary. This is based on reliable data sources (Wetland Bird Survey, WeBS data, Non-estuarine Waterbird Survey, NEWS data and colony count data from colony managers).

Site size and delineation

Table 33 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score	Potential score	Updated score (taking into account further evidence review, Feb 2017)
Common eider	**Low**	**Moderate**	Coquet to St Mary's MCZ (as proposed by RSPB): **Moderate** As additionally obtained evidence suggested; although the site supports nationally (England) important numbers (>1% of estimated English non-breeding population) of non-breeding common eider and Coquet Island supports nationally important numbers of breeding common eider, there is a degree of uncertainty over the suitability of the size and location of the northern boundary of the site due to the numbers of common eider present to the north of the site both in the breeding and non-breeding seasons. Numbers within the site are persistently at higher levels than the waters to the south of the site and larger numbers are unlikely to be found further out to sea than the current at sea boundary. Suggested larger amended site with northern extension ('Coquet to Berwick'): **High**

Species proposed	Original score	Potential score	Updated score (taking into account further evidence review, Feb 2017)
			As the additional evidence indicates the boundary of the northern extension ('Coquet to Berwick') plus the existing Coquet St Mary's boundary encompasses the area of the Northumberland coast that is of greatest importance for common eider in the breeding and non-breeding season. Numbers within the site are persistently at higher levels than the waters to the south of the site and larger numbers are unlikely to be found further out to sea than the current at sea boundary. This is based on reliable data sources (Wetland Bird Survey, WeBS data, Non-estuarine Waterbird Survey, NEWS data and colony count data from colony managers).

Appropriateness of Management

Table 34 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score	Potential score	Updated score (taking into account further evidence review, Feb 2017)
Common eider	**Not met**	**Moderate**	Coquet to St Mary's MCZ (as proposed by RSPB): **Moderate** Additional advice was obtained from local NIFCA, colony managers and the AONB which suggested fishing activity with regard to bycatch is not a management concern within the site. Recreational actives such as powerboating, sailing and kayaking occur within the MCZ and pose a threat to eider adults and ducklings through visual disturbance, above water noise and collision. These activities are a particular concern around Amble Marina which is located within close proximity to the main breeding site at Coquet Island. Suggested larger amended site with northern extension ('Coquet to Berwick'): **Moderate** Additional evidence indicates there is a wide range of different recreational activities concentrated around tourist 'hotspots' eg Farne Islands and Lindisfarne. Unregulated jet skis are known to occur throughout the site which is a cause for concern with regard to disturbance, collision and potential mortality of eider ducklings. Management is required to ensure recreational activities are managed throughout the site. Additional activities have been identified as a having a potential threat on the eider population and their supporting habitat, these are the oyster aquaculture operation and the construction/maintenance of harbour and port structures within 'Coquet to Berwick'. These activities may result in visual disturbance and loss of feeding and creching habitat.

General Management Approach

Table 35 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Main issue(s) in relation to this GMA
Common eider	Recover to favourable condition	Recreation

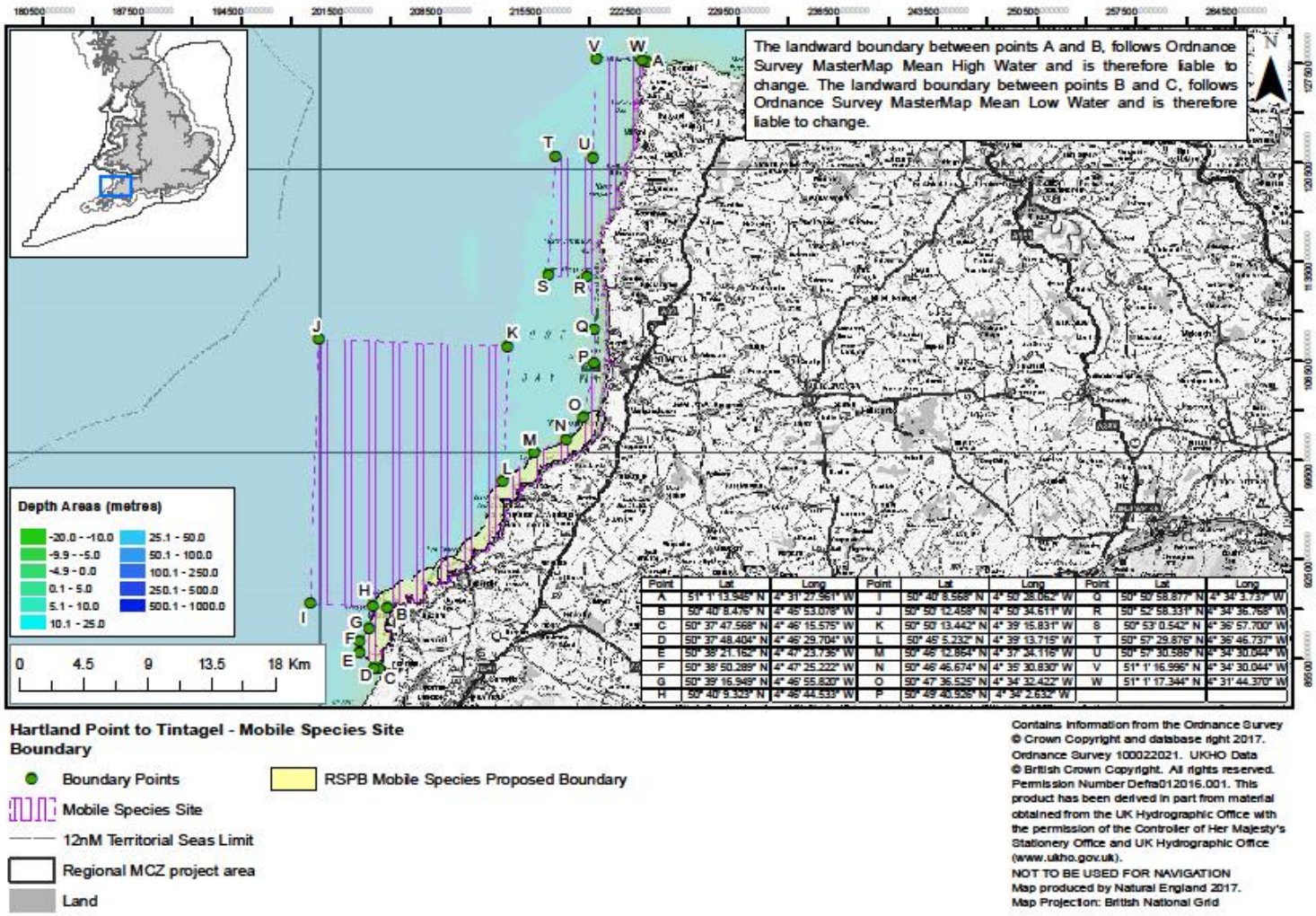
5.10 Hartland to Tintagel

5.10.1 Site summary

Site Name:	Hartland to Tintagel
Site description:	*Information sourced from the original 3rd-party proposal* Hartland Point to Tintagel MCZ is an inshore site on the north coast of Devon and Cornwall in the south-west of England. The site covers 304 km² and follows the coastline along the mean high water mark from Tintagel Head to Hartland Point. The existing MCZ designation in January 2016 aimed to protect coastal saltmarshes and saline reedbeds; low, moderate and high energy intertidal rock; intertidal coarse sediment; intertidal sand and muddy sand; moderate and high energy infralittoral rock; moderate and high energy circalittoral rock; subtidal coarse sediment; subtidal sand; fragile sponge and anthozoan communities on subtidal rocky habitats; honeycomb worm (*Sabellaria alveolata*) reefs and pink sea-fan (*Eunicella verrucosa*). The northern end of the MCZ was based on input from local group meetings within the Finding Sanctuary project (Lieberknecht *et al.* 2011 p857) who advised that 'breeding seabird colonies use the area between April and July', and suggested a standard one kilometre extension, in accordance with JNCC recommendations, around seabird colonies to protect the areas used by the birds during this time period. Figure 20 shows the suggested boundary of the third-party proposed MCZ, and Figure 21 shows the third-party proposed MCZ in the wider context of other local marine protected areas.
Proposed protected features	Common guillemot (*Uria aalge)*
Aim of the MCZ in relation to conserving highly mobile species:	Addition of new feature to the existing MCZ (Hartland Point to Tintagel) to form a one kilometre 'generic maintenance extension' extending offshore around two existing coastal SSSIs: Tintagel Cliffs and Boscastle to Widemouth in which the proposed feature nests, in order to afford site-based protection within the sea area considered most likely to support the maintenance activities of the proposed feature.
Summary of ecological significance of the site for the conservation of highly mobile species	Waters within one kilometre of colonies of breeding common guillemot have been recognised, in the context of considering marine extensions to Special Protection Areas, to be of high ecological significance to the birds breeding at that colony. The same conclusion regarding the ecological significance of such waters to birds nesting within colonies is equally valid when considering colonies within SSSIs. The number of common guillemot supported by the Tintagel Cliffs SSSI and Boscastle to Widemouth SSSI, and hence the waters within this MCZ, places this site within the top 10 most important sites in

	England for breeding common guillemot. This is based on recent and reliable count data and indicates that in an English context, this site is of considerable ecological significance to the species.
Overview of supporting data	Site-specific data is available for colony abundance with periodic counts at Tintagel Cliffs since the 1960s, with the most recent count in 2015. Site-specific data is available for colony abundance at Boscastle to Widemouth in 2000 and 2013. These counts are placed in the context of counts at all English seabird colonies. Use of waters within one kilometre of the colony are based on evidence provided in published JNCC reports demonstrating the generality of the significance of use of such waters across all guillemot colonies.
Proposed General Management Approach (GMA)	Maintain in favourable condition.

5.10.2 Site maps



Point	Lat	Long	Point	Lat	Long	Point	Lat	Long
A	51° 1' 13.945" N	4° 31' 27.961" W	I	50° 40' 8.568" N	4° 50' 28.062" W	Q	50° 50' 58.877" N	4° 34' 3.737" W
B	50° 40' 8.476" N	4° 45' 53.076" W	J	50° 50' 12.458" N	4° 50' 34.611" W	R	50° 52' 58.331" N	4° 34' 36.768" W
C	50° 37' 47.568" N	4° 46' 15.575" W	K	50° 50' 13.442" N	4° 39' 15.831" W	S	50° 53' 0.542" N	4° 36' 57.700" W
D	50° 37' 48.404" N	4° 46' 29.704" W	L	50° 48' 5.232" N	4° 39' 13.715" W	T	50° 57' 29.876" N	4° 36' 46.737" W
E	50° 38' 21.162" N	4° 47' 23.735" W	M	50° 48' 12.864" N	4° 37' 24.116" W	U	50° 57' 30.586" N	4° 34' 30.044" W
F	50° 38' 50.289" N	4° 47' 25.222" W	N	50° 48' 46.674" N	4° 35' 30.830" W	V	51° 1' 16.996" N	4° 34' 30.044" W
G	50° 39' 16.948" N	4° 46' 55.820" W	O	50° 47' 36.525" N	4° 34' 32.422" W	W	51° 1' 17.344" N	4° 31' 44.370" W
H	50° 40' 9.323" N	4° 46' 44.533" W	P	50° 49' 40.936" N	4° 34' 2.632" W			

Figure 20 Map showing the suggested boundary for Hartland to Tintagel MCZ mobile species site

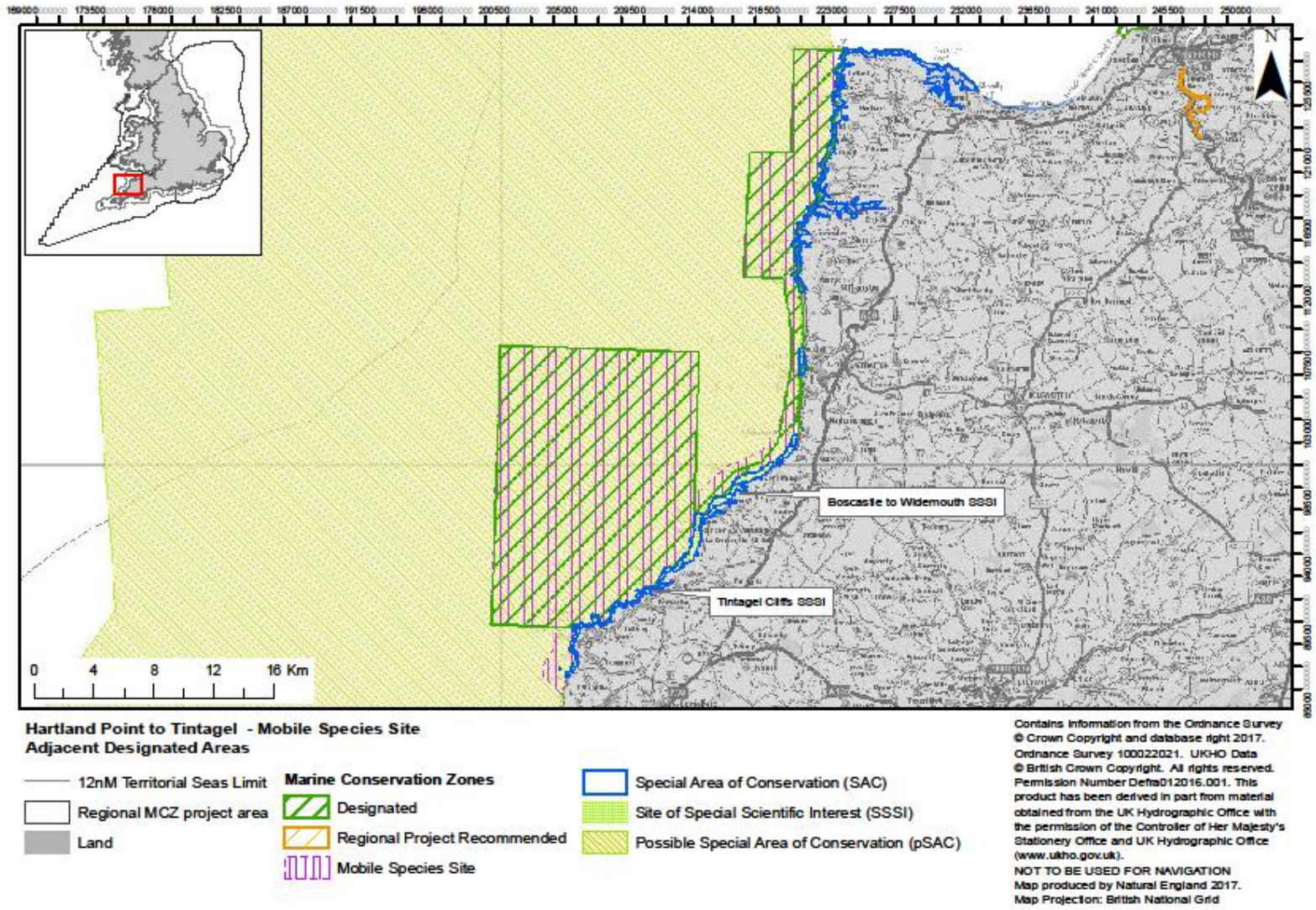


Figure 21 Map showing Hartland to Tintagel MCZ in the context of other designations within and around the MPA

5.10.3 Summary of Natural England's Pre-Consultation Advice

Ecological significance

Table 36 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	Low (in terms of site specific evidence). Moderate (in terms of generic evidence)	Moderate (based on marked increase in the size and significance of this colony in the last 2 decades and application of generic evidence re ecological significance of maintenance extensions to birds at a given colony)	**High** Seabird 2000 census data indicates that Tintagel Cliffs was the 10th most important Common guillemot colony in England at that time. More recent count data from the Tintagel colony (plus data from Boscastle) in comparison with more recent count data from other English colonies (where available) show that this colony has increased in importance and is now the seventh (or sixth if Flamborough and Filey considered as one) most important site in England. Work by JNCC has clearly demonstrated the persistent use by breeding auks of waters within one kilometre of their colonies for conducting critical "active maintenance behaviour" and that this is a consistent pattern across colonies.

Persistence

Table 37 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	Low (site specific), High (generic)	High	**High** A review of historical data confirmed the persistence of the presence of common guillemot at the main source colony (Tintagel Cliffs) since at least the 1960s with a general increasing trend in numbers through the 1980s and 1990s. Seabird 2000 census data indicates that this colony was the 10th most important common guillemot colony in England at that time. More recent count data from the Tintagel colony (plus data from Boscastle) in comparison with more recent count data from other English colonies (where available) show

			that this colony has increased in importance and is now the seventh (or sixth if Flamborough and Filey are considered as one) most important site in England. Work by JNCC has clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.

Site size and delineation

Table 38 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	Low (site specific). High (generic) (though Ecological Network Guidance (ENG) principles re boundary setting not applied)	High	**High** Work by JNCC has clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.

Appropriateness of Management

Table 39 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	Not met	Moderate	**Moderate** Evidence for appropriateness of management has been gathered using Natural England's Site Activity Inventory, GIS database and Vulnerability Assessment. Activities are listed for which the species is moderately to highly sensitive, and may have the potential to impact the conservation status of the species. Site specific management has been considered however there is currently no site specific management in place.

General Management Approach

Table 40 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Main issue(s) in relation to this GMA
Common guillemot	Maintain in favourable condition	Activities occurring within the site that generate pressures to which the feature is moderately to highly sensitive are deemed to be occurring at relatively low levels and/or require a marine licence and therefore are not likely to have a significant impact on the proposed feature.

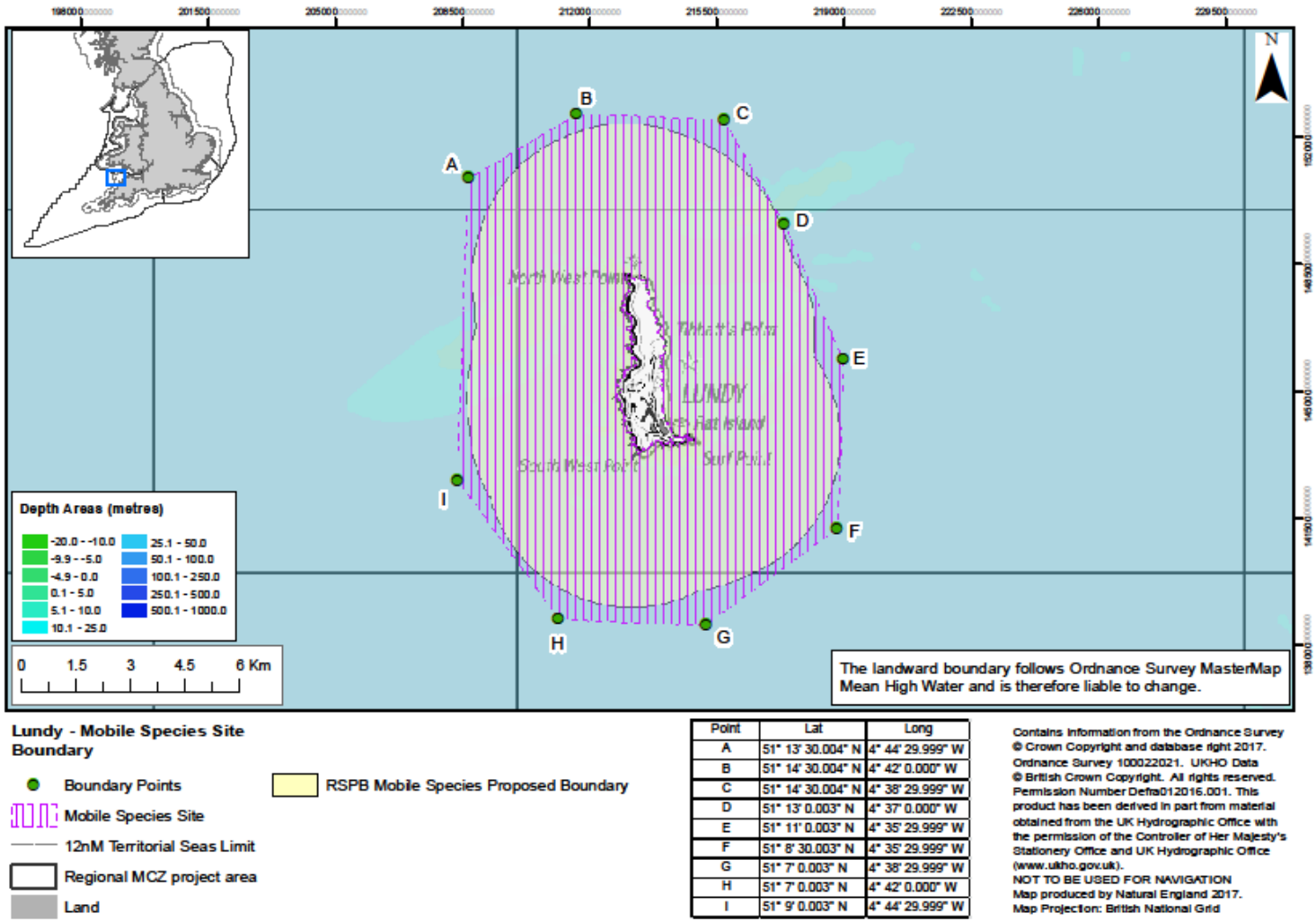
5.11 Lundy

5.11.1 Site summary

Site Name:	Lundy
Site description:	*Information sourced from the original third-party proposal* Lundy Island, in the Bristol Channel, is designated as a SSSI (for breeding seabirds: guillemot, kittiwake, Manx shearwater, puffin and razorbill), a SAC (for reefs, subtidal sandbanks, sea caves and grey seals) and an MCZ (for crawfish). Following the removal of rats in 2004, seabird populations are now recovering, but may still be lower than they were 100 years ago (Brown *et al*. 2011). The total number of seabirds is approaching 15,000. This is below the 20,000 requirement for 'sites that contain more than 20,000 waterbirds of at least two species' and therefore SPA designation (Kober *et al*. 2010), but it is likely that this number will be reached in the coming years. Lundy is the most important English site for Manx shearwater, and the most important regional site for razorbill and common guillemot. The MCZ recommendations did not include seabird features, although it was noted that an extension had been put forward which would protect loafing birds from fast moving vessels. Therefore, it was agreed at the time not to extend the MCZ, but to continue to monitor threats carefully. The extension of the MCZ would help to ensure that monitoring takes place, and management quickly implemented if a threat is identified. The 2013 census demonstrated that Lundy's seabird populations are continuing to grow and that this trend is likely to continue (Price *et al*. 2014; Booker & Price 2014). The successful growth of populations following the rat eradication programme needs to be sustained with effective protection at sea to ensure that foraging seabirds are not disturbed by recreational boats or caught in gill nets. Figure 22 shows the suggested boundary of the third-party proposed MCZ, and Figure 23 shows the third-party proposed MCZ in the wider context of other local marine protected areas.
Proposed protected features	Common guillemot (*Uria aalge)* Razorbill (*Alca torda)* Manx shearwater (*Puffinus puffinus)*
Aim of the MCZ in relation to conserving highly mobile species:	Extension of existing MCZ (Lundy) with addition of three new features, abutting an existing coastal SSSI (Lundy SSSI) which supports breeding colonies of the MCZ proposed features.
Summary of ecological significance of the site for the conservation of highly mobile species	Waters within one kilometre of colonies of breeding common guillemot and razorbill have been recognised to be of high ecological significance to the birds breeding at that colony in the context of considering marine extensions to Special Protection Areas. The same conclusion regarding the ecological significance of such waters

	applies in the case of SSSIs too. The number of seabirds supported by the Lundy SSSI, and hence the waters within this MCZ, makes this site the fourth most abundant site in England for breeding common guillemot, second most abundant for razorbill, and most abundant for Manx shearwater. This is based on recent and reliable count data and indicates that, in an English context, this site is of considerable ecological significance to the three species.
Overview of supporting data	The main data source is counts of nesting birds as per surveys reported by the Seabird Monitoring Programme between 1986 and 2013, placed in the context of counts at all English seabird colonies within SSSIs. Use of waters within one kilometre and four kilometres of colony based on evidence provided in published JNCC reports demonstrating the generality of the significance of use of such waters across all guillemot / razorbill and Manx shearwater colonies respectively.
Proposed General Management Approach (GMA)	Maintain in favourable condition.

5.11.2 Site maps



Point	Lat	Long
A	51° 13' 30.004" N	4° 44' 29.999" W
B	51° 14' 30.004" N	4° 42' 0.000" W
C	51° 14' 30.004" N	4° 38' 29.999" W
D	51° 13' 0.003" N	4° 37' 0.000" W
E	51° 11' 0.003" N	4° 35' 29.999" W
F	51° 8' 30.003" N	4° 35' 29.999" W
G	51° 7' 0.003" N	4° 38' 29.999" W
H	51° 7' 0.003" N	4° 42' 0.000" W
I	51° 9' 0.003" N	4° 44' 29.999" W

Figure 22 Map showing the suggested boundary for Lundy MCZ mobile species site

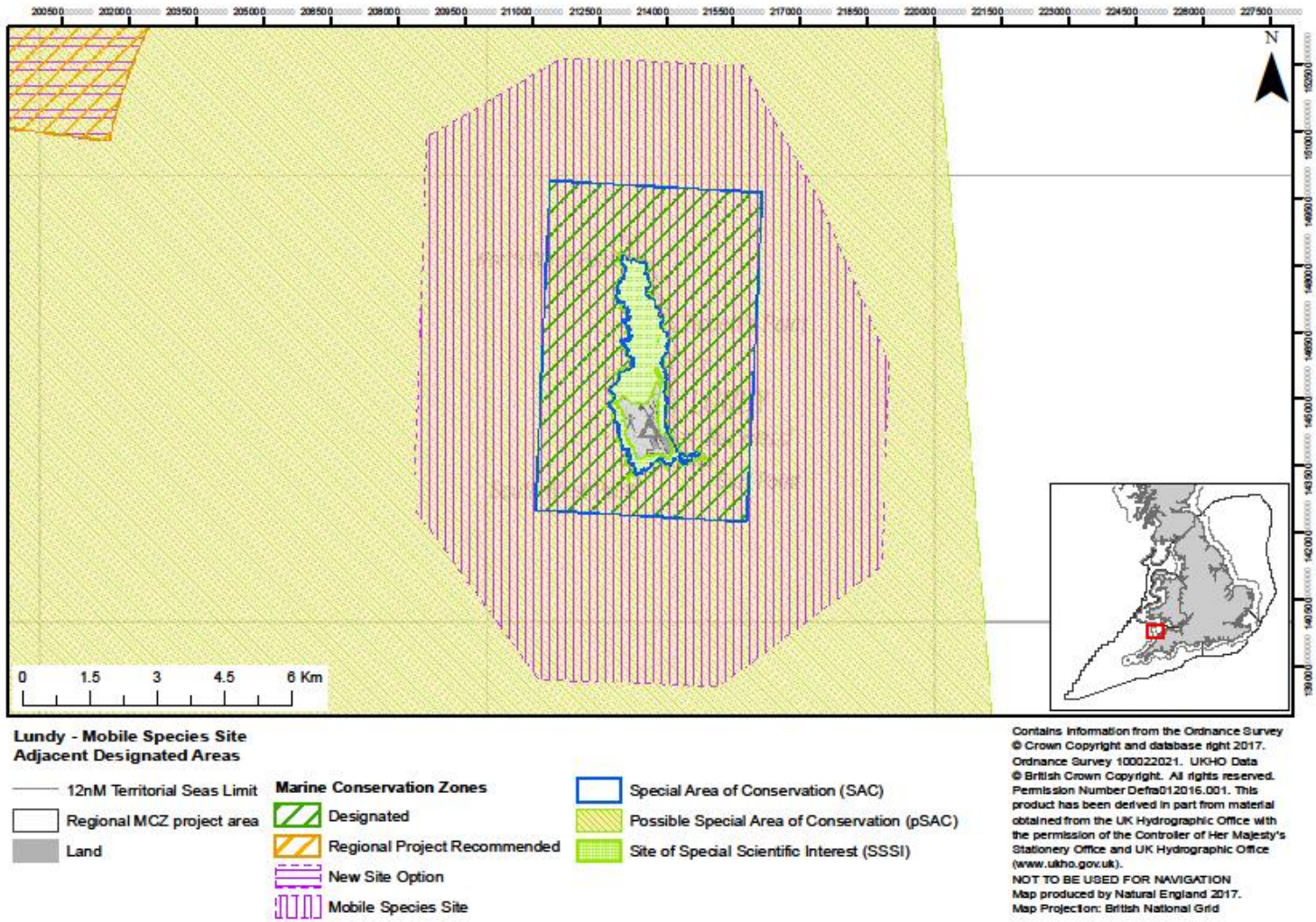


Figure 23 Map showing Lundy MCZ in the context of other designations within and around the MPA

5.11.3 Summary of Natural England's Pre-Consultation Advice

Ecological significance

Table 41 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score	Potential score	Updated score (taking into account further evidence review
Common guillemot	**Moderate**	**Moderate**	**High** (based on re-evaluation of relative numbers of birds breeding within Lundy SSSI in national context)
Razorbill	**High**	**High**	**High**
Manx Shearwater	**High**	**High**	**High**

Persistence

Table 42 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	**High**	**High**	**High**
Razorbill	**High**	**High**	**High**
Manx shearwater	**High**	**High**	**High**

Site size and delineation

Table 43 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	Moderate	High	**High** as generic maintenance extension resulting from review of JNCC evidence
Razorbill	Moderate	High	**High** as generic maintenance extension resulting from review of JNCC evidence
Manx shearwater	Moderate	High	**High** as generic maintenance extension resulting from review of JNCC evidence

Appropriateness of Management

Table 44 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	**Low**	**Moderate**	**Moderate**
Razorbill	**Low**	**Moderate**	**Moderate**
Manx shearwater	**Low**	**Moderate**	**Moderate**

General Management Approach

Table 45 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Activities that have influenced the GMA
Common guillemot	Maintain in favourable condition	A Maintain GMA has been proposed due to SSSI condition assessment of 'favourable condition' for the same population of birds. For further information on activities/pressures which may be of concern in the future if impact increases please see below.
Razorbill	Maintain in favourable condition	A Maintain GMA has been proposed due to SSSI condition assessment of 'favourable condition' for the same population of birds. For further information on activities/pressures which may be of concern in the future if impact increases please see below.
Manx shearwater	Maintain in favourable condition	A Maintain GMA has been proposed due to SSSI condition assessment of 'favourable condition' for the same population of birds. For further information on activities/pressures which may be of concern in the future if impact increases please see below.

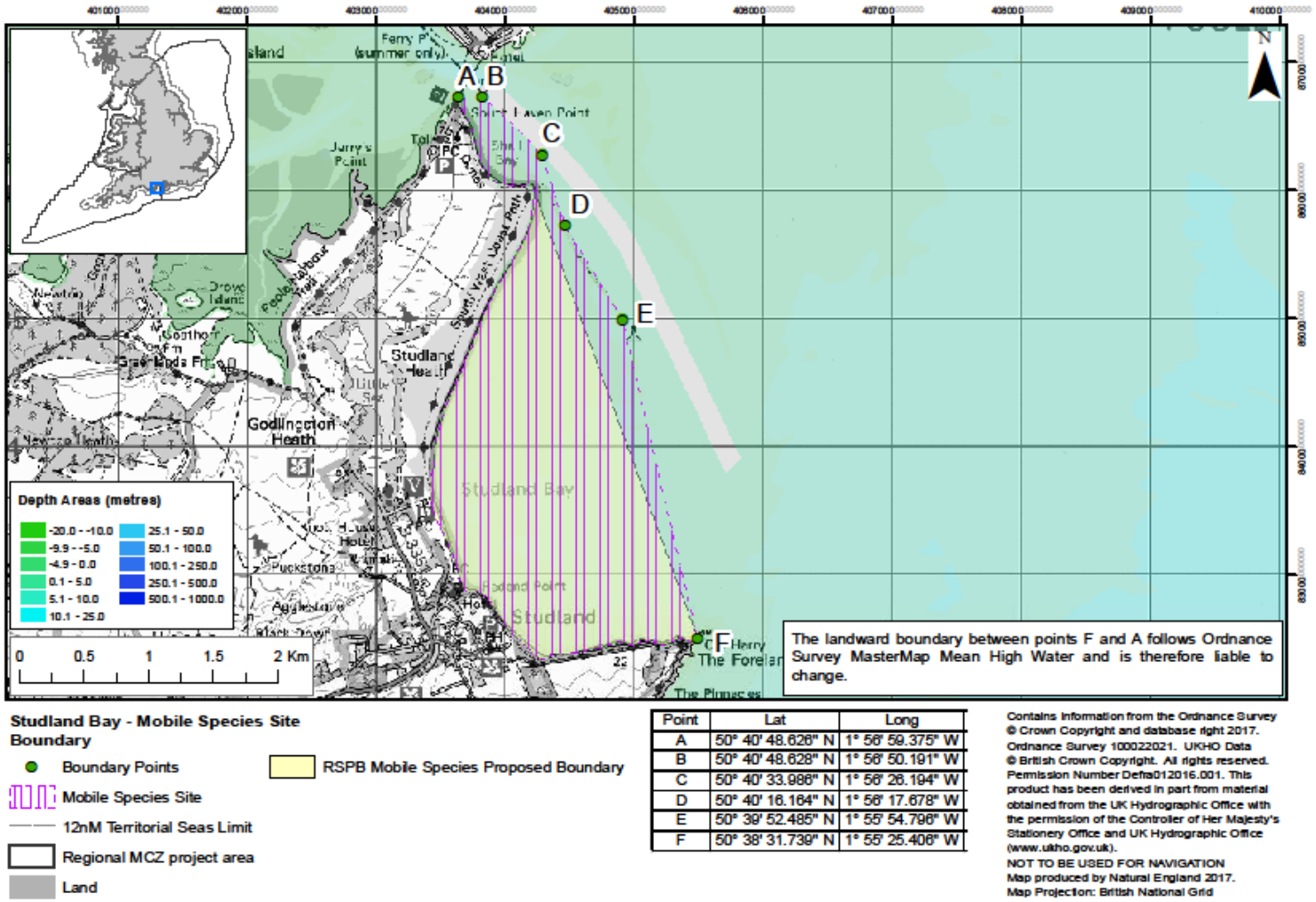
5.12 Studland

5.12.1 Site summary

Site Name:	Studland
Site description	The 2011 WeBS report (Austin *et al.* 2014) reports higher than average grebe numbers present at Studland Bay: 'the count of 80…may represent the largest aggregation of black-necked grebes ever seen in the UK'. The numbers of grebe have been steadily increasing following a major oiling incident in Poole Harbour in 1964, which more than halved the wintering population of approximately 50 individuals (Green 2004, cited in Austin *et al.* 2014). The Inshore seabird review for SEA 6,7 and 8 shows data between 1997 and 2003 from WeBs, bird reports and records centres and calculates a mean of 17 (for the most recent five years) for Studland Bay. The proposal submitted by the RSPB did not suggest making any amendment to the boundary of the Studland Bay rMCZ as set out in the Finding Sanctuary Report. The Initial Assessment of the RSPB proposal by JNCC and Natural England suggested that evidence may exist to support some minor revisions to the boundary of the site to accommodate the inclusion of black-necked grebe as a new feature. Collation and review of that information has indeed confirmed that a revision should be considered to extend the seaward boundary slightly further out to sea towards the northern end of the Studland Bay rMCZ and to extend the site slightly further northwards towards the entrance to Poole Harbour so as to include Shell Bay within the boundary of the proposed Studland Bay MCZ. Figure 24 shows the suggested boundary of the third-party proposed MCZ, and Figure 25 shows the third-party proposed MCZ in the wider context of other local marine protected areas.
Proposed protected features	Black-necked grebe (*Podiceps nigricollis*)
Aim of the MCZ in relation to conserving highly mobile species:	Extension of a proposed MCZ (Studland Bay) with addition of 1 new feature.
Summary of ecological significance of the site for the conservation of highly mobile species	There is no site-based protection for wintering black-necked grebe within the SPA network in the UK. Wetland Bird Survey (WeBS) records over the most recently available years indicate that Studland holds the 2nd highest average overwinter peak number of this species in England and across the UK as a whole. This is based on recent and reliable count data and indicates that in a national context, this site is of considerable ecological significance to the species.
Overview of supporting data	Historical records of counts in Studland from 1950s onwards. More recent count records from Wetland Bird Survey (WeBS) online database and from local recorders plus results of bespoke surveys of daytime distribution and of birds roosting at dusk/dawn confirm the importance of site in a local and national context.

Proposed General Management Approach (GMA)	Recover to favourable condition

5.12.2 Site maps



Point	Lat	Long
A	50° 40' 48.626" N	1° 56' 59.375" W
B	50° 40' 48.628" N	1° 56' 50.191" W
C	50° 40' 33.986" N	1° 56' 26.194" W
D	50° 40' 16.164" N	1° 56' 17.678" W
E	50° 39' 52.485" N	1° 55' 54.796" W
F	50° 38' 31.739" N	1° 55' 25.406" W

Figure 24 Map showing the suggested boundary for Studland MCZ mobile species site

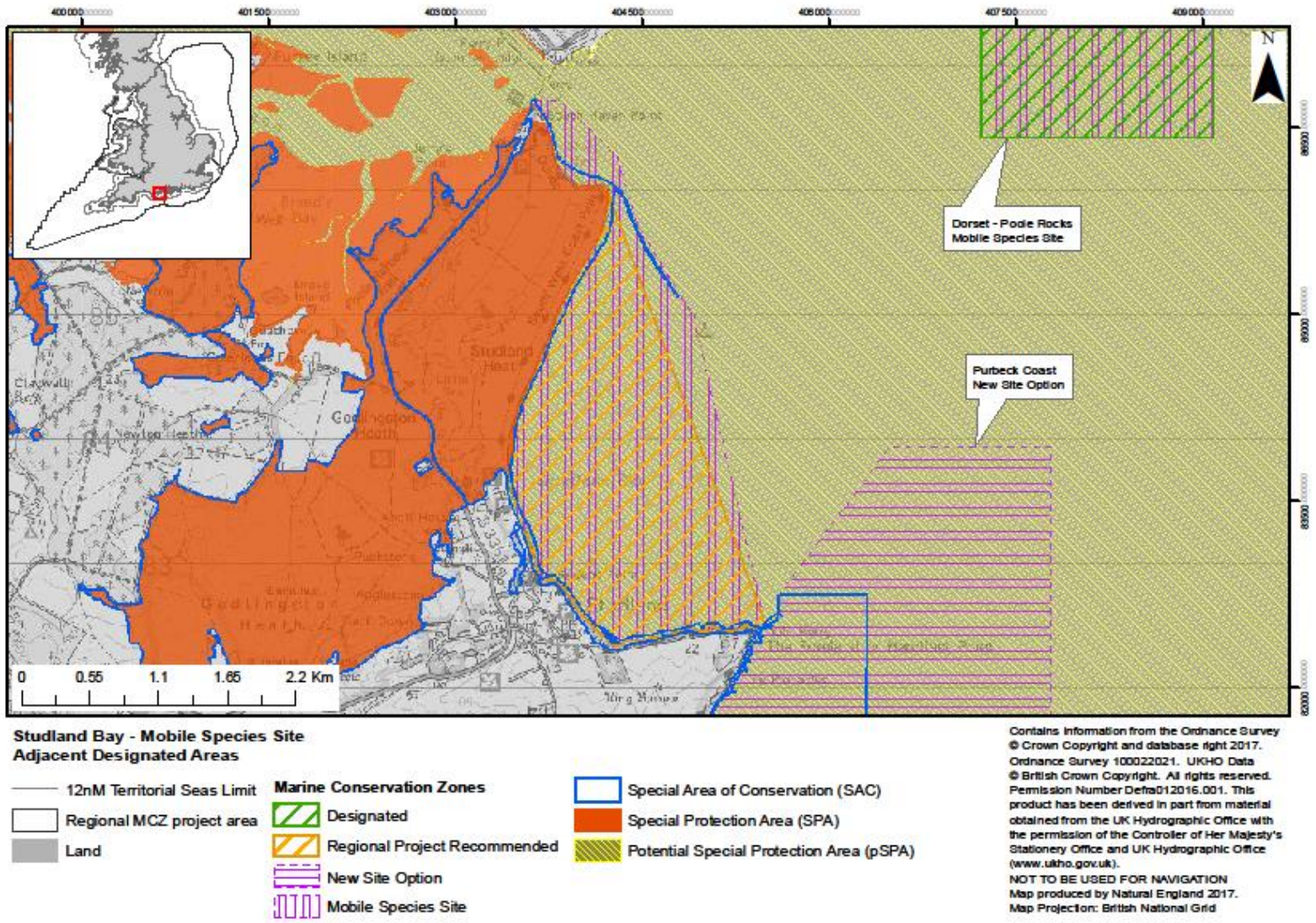


Figure 25 Map showing Studland MCZ in the context of other designations within and around the MPA

5.12.3 Summary of Natural England's Pre-Consultation Advice

Ecological significance

Table 46 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**High**	**High**	**High** More recent count data have confirmed the regular and continuing presence of the species in numbers that confirm the site's position as the second most important in England and the UK.

Persistence

Table 47 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**High**	**High**	**High** More recent count data have confirmed the regular and continuing presence of the species in numbers that confirm the site's position as the second most important in England and across the UK as a whole. Examination of local count records and surveys confirm the persistent presence of greater numbers of the feature inside the site than outside it.

Site size and delineation

Table 48 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**Not met**	**Moderate**	**High** Examination of detailed local sightings records and the results of bespoke surveys both suggest a minor boundary revision would incorporate all of the most important areas for this feature on the open sea outside Poole Harbour.

Appropriateness of Management

Table 49 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review
Black-necked grebe	**Not met**	**Moderate**	**Moderate** Although the Liley *et al.* (2006) study provides a detailed insight into some of the activities occurring in the area that may disturb the feature. Further fisheries information has been verbally relayed by SIFCA in Dec 2016.

General Management Approach

Table 50 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Activities that have influenced the GMA
Black-necked grebe	Recover to favourable condition	Black-necked grebe are exposed to a small range of activities but only anchored nets is considered to be potentially impacting grebe numbers.

5.13 Torbay

5.13.1 Site summary

Site Name:	Torbay
Site description:	*Information sourced from the original third-party proposal* The seabird colony at Berry Head is protected as a SSSI and managed by the Torbay Coast and Countryside Trust (TCCT). The area around Berry Head has a population of 1033 individual common guillemot (TCCT, 2015). Although this part of the MCZ was extended from Torbay to include seabirds, these features were removed when the site was designated in 2013. This additional zone within the MCZ for cetaceans and seabirds around Berry Head was also not taken forward. Therefore, the RSPB are requesting a boundary change, as a one kilometre extension around the colony, and the inclusion of the common guillemot and black-necked grebes as features of the site. Although this colony is 1% of the English population of common guillemot it does not meet SPA criteria. The designation of this area as an MCZ for common guillemot is important for the protection of this seabird colony during the breeding season due to the potential threat from recreational boating and netting. The area is regularly used by recreational boating and this has been identified as a threat to this colony. The existing site boundary mainly follows the boundary of Lyme Bay and Torbay SAC with a seaward extension beyond the SAC boundary around Berry Head. This Berry Head area was originally recommended for the protection of seabirds and cetaceans under the Finding Sanctuary project as Berry Head has considerable nature conservation importance for nesting seabirds Local Group and Working Group discussions have also recognised the importance of the area for birds, with an important wintering bird roost at Broadsands, and the second most important area for wintering diver and grebe concentrations in the south-west. The area is also important for bird breeding colonies, and guillemot feeding areas. The area has also been highlighted in Local Group feedback as being an important breeding area and nursery for commercial fish species. The third-party proposal submitted by the RSPB suggested making an amendment to the boundary of the Torbay MCZ by inclusion of all marine waters within a one kilometre buffer around the limits of the Berry Head to Sharkham Point SSSI. It is proposed here that the seaward boundary to the one kilometre buffer presented in the RSPB's proposal should be amended slightly in two respects. Firstly, to exclude the area within the one kilometre buffer around the colony that overlaps with Brixham harbour and lies outside the boundary of the existing MCZ. Secondly, to define the remainder of the seaward boundary around Berry Head by a series of straight lines between nodes rather than a series of arcs. Justification for these suggested amendments are set out in Section 4.3.

	Figure 26 shows the suggested boundary of the third-party proposed MCZ, and Figure 27 shows the third-party proposed MCZ in the wider context of other local marine protected areas.
Proposed protected features	Black-necked grebe (*Podiceps nigricollis*) Common guillemot (*Uria aalge*)
Aim of the MCZ in relation to conserving highly mobile species:	Extension of the existing MCZ (Torbay) with addition of 2 new features, and abutting an existing coastal SSSI (Berry Head to Sharkham point SSSI) which supports a breeding colony of one of the MCZ proposed features (common guillemot).
Summary of ecological significance of the site for the conservation of highly mobile species	There is no site-based protection for wintering black-necked grebe within the SPA network in the UK. County bird records over the most recently available 6 years indicate that Torbay holds the 7th highest average overwinter peak number of this species in England and across the UK as a whole. This is based on recent and reliable count data and indicates that in a national context, this site is of considerable ecological significance to the species. Waters within one kilometre of colonies of breeding common guillemot have been recognised, in the context of considering marine extensions to Special Protection Areas, to be of high ecological significance to the birds breeding at that colony. The same conclusion regarding the ecological significance of such waters to birds nesting within colonies is equally valid when considering colonies within SSSIs too. The number of common guillemot supported by the Berry Head to Sharkham Point SSSI, and hence the waters within this MCZ, places this site within the top 10 most important sites in England for breeding common guillemot. This is based on recent and reliable count data and indicates that, in an English context, this site is of considerable ecological significance to the species.
Overview of supporting data	Black-necked grebe: Historical records of sightings of the feature in Torbay between 1979 and 1991 and 1994-95. Sightings records in Torbay from 2003, 2004 and from each of the most recent 6 winters 2010/11-2015/16, sourced either from the Wetland Birds Survey (WeBS) online database and/or County bird records, and placed in the context of contemporary records/counts from elsewhere in the county and across England as a whole. Common guillemot: Annual counts of nesting birds at the Berry Head to Sharkham Point SSSI from 1986-2016, placed in the context of counts at all English seabird colonies within SSSIs. Use of waters within one kilometre of colony based on evidence provided in published JNCC reports demonstrating the generality of the significance of use of such waters across all guillemot colonies.
Proposed General Management Approach (GMA)	Black-necked grebe: Recover to favourable condition Common guillemot: Maintain in favourable condition

5.14 Site maps

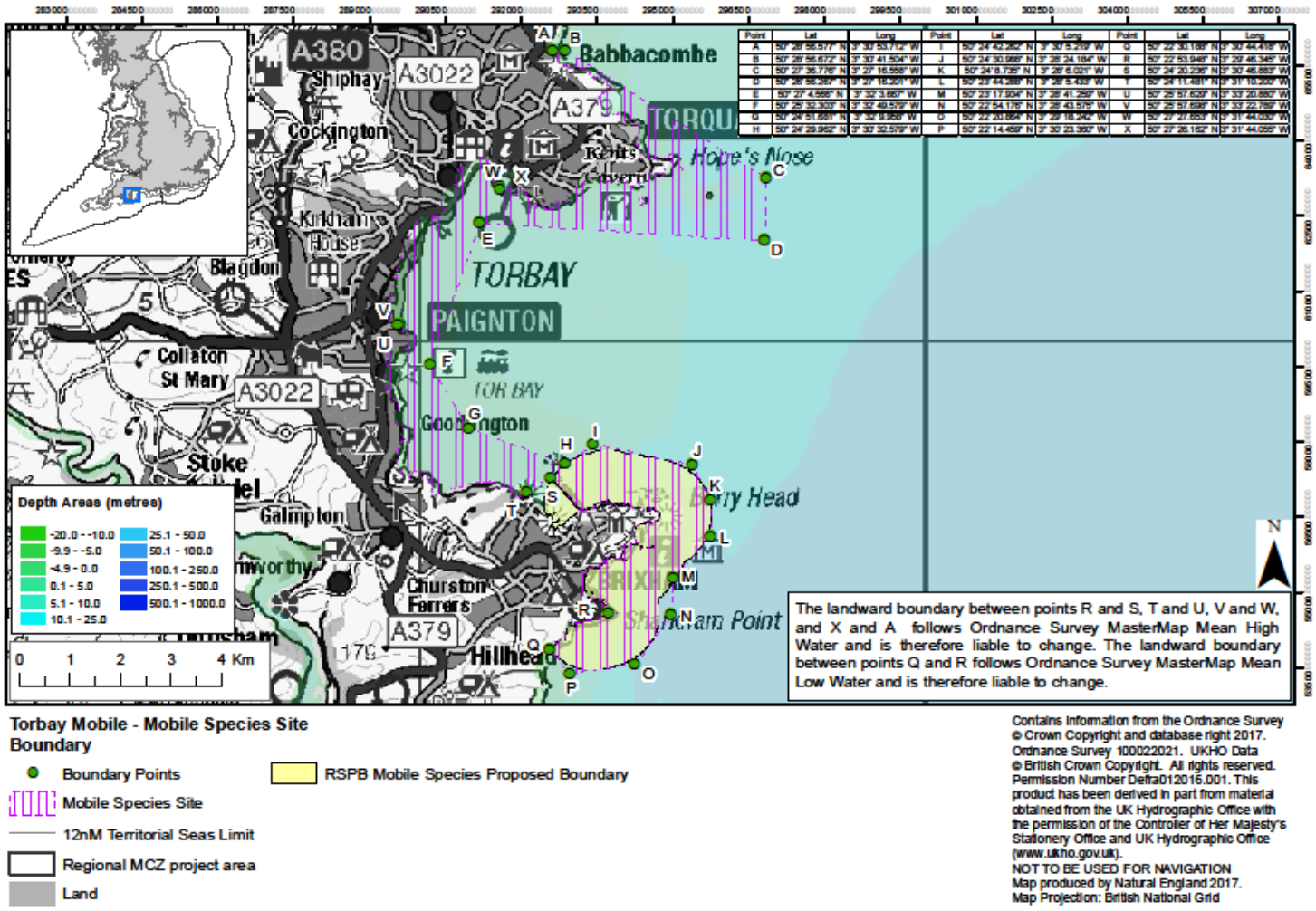


Figure 26 Map showing the suggested boundary for Torbay MCZ mobile species site

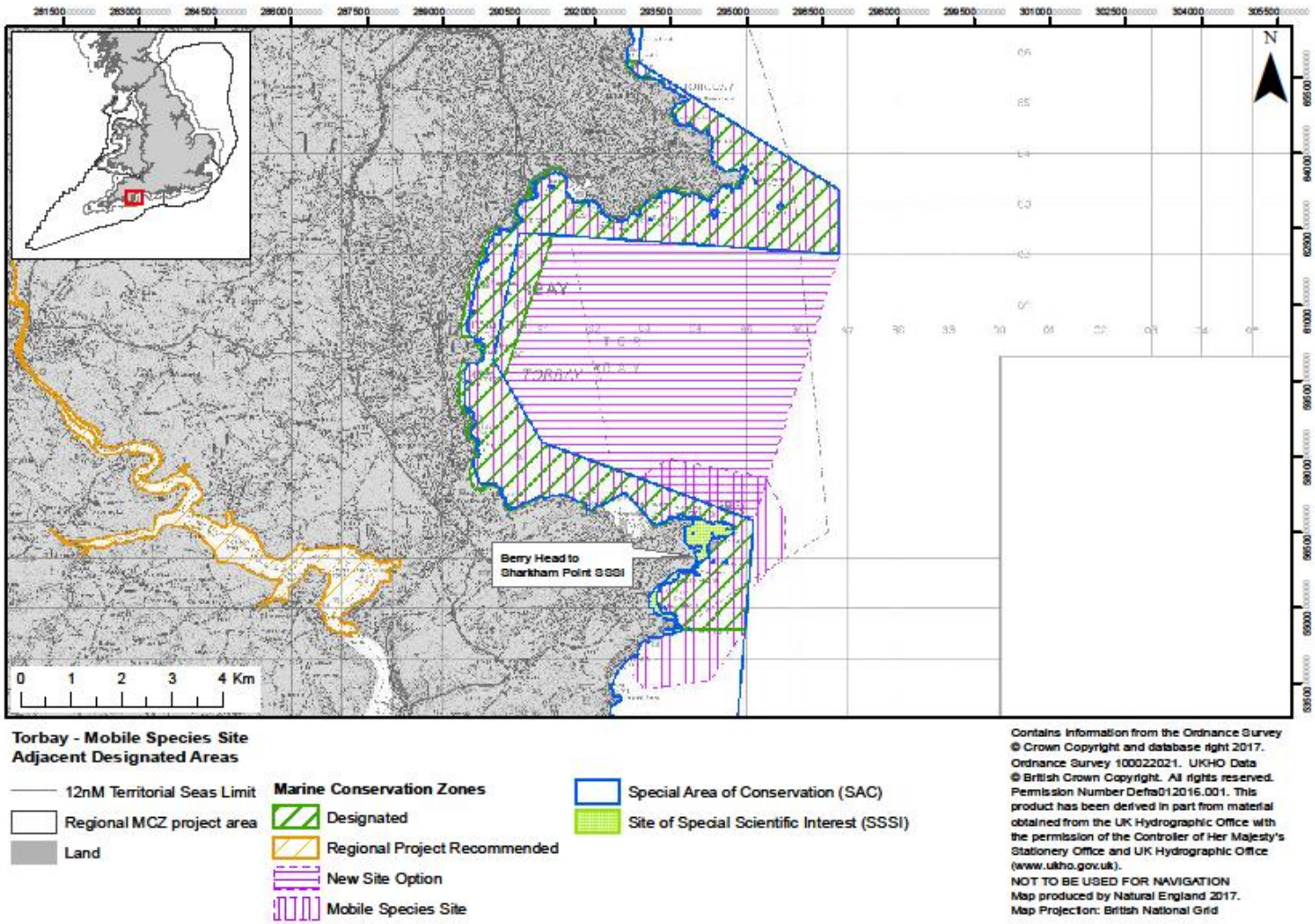


Figure 27 Map showing Torbay MCZ in the context of other designations within and around the MPA

5.14.1 Summary of Natural England's Pre-Consultation Advice

Ecological significance

Table 51 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**Moderate** (at best)	**Moderate** (at best) (Could be consolidated by provision of additional, more recent count data).	**High** More recent count data have confirmed the regular and continuing presence of the species in numbers that confirm the site's position as the 7th most important wintering site for the species in England and the UK.
Common guillemot	**Moderate** (in terms of site-specific evidence)	**Moderate** (in terms of site-specific evidence). This score would not be increased by application of generic evidence re ecological significance of maintenance extensions as score is influenced by the numbers of birds at this site	**High** Seabird 2000 census data indicates that this colony was the 7th most important guillemot colony in England at that time. More recent count data, where available, suggest this colony continues to be the 8th (or 7th if Flamborough and Filey considered as one) most important site in England. Work by JNCC has clearly demonstrated the persistent use by breeding auks of waters within one kilometre of their colonies for conducting critical 'active maintenance behaviour' and that this is a consistent pattern across colonies

Persistence

Table 52 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	Moderate	Moderate	**High** Historical records from 1970s – 1990s confirm species' persistent presence in Torbay. More recent count data have confirmed the regular and continuing presence of the species in numbers that confirm the site's position as the seventh most important in England and across

			the UK as a whole. Examination of sightings records throughout Devon confirm that numbers of records from Torbay far exceed those from all other sites in Devon with the sole exception of the Exe/Dawlish.
Common guillemot	Moderate (in terms of site-specific evidence), High (in terms of generic information underpinning the third-party proposal)	High	**High** Seabird 2000 census data indicates that this colony was the seventh most important guillemot colony in England at that time. More recent count data, where available, suggest this colony continues to be the eighth (or seventh if Flamborough and Filey considered as one) most important site in England. Work by JNCC has clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.

Site size and delineation

Table 53 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**Not met**	**Not met**	**High** Examination of the place names and/or national grid references given for the 222 sightings listed in the Devon County Bird records database that relate to Torbay reveal that all bar five of these sightings, based either on the place names given and/or grid references provided, lie within Torbay MCZ.
Common guillemot	**Low** (site specific). **High** (generic) (though ENG principles re boundary setting not strictly applied)	**High**	**High**. Work by JNCC has clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.

Appropriateness of Management

Table 54 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**Low**	**Low**	**Moderate**
Common guillemot	**Moderate**	**Moderate**	**Moderate**

General Management Approach

Table 55 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Activities that have influenced the GMA
Black-necked grebe	Recover to favourable condition	Bycatch or removal of non-target species caused by fixed nets and pelagic nets has the potential to be causing an impact on the population in the site and may require some sort of management if the third-party proposal goes forward for this feature. For more information see below.
Common guillemot	Maintain in favourable condition	A Maintain GMA has been proposed due to a SSSI condition assessment of 'favourable condition' for the same population of birds. For further information on activities/pressures which may be of concern in the future if impact increases please see below.

6 JNCC and Natural England's site specific advice on Highly Mobile Species Proposals

6.1 Lyme Bay Deeps third-party proposed highly mobile species MCZ

Contents

6.1.1 Background

The proposal for a draft MCZ in the Lyme Bay Deeps area was submitted to Defra by The Wildlife Trusts and MARINElife to protect white-beaked dolphin (*Lagenorhynchus albirostris*). Annual MARINElife surveys conducted between 1995 and 2015 have shown that a group of these animals persistently occurs in the Lyme Bay Deeps draft MCZ. Based on Reid *et al.* (2003), Paxton *et al.* (2016) and MARINElife data holdings, the draft MCZ represents the most southerly regularly-observed group of white-beaked dolphin in UK waters. The high re-sighting rates (50% of individuals) and high degree of interchange of individuals between observed groups in Lyme Bay, combined with the absence of observations of those animals catalogued from other parts of England, Scotland and Iceland, indicate that the group occurring in the Lyme Bay Deeps draft MCZ is likely to have a high degree of site fidelity and likely to exhibit a degree of isolation from the wider white-beaked dolphin population.

6.1.2 Assessment against selection criteria

Table 1 provides a summary of JNCC and Natural England's assessment of the Lyme Bay Deeps draft MCZ proposal submitted by The Wildlife Trusts and MARINElife for this group of white-beaked dolphin against the four principles considered important in the identification of MCZs for highly mobile species (see JNCC & Natural England, 2016). Each of the sub-sections that follow provide a full overview of the evidence submitted by The Wildlife Trusts and MARINElife, and are supplemented with further information from JNCC and Natural England.

6.1.2.1 Ecological significance

The Lyme Bay Deeps draft MCZ hosts a group of white-beaked dolphin at the apparent edge of their known range in UK waters (Reid *et al.*, 2003; Figure 1). Evidence from photo identification (ID) comparisons suggest that the animals recorded persistently within the Lyme Bay Deeps draft MCZ exhibit a high degree of site fidelity, and though the photo-catalogues are limited, so far there have not been any ID matches with animals from other locations around the UK (Brereton *et al.,* 2016; see Section 4.2 for further details). This result indicates that the Lyme Bay Deeps white-beaked dolphin group may be isolated from the wider UK population, with limited migration making them vulnerable to changes in the environment and anthropogenic pressure.

Studies directly investigating habitat use by white-beaked dolphin have found that they are generally restricted to shelf waters in the northeast Atlantic (Northridge *et al.,* 1995; Weir *et al.,* 2001; Hammond *et al.,* 2002; Reid *et al.,* 2003; MacLeod *et al.,* 2007; Hammond *et al.,* 2013) and prefer areas shallower than 120 m (MacLeod *et al.,* 2007). Water depths within the Lyme Bay Deeps draft MCZ range from 30 m to

60 m, aligning with the depth preferences described for the species. Where water depth is suitable, the most important variable defining white-beaked dolphin preferred habitat is water temperature. White-beaked dolphins are most commonly associated with summer water temperatures below ~12-14 ºC, and rarely occur where water temperatures reach 18 ºC and above (Macleod *et al.,* 2007; Macleod *et al.,* 2008). However, the group occurring in Lyme Bay appear to tolerate the warmer waters associated with this region, indicating that other variables may be driving their occurrence. This apparent adaptation to warmer waters may afford the group some level of resilience to changing sea water temperatures as a result of climate change, however it is equally possible that they would be particularly sensitive to rising sea temperatures being at the extreme of their range already; the white-beaked dolphin has previously been identified as one of the most likely species for which the effect of climate change may be seen in UK waters (UKMMAS, 2010). Considering the latter point, there is a risk that this small isolated group may not persist in the region in the long-term due to climate change; noting that white-beaked dolphin were not observed in the Lyme Bay region on a regular basis until the mid-2000s. A study by Canning (2007) off the coast of north-east Scotland found white-beaked dolphin to be associated with sandy sediments, deeper waters and gentler slopes, much like that of the central-western portion of Lyme Bay where the draft MCZ is situated. A study by Edwards (2010) concerning white-beaked dolphin in Lyme Bay using MARINElife data confirms this conclusion, identifying seabed type and water depth as key indicators of habitat preference for this group.

Although the available evidence to describe how white-beaked dolphin use this area is limited, particularly in relation to supporting critical life stages, 50% of sightings have included feeding animals, with calves observed in ~20% of groups, indicating that this draft MCZ may represent a key foraging and calving area for this isolated group (Brereton *et al.,* 2016).

Table 1: Summary of JNCC and Natural England's assessment of The Lyme Bay Deeps proposal against the principles set out in JNCC & Natural England (2016)

Principal	**Score** (High, Moderate, Low)	**Justification**
1. Ecological Significance (Section 4.1)	Moderate	Lyme Bay Deeps is the only area where white-beaked dolphins are regularly observed in the Channel, occurring at the edge of their known range in UK waters (Reid *et al.*, 2003). They are observed year-round (with some of the same individuals observed across multiple years) indicating a high degree of persistence and site fidelity in the area. Encounters are often with feeding animals (50% of recorded encounters) and calves (present in 20% of observed groups), indicating that this draft MCZ may represent a key foraging and calving area for this isolated group (Brereton *et al.,* 2016). Overall, JNCC and Natural England have concluded a MODERATE score against Principle 1 – ecological significance for the Lyme Bay Deeps draft MCZ, noting that empirical evidence for the ecological significance of the area for white-beaked dolphin is based on a single study and that benefits would unlikely be at the population or sub-population level, as photo ID work suggests no matches with animals from other locations across the UK (Brereton *et al.,* 2016).
2. Persistence (Section 4.2)	High	The evidence supporting this site is primarily from MARINElife, and includes effort-related survey data collected annually from 1995 to 2015. These data were supplemented with public sighting data from 2006-2015 and (limited) photo ID catalogues of the Lyme Bay group covering the period 2007-2014 and other individuals from around the UK and Iceland. Using these datasets, estimates of abundance and

		distribution were generated by MARINElife/The Wildlife Trusts. It is the view of JNCC and Natural England that these data support the persistence of white-beaked dolphin in the Channel and their fidelity to the Lyme Bay Deeps draft MCZ location. MARINElife data comprises 681 surveys conducted annually over 10 years covering ~128,000 kilometres of survey trackline across the wider Channel and parts of the Celtic Sea. When plotted as gridded effort (effort per 10 km^2 grid cell) ~72% of grid cells within the Channel were surveyed indicating high coverage. Of the grid cells surveyed 73% received over 10 hours of survey effort. The white-beaked dolphin sightings data collected on these surveys were corrected to account for varying effort by MARINElife and subsequently used to assess the distribution and relative abundance of white-beaked dolphin within the Channel. With all years combined, coverage in the Channel was high and clearly shows white-beaked dolphin are found predominantly in the Lyme Bay area. Thirty-five sightings comprising a total of 402 animals from public sightings datasets between 2006 and 2015 were used to complement the effort-related dataset. These sightings data provide further evidence of a resident white-beaked dolphin group in Lyme Bay. Using a range of available photo-ID catalogues, the site fidelity patterns of individually identified white-beaked dolphin were determined based on (a) their re-sighting rate and presence across seasons/years (following Möller *et al*., 2002), both within and between regions of the western Channel and north east England; and (b) the level of association between individual animals (mixing of individuals between groups). Off south west England, individuals were chiefly observed in a restricted area where the draft MCZ is proposed. From photo-ID studies, both the high re-sighting rates (50% of individuals) and the high degree of interchange of individuals between groups in the south west (e.g. one individual being associated directly or indirectly with 98% of animals identified) within Lyme Bay and the absence of matches with animals catalogued from other parts of England, Scotland and Iceland, all indicate that the group of white-beaked dolphin in Lyme Bay shows a high degree of site fidelity. It is the view of JNCC and Natural England that these data support the conclusion that a group of white-beaked dolphin persists in this area of the Channel and demonstrate fidelity to the area proposed as the Lyme Bay Deeps draft MCZ. We consider this conclusion to be based on a scientifically robust evidence-base and have therefore concluded a HIGH score against Principle 2 – presence and persistence. However, it is important to note that white-beaked dolphin were not observed in the Lyme Bay region on a regular basis until the mid-2000s and there is a risk that this small isolated group may not persist in the region in the long-term due to climate change or other increasing pressures.
3. MPA Size and Delineation (Section 4.3)	High	The boundary of the Lyme Bay Deeps draft MCZ has been drawn to encompass all effort-related sightings data in the outer Lyme Bay area collected annually between 2007 and 2014 and the majority of the largest concentration of casual sightings between 2006 and 2015. In addition, the boundaries have been specifically focussed on the highest relative abundance of sightings as counts per 10 km^2 as a total average

		of effort-related survey across all years. The boundary of the draft MCZ has been drawn in accordance with the MCZ boundary setting principles as outlined in the MCZ Ecological Network Guidance (Natural England & JNCC, 2010), namely ensuring a minimum number of straight lines and that the boundary is closely aligned to the feature of interest. Overall, JNCC and Natural England consider the draft MCZ scores HIGH against principle 3 - MPA size and delineation.
4. Appropriateness of Management (Section 4.4)	Moderate	There are a range of human activities that take place, or could conceivably take place in the future, within or in close proximity to the Lyme Bay Deeps draft MCZ that pose a threat to white-beaked dolphins. These activities include commercial fishing, military activities, waste disposal and discharge, recreational activities, commercial shipping and other potentially licensable activities such as piling. Based on JNCC and Natural England's understanding of the pressures associated with these activities, the sensitivity of white-beaked dolphin to those pressures (based on ICES, 2015a), and activities that could realistically be managed through an MPA-based management approach, we consider that the General Management Approach for white-beaked dolphin in Lyme Bay Deeps draft MCZ is to MAINTAIN the group in favourable condition. This conclusion is supported by data that suggest this group of white-beaked dolphin have persisted in the area for a number of years. The management intention for the Lyme Bay Deeps draft MCZ is to safeguard this group of white-beaked dolphin against potentially damaging activities that may take place in the future and to ensure any potential impacts from those activities are adequately assessed. This could include threats from impulsive underwater noise associated with military operations (such as sonar use) and licensable activities (such as piling), as well as threats from death or injury by collision that could result from powerboating or wildlife tourism operating in the area. Whilst the management of other activities is unlikely to be required within or in close proximity to the Lyme Bay Deeps draft MCZ at the present time, if evidence becomes available in the future to suggest they pose a threat to the achievement of the conservation objectives for the site then further management measures may need to be considered. Overall, JNCC and Natural England consider that there is sufficient evidence to support a MODERATE score against Principle 4 – appropriateness of management. The majority of activities that could give rise to pressures to which this group of white-beaked dolphin may be considered to be sensitive are largely already adequately managed through existing mechanisms - most notably under Annex IV of The Habitats Directive which affords the species protection from bycatch and disturbance that may have a negative effect on the Favourable Conservation Status of the species across European waters). However, there is the added value in designating an MCZ for this particular group of white-beaked dolphin as it would enable greater consideration being given to impacts from more localised activities taking place within the area – most notably powerboating and wildlife tourism.

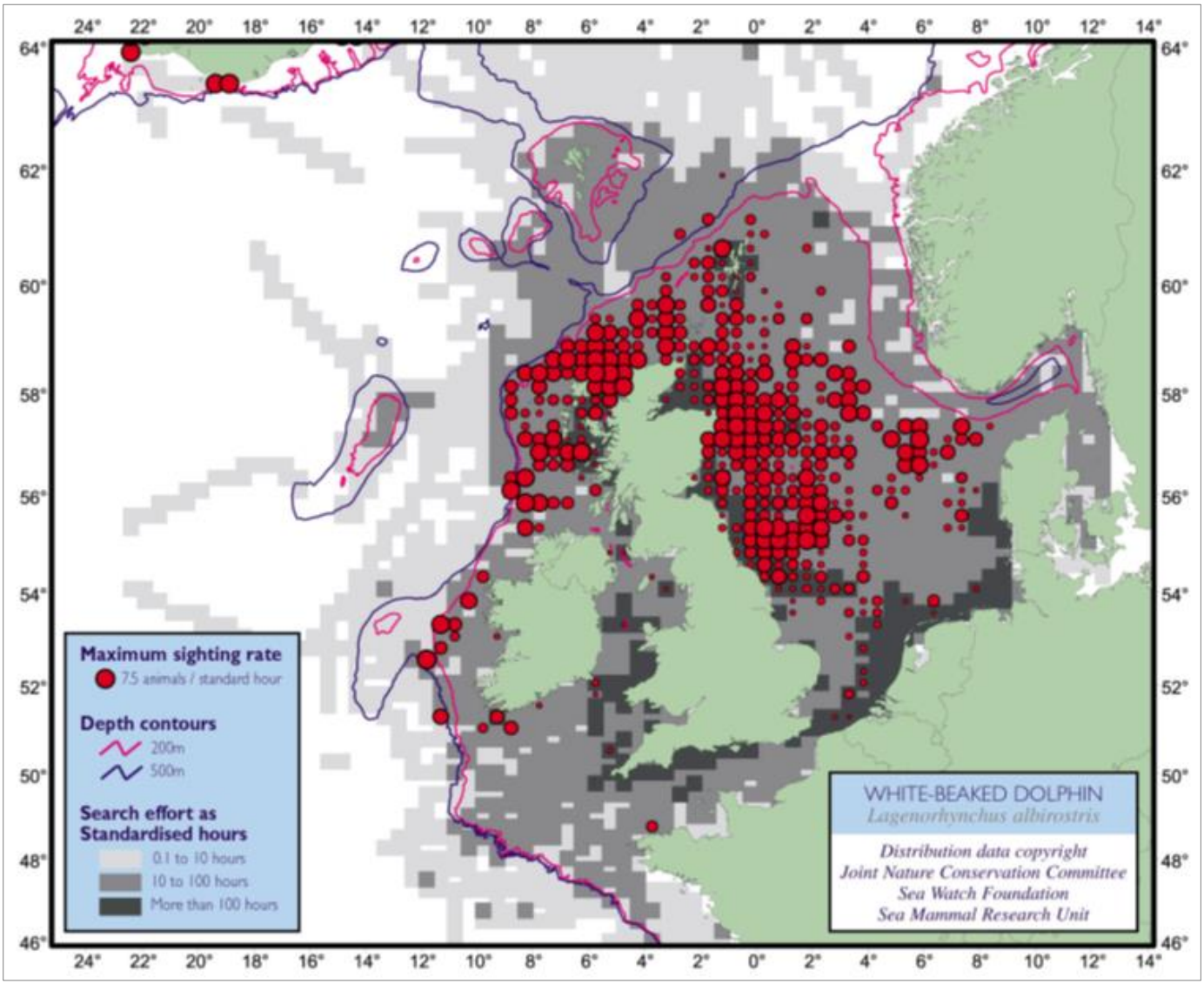


Figure 1 This map shows the known distribution of white-beaked dolphin in the north east Atlantic between 1979 and 1997. Note: white-beaked dolphin were not observed in the Lyme Bay region on a regular basis until the mid-2000s. For the most recent overview of the distribution of white-beaked dolphins in the Channel, please see Figure 4 below. From Reid *et al.* 2003.

6.1.2.2 Review of supporting data on presence and persistence

The Wildlife Trusts submitted a wide range of data to support of their Lyme Bay Deeps draft MCZ. Table 2 provides a summary of each dataset they used, the source of the data, timespans over which the data cover and how the data were used as part of the analysis The Wildlife Trusts undertook.

Overview of abundance within the Lyme Bay Deeps draft MCZ relative to the wider area

The distribution and relative abundance of white-beaked dolphin in the Lyme Bay region were assessed by MARINElife from a total of 681 effort-related MARINElife surveys conducted between 1995 and 2015, accounting for ~128,000 kilometres of survey effort in and around the Channel. Pooled across years, surveys were undertaken year-round, with peak effort during the late summer/early autumn (Brereton *et al*., 2013). From these surveys white-beaked dolphins were sighted on 48 occasions between 2007 and 2015, with 32 of these sightings events (accounting for a total of 239 observed animals) occurring within the Channel, and the vast majority within Lyme Bay. The spatial distribution of survey effort at a 10 km^2 resolution was calculated (Figure 2) and a simple measure of the relative abundance (number counted per kilometres travelled) of white-beaked dolphin was derived for each 10 km^2 grid cell using data pooled across all effort-related surveys (Figure 4).

These data were further supplemented by public sightings data submitted to MARINElife, through projects supported by Natural England and the European Union. In total 35 white-beaked dolphin sightings were collated from 2006-2015. In all instances contact was made with recorders to validate sightings, and photographic evidence was obtained for a number of these sightings. The distribution of effort-related and casual sightings is given in Figure 2. White-beaked dolphin have been recorded in the same restricted area of western Lyme Bay every year since 2006. With a potential search area of 1,000 km^2 locating the animals is not guaranteed. However, the most extensive survey work was carried out in this area in 2012, when white-beaked dolphin were encountered on 85% of trips, highlighting regular presence through the survey period.

Of the 32 effort-related white-beaked dolphin sightings in the Channel, 29 were made in Lyme Bay. Despite the public sightings dataset indicating a wider distribution in the Channel compared with the effort-related surveys, the vast majority were also located within the Lyme Bay area and no other areas of regular occurrence were apparent. White-beaked dolphin have been recorded in all months except December and February (limited or no survey effort) indicating presence during the majority of the year (Brereton *et al.,* 2016).

The status of white-beaked dolphin in the Eastern Channel is unclear. Occasional sightings have been recorded (other sources report sightings by French fishermen in the winter months), especially in the deeper middle waters, but no areas of regular occurrence are apparent. It should be noted that these sightings cannot be verified as there is no photographic evidence and the experience of the observers cannot be assessed. White-beaked dolphins are rarely seen from land off the south-west coast, with no records off (the intensively watched) Portland Bill, just a single record from Gwennap Head, Cornwall from 3324 hours of survey effort 2007-2010 as part of the Seawatch South West Project, and only three records from Berry Head in over 20 years of observation (pers. comm. Mark Darlaston).

The regularity of Lyme Bay for white-beaked dolphin is clearly shown through the relative abundance estimates illustrated in Figure 3. White-beaked dolphins were recorded in 12 of the 674 10 km^2 squares sampled in the Channel, representing less than 2% of the total area sampled and ~1% of the total area in the Channel. Lyme Bay accounted for nine of the 12 squares (75%) with repeat records in six of the nine and with each square being adjoining. It is possible some of the adjacent cells may support white-beaked dolphin on a regular basis, as the habitat is similar and sampling effort is lower.

Table 2: Summary of data submitted by The Wildlife Trusts in support of their Lyme Bay Deeps proposal

Dataset	Data Source	Period Covered	Details	Use
Effort-related survey data	MARINElife	1995-2015	681 surveys conducted annually over 10 years covering ~128,000 kilometres of survey trackline across the wider Channel and parts of the Celtic Sea. When plotted as gridded effort (effort per 10 km^2 grid cell) ~72% of the Channel grid cells were sampled indicating high coverage. Of these sampled cells, 73% of had over 10 hours of effort.	MARINElife utilised this dataset to assess the distribution and relative abundance of white-beaked dolphin within the Channel. With all years combined, coverage in the Channel was high and clearly shows that white-beaked dolphins are found predominantly in the Lyme Bay area. These sightings data were also used to define the site boundary.
Public sightings data	Data submitted from numerous sources through projects supported by Natural England and the European Union	2006-2015	35 sightings events comprising a total of 402 animals. Contact was made with recorders to validate sightings, and photographic evidence was obtained for a number of the sightings.	This dataset was used to complement the effort-related dataset. These sightings data provide further evidence of a resident white-beaked dolphin group in Lyme Bay. Public sightings data were also used to support delineation of the site boundaries, but given less weighting by comparison to the effort-related survey data due to lower confidence in the data.
MARINElife south west photo ID catalogue	MARINElife, supported by Natural England and supplemented by verified images from public sightings.	2007-2014	Lyme Bay catalogue includes 142 sightings of 62 identifiable animals.	The Lyme Bay photo ID dataset was used to provide a population estimate for this white-beaked dolphin group and to assess persistence and site fidelity.
North East Cetacean Project (NECP) photo ID catalogue	NECP	2010-2014	Catalogue includes 77 identifiable animals from the Northumberland coast out to Farnes Deeps.	Dataset used to cross check identified individuals between this catalogue and the Lyme Bay catalogue.
Faxaflói Bay, Iceland photo ID catalogue	Chiara Bertulli, University of Iceland	2002-2013	Catalogue includes 440 identifiable animals from the Faxaflói Bay region.	Dataset used to cross check identified individuals between this catalogue and the Lyme Bay

				catalogue.
Skjalfandi Bay, Iceland photo ID catalogue	Chiara Bertulli, University of Iceland	2002-2013	Catalogue includes 303 identifiable animals from the Skjalfandi Bay region.	Dataset used to cross check identified individuals between this catalogue and the Lyme Bay catalogue.
East coast of Scotland photo ID catalogue	Caroline Weir	2001-2003	Catalogue includes 6 identifiable animals from the east coast of Scotland.	Dataset used to cross check identified individuals between this catalogue and the Lyme Bay catalogue.
Dogger Bank photo ID catalogue	Anna Cucknell, IFAW/Marine Conservation Research	2011	Catalogue includes 6 identifiable animals from Dogger bank.	Dataset used to cross check identified individuals between this catalogue and the Lyme Bay catalogue.

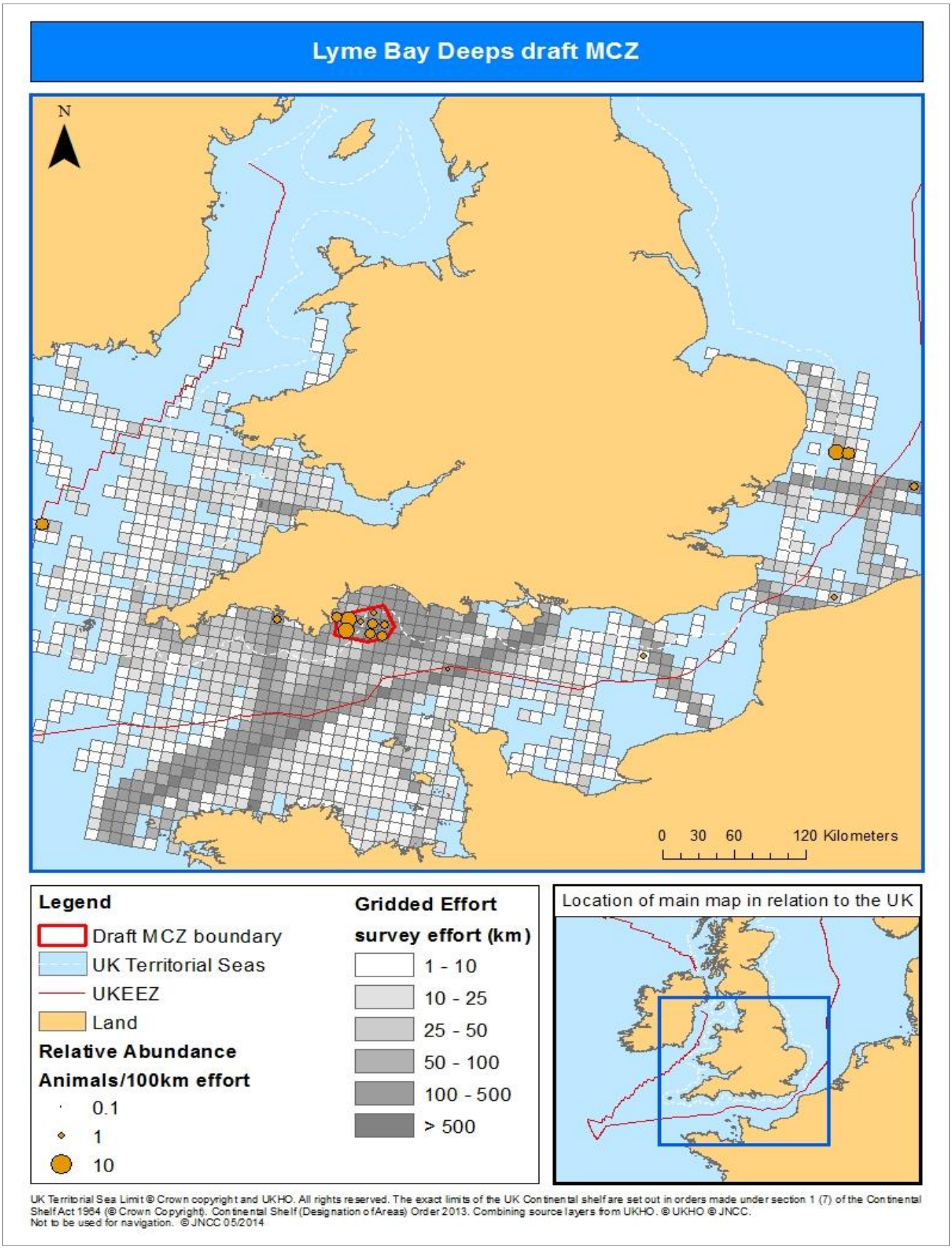


Figure 2 MARINElife survey effort (kilometres travelled) and relative abundance of white-beaked dolphin in the Channel at 10 km^2 scale. Figure shows combined data across years from ferries, recreational charter boats and research cruise vessels.

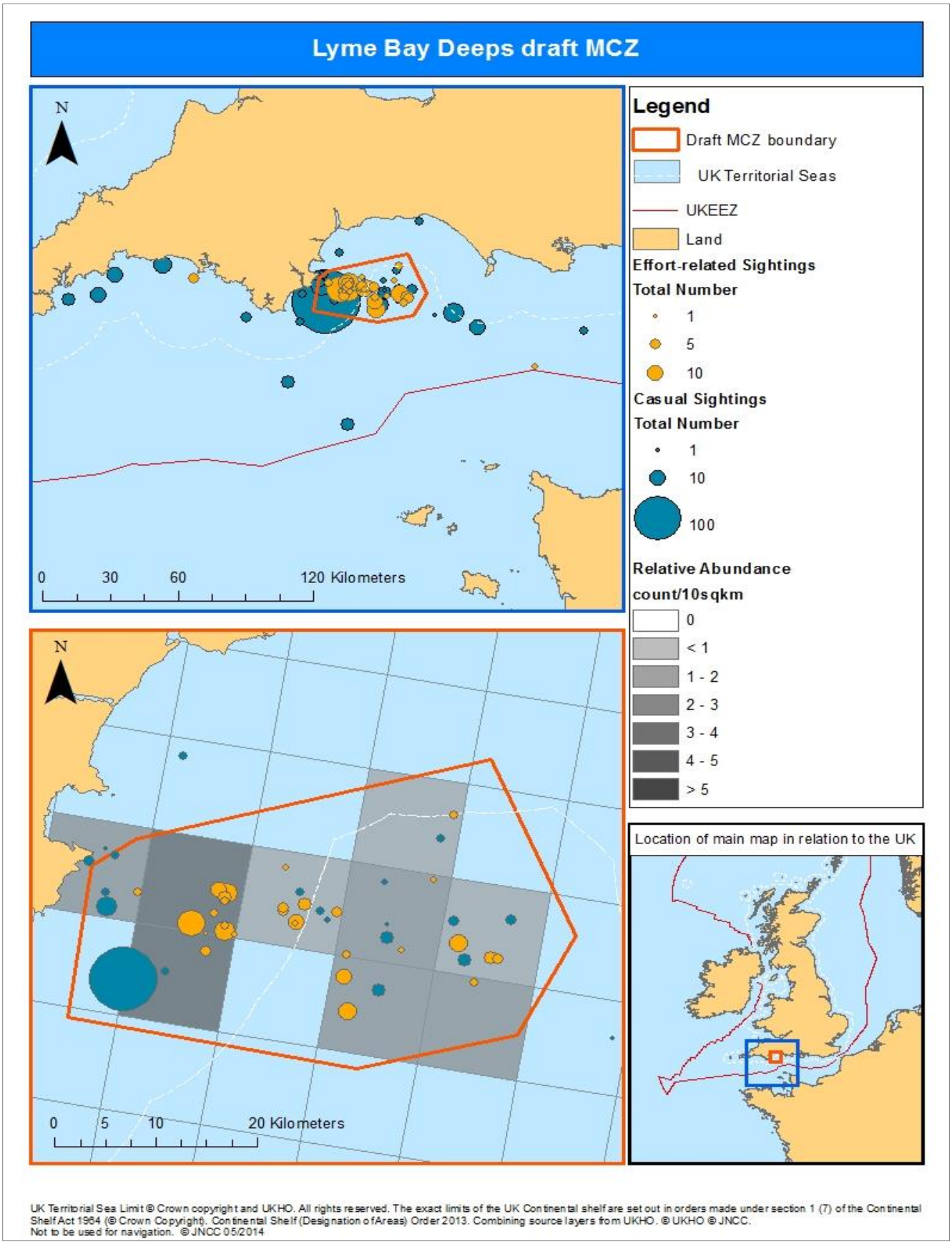


Figure 3 White-beaked dolphin effort-related (orange circles) and casual (blue circles) sightings scaled to abundance in the western Channel. Transparent grey grid cells indicate relative abundance of white-beaked dolphin (count/km) per 10 km^2 as an average across the 1995 to 2015 time-period.

Assessment of population size within the draft MCZ

From ~150 MARINElife small boat surveys off south west England, photo-ID images were obtained on 27 dates between August 2007 and December 2014, with 33 white-beaked dolphin groups totalling 271 individual animals. Standard photo-identification survey methods were employed (Brereton *et al.,* 2016). These photo sightings were supplemented by photographs submitted by local skippers. A MARINElife catalogue for Lyme Bay, south west England covering the period August 2007 – January 2015 comprises 142 sightings of 62 identifiable animals, and was compiled with support from Natural England.

Population size was assessed using the Chapman modification of the Lincoln-Petersen mark-recapture model (Chapman, 1951); an approach which has been used for other cetacean species (e.g. Currey, 2007; Balmer *et al.* 2008). Due to the low levels of sampling effort within seasons, data were pooled across years to construct two time periods and to derive an estimate of abundance for all years combined. These were 2007-2010 (n=37 individuals sighted) and 2011-2014 (n=38). Survey work conducted 2007-2010 was taken as the first four-year capture period, and the survey work 2011-2014 as the second four-year capture period. This method gives a maximum estimate of 131 adult/well grown juvenile individuals (range 99-211, 95% CL) for the 2007-14 period, with the addition of calves bringing the estimate to around 140 animals.

This would represent approximately 1.2% of the estimated number of animals occurring in the North Sea and Channel from SCANS II (Hammond et al., 2013; IAMMWG 2015). Note however that the Chapman method may be biased to give a high estimate, as it assumes no mortality or migration from the population, over the eight-year study period. The estimate is therefore for the whole period, rather than any one year.

Evidence of persistent use and site fidelity

The site fidelity patterns of individually identified white-beaked dolphin were determined based on (a) their re-sighting rate and presence across seasons/years (following Möller *et al*., 2002), both within and between regions of the western Channel and north east England; and (b) the level of association between individual animals (mixing of individuals between groups). The regions of survey for the south west project included parts of three English counties out to the 12 nautical mile limit: south Cornwall, south Devon, Dorset and surrounding offshore UK waters (beyond 12nm).

Within the southwest catalogue, 50% of animals (n=31) were re-sighted on one or more occasions, with two individuals sighted on seven occasions. 32% of animals were re-sighted across multiple years, with three animals sighted in four different years. New individuals were regularly encountered (exponential increase) from 2008 to 2012, after which, the rate of new encounters dropped indicating that all identifiable individuals had been identified and the current catalogue is representative of the individuals present (Figure 4). As such, the population appears to be stable, with no further immigration from the wider population, highlighting their fidelity to the area and potential isolation. Animals mixed readily with each other in groups of different sizes, with one individual being recorded with 98% of all other catalogued animals in the South West dataset between 2007 and 2014.

Both the MARINElife South West (n= 62 individuals photographed between 2007-2014) and North East Cetacean Project (NECP) (n= 77 individuals photographed between 2010-2014) photo-identification catalogues were compared for any matches in the individuals photographed. Photo-identification catalogues were also obtained from Faxaflói Bay in Iceland (n= 440 individuals photographed between 2002-2013 per Chiara Bertulli, University of Iceland), Skjalfandi Bay in Iceland (n= 303 individuals photographed between 2002-2013 per Chiara Bertulli, University of Iceland), East coast of Scotland (n= 6 individuals photographed between 2001-2003 per Caroline Weir), and Dogger Bank in the North Sea (n=6 animals photographed in 2011; NECP Dogger Bank photo-identification catalogue using images provided by Anna Cucknell – IFAW/Marine Conservation Research), for comparison. It should be noted that all identified individuals within the catalogues only represent a small percentage of the estimated numbers in the populations which could be present in their associated regions. Some interchange was considered

more likely between animals within the UK; however, there were no matches between animals in the south west England catalogue (Lyme Bay) and those of north east England, Dogger Bank or the east coast of Scotland. No matches were also found between animals in south west England and Iceland, which has a significant number of animals within the catalogue.

In summary, off south west England, individuals were chiefly observed in a restricted area of central-western Lyme Bay. From photo-ID studies, both the high recapture rates (50% of individuals) and the high degree of interchange of individuals between groups in the south west (e.g. one individual being associated directly or indirectly with 98% of animals identified) within Lyme Bay and the absence of matches with animals catalogued from other parts of England, Scotland and Iceland, all indicate that the group of white-beaked dolphin in Lyme Bay shows a high degree of site fidelity.

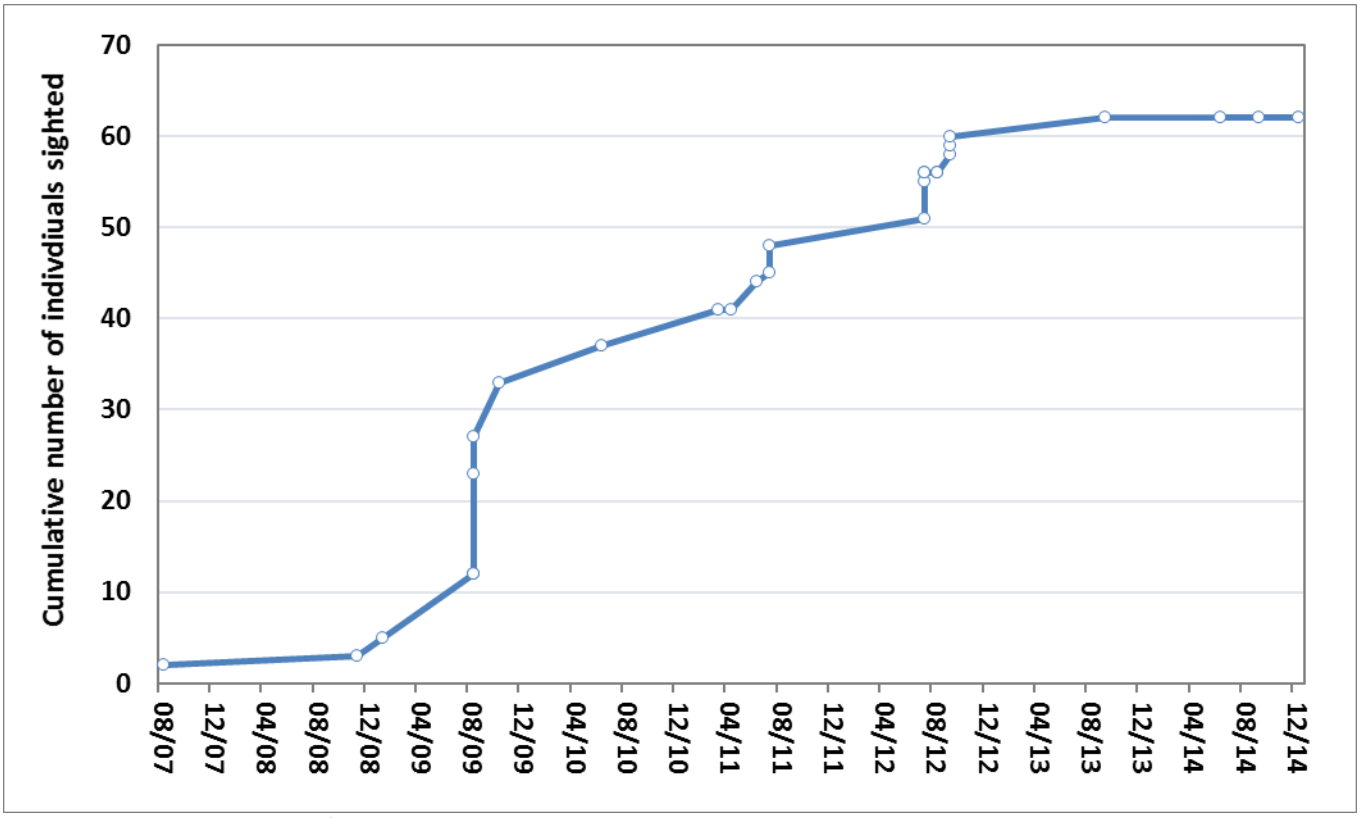


Figure 4: 'Discovery curve'[8] of identified white-beaked dolphins off south-west England 2007-2014. As the figure illustrates, new individuals were regularly encountered from 2008 to 2012, after which, the rate of new encounters dropped, with no new individuals identified in 2014. This indicates that all identifiable individuals had been recorded and are therefore representative of all individuals present.

6.1.2.3 Site size and delineation

Located east of Torbay and Brixham, the proposed Lyme Bay Deeps draft MCZ is 1,173km^2 and occupies a substantial part of central-western Lyme Bay area. The draft MCZ lies predominantly in UK offshore waters, extending into territorial waters of Devon County. The boundary of the draft MCZ has been drawn in accordance with the MCZ boundary setting principles as outlined in the MCZ Ecological Network Guidance (Natural England & JNCC, 2010), namely ensuring a minimum number of straight lines and that the boundary is closely aligned to the feature of interest.

[8] A graph recording the cumulative number of species of living things recorded in a particular environment as a function of the cumulative effort expended searching for them.

The boundary of the Lyme Bay Deeps draft MCZ (Figure 2) has been drawn to encompass all effort-related sightings data in the outer Lyme Bay area collected annually between 2007 and 2014 and the majority of the largest concentration of casual sightings between 2006 and 2015. In addition, the boundaries have been specifically focussed on the highest relative abundance of sightings as counts per 10 km^2 as a total average of effort-related survey across all years.

6.1.2.4 Appropriateness of management

Existing protection mechanisms for white-beaked dolphin in UK waters

White-beaked dolphin is afforded protection in UK waters under a number of existing international conventions and European/domestic legislation, including the BONN Convention; the BERN Convention, the EC Habitats Directive, the Marine Strategy Framework Directive, the CITES Convention and under National Biodiversity Strategies that evolved from UK Biodiversity Action Plans.

In particular, the BERN Convention lists white-beaked dolphin under Appendix II, with Article 6 of the Convention requiring Contracting Parties take necessary legislative measures to protect this species from deliberate killing, capture, damage to key habitats, disturbance or trade. In Europe, this commitment is delivered through the EC Habitats Directive, which has been transposed into domestic UK legislation under The Offshore Marine Conservation (Natural Habitats& c.) Regulations 2007 (as amended) and The Conservation of Habitats and Species Regulations 2010. Of particular note is the listing of white-beaked dolphin under Annex IV of The Habitats Directive that affords the species protection from bycatch and disturbance that may have a negative effect on the Favourable Conservation Status of the species. In the most recent assessment, the status of white-beaked dolphin conservation in UK waters was listed as 'Favourable' with good prospects for the future[9]. However, the protection afforded by the Habitats Directive requirements relate to the wider national scale consideration of conservation status. Additional protection for this isolated group at the edge of their UK range is considered therefore appropriate.

Considering the sensitivity of white-beaked dolphin to pressures associated with marine activities

There is no single reference point pertaining to the key pressures affecting white-beaked dolphin in the UK. ICES (2015a) undertook an assessment of the sensitivity of white-beaked dolphin to key pressures in the region that encompasses the Lyme Bay Deeps draft MCZ. Table 3 summarises white-beaked dolphin sensitivity to the pressures thought to be associated with activities taking place in the region.

Table 3 The sensitivity of white-beaked dolphin to pressures associated with marine activities taking place in the region encompassing the Lyme Bay Deeps draft MCZ (adapted from ICES,2015a)

Pressure group	Pressures	White-beaked dolphin sensitivity
Pollutants and other chemical changes	Contaminants	Medium
	Nutrient enrichment	Low
Physical loss	Habitat loss	Low
Physical damage	Habitat degradation	Low
Other physical changes	Litter (including micro plastics and discarded fishing gear)	Low
	Underwater noise changes (including military activities, seismic surveys, pile driving and shipping)	Medium
	Barriers to species movement (including offshore windfarms, wave and tidal device	Low

[9] http://jncc.defra.gov.uk/pdf/Article17Consult_20131010/S2032_UK.pdf

	arrays)	
	Death of injury by collision (with ships)	Low
	Death of injury by collision (with tidal devices)[10]	N/A
Biological pressures	Introduction of microbial pathogens	Low
	Removal of target and non-target species (prey depletion)	Low
	Removal of non-target species (marine mammal by-catch)	Low
	Disturbance from recreational vessels (e.g. wildlife watching, powerboating)	Low

JNCC and Natural England considered each of these pressures and whether it was appropriate to manage them using MPA-based management:

Pollutants and other chemical changes (including introduction of microbial pathogens) – There are a number of Environment Agency consented discharges within two kilometres of the draft MCZ. Cetaceans are exposed to a variety of anthropogenic contaminants mainly through their diet and as top predators, are at particular risk from biomagnification (ICES, 2010a). Numerous studies have made links between levels of PCBs and susceptibility to infectious disease in cetaceans (Aguilar and Borrell, 1994; Jepson *et al.,*1999; Hall *et al.,* 2006). The European Commission's Directive 79/117/EEC led to initial controls on some PCBs and from 1981 the use of PCBs in new equipment was banned and production ceased in UK; as a result, there was an initial decline in concentrations of PCBs in marine samples (Law *et al.,* 2012). However, since 1998, concentrations have levelled off, despite a further ban on use of PCBs in existing equipment in 2000. Although some contaminants, and PCBs in particular, are considered to have a significant negative impact on cetaceans, this pressure cannot be managed effectively at the site level. Most of these pollutants have been effectively phased out of use through action under the OSPAR Convention, the Stockholm Convention and more recently the EU. However, their chemical stability will lead to them remaining in the marine environment for some time. Any novel sources of potential contamination associated with a new plan or project on land/nearshore would need to be assessed by an Environmental Impact Assessment and would be subject to Water Framework Directive requirements. It is recognised that further efforts to limit or eliminate PCB discharges to the marine environment may still be needed; but that an MPA-based management approach is not considered an appropriate mechanism to do so.

Physical loss/damage to supporting habitat and impacts on prey availability – A variety of activities occur within the site, which could impact prey availability (e.g. pelagic and demersal trawling). However, white-beaked dolphins are known to have a broad diet, including fish species such as Atlantic cod (*Gadus morhua*), haddock *(Melanogrammus aeglefinus*), whiting (*Merlangius merlangus)* and herring (*Clupea harengus*), but also benthic crustaceans, other molluscs, squid and octopus (Reeves *et al.,* 1999; Canning *et al.,* 2008; Culik, 2010). Currently not enough is known about the diet of the Lyme Bay population to inform any management approaches to protect prey species. However, should future information concerning white-beaked dolphin diet within Lyme Bay and potential impacts on prey availability become available, this may result in changes to the assessment and the identification of management actions.

Litter – Although litter is a widespread issue in the marine environment, an MPA-based management approach is not considered appropriate by JNCC and Natural England to manage the impacts of this pressure on white-beaked dolphin. Although evidence is limited, stranding scheme data indicates that this pressure is not considered significant for the cetacean species in UK waters (IAMMWG, 2015).

[10] Risk of collision leading to death or injury is considered possible (e.g. at Strangford Lough), but there is no evidence of such an occurrence to date.

Underwater noise changes – If cetaceans are too close to an intense noise source when it is initiated, then physiological damage or even death can result. Damage can include temporary threshold shifts (TTS) and permanent threshold shifts (PTS) in hearing. Stone (2015) detailed marine mammal reactions during seismic surveys and reported that white-beaked dolphin moved away from the vessel when the airguns were firing. Their behaviour was also significantly different, changing from positive, bowriding type interactions when the airguns were not firing, to avoiding or travelling away from the vessel and 'fast swimming' when the airguns were firing.

Although there are no direct studies on the range of impact from underwater noise on white-beaked dolphin, studies concerning harbour porpoise and impacts from piling activity have demonstrated that complete displacement (i.e. removal) occurs within a radius of 20-30 kilometres during piling operations, with a decline in porpoise acoustic activity (compared with baseline) being recorded at even greater distances (Cartensen *et al*., 2006; Tougaard *et al*., 2009, 2014; ICES, 2010b; Brandt *et al*. 2011; Dahne *et al*., 2013). These studies indicate that noise sources at a considerable distance from a site boundary may still have an impact within a site, suggesting that underwater noise generating activities occurring outside of the draft MCZ may also need to be considered. Impulsive underwater noise sources are typically associated with activities such as piling, the use of explosives in the marine environment, seismic surveys and sonar use. For licensable activities, JNCC have produced protocols on minimising risk of injury to marine mammals from the use of explosives[11], seismic surveys[12] and piling operations[13] that should be followed during any such activity. For military activities, should the Lyme Bay Deeps draft MCZ be designated, it would need to be added to the Ministry of Defences' Marine Environment and Sustainability Assessment Tool (MESAT) – a system enabling the provision of advice on the sustainability of military activities within or in the vicinity of UK MPAs.

Barrier to species movement – There are limited data on the impacts of wet renewable devices (as well as other marine installations) on marine mammal movements. Of these, tidal turbines are the most developed with demonstration projects planned or constructed. No such developments are currently planned for Lyme Bay. A European Protected Species licence would be required should marine infrastructure developments be considered in the future if there is considered to be a significant risk of disturbance or injury to white-beaked dolphin.

Death or injury by collision with marine installations – Risk of collision leading to death or injury is considered possible for white-beaked dolphin, but there has been no evidence of such an occurrence to date. Where installations occur in narrow channels, then loss of habitat or barriers to habitat access may occur. This is, however, not currently considered to be an issue in the context of the Lyme Bay Deeps draft MCZ, given there are no narrow channels present based on our understanding of topography. A European Protected Species licence would be required should marine infrastructure developments be considered in the future if there is considered to be a significant risk of disturbance or injury to white-beaked dolphin.

Death or injury by collision with marine vessels – White-beaked dolphin are potentially vulnerable to vessel strikes, although ICES (2015a) consider the sensitivity of the species to be low. It is the view of JNCC and Natural England that commercial shipping and fishing vessel operations are not considered to occur at a level that would negatively impact upon white-beaked dolphin in the region as there is strong evidence that numbers have persisted in the area for a number of years in spite of significant levels of fishing and commercial shipping activity. Powerboat racing does occur occasionally in the region, and this activity could be a collision threat to white-beaked dolphins, given the high speeds involved.

[11] http://jncc.defra.gov.uk/pdf/JNCC_Guidelines_Explosives%20Guidelines_August%202010.pdf
[12] http://jncc.defra.gov.uk/pdf/JNCC_Guidelines_Seismic%20Guidelines_Aug%202010.pdf
[13] http://jncc.defra.gov.uk/pdf/jncc_guidelines_piling%20protocol_august%202010.pdf

Disturbance from recreational vessels – Although there is no evidence that disturbance from pursuing boats causes direct mortality, there is concern on the individual fitness and population consequences of observed displacement and change of behaviour. Powerboating and wildlife tourism are reportedly increasing in the Lyme Bay region (Natural England Area Team, pers. comm). Measures such as speed restrictions and wildlife watching accreditation schemes may be appropriate to implement to maintain the conservation status of white-beaked dolphin the Lyme Bay area and prevent disturbance in the draft MCZ.

By-catch - Between 2005 and 2010, 23 *post mortem* examinations were undertaken on white-beaked dolphin. The cause of death in two of these cases was attributed to by-catch (Deaville & Jepson 2011). Unfortunately, whilst by-catch was established as the cause of death, there is no information about the gear types used with which to consider appropriate management action. Static nets in certain areas (e.g. the south-west approaches) have been the subject of focussed monitoring and there has been one instance of white-beaked dolphin by-catch recorded as a result of static fishing gear. It is unknown whether fishing within Lyme Bay is an issue to this group, but overall numbers of white-beaked dolphin have persisted within the area for a number of years and so JNCC and Natural England do not consider this to be a risk to this group of white-beaked dolphin within the draft MCZ at the present time. Indeed, ICES (2015a) considers the risk to be low and further states that incidental catches are not thought to be high enough to represent a serious threat to the species. It should be noted that the use of pingers as a mitigation measure concerning by-catch is required on static nets deployed by vessels >12m in length in specified areas through EU Regulation 812/2004, intended to help mitigate risk from by-catch. One potential consideration could be the extension of this requirement to all vessels deploying static nets within the area.

In summary - JNCC and Natural England consider that underwater noise changes, disturbance and death or injury by collision pressures to be a key focal point for potential management action, should Defra decide to designate Lyme Bay Deeps draft MCZ. Whilst protection measures exist through the Habitats Directive, these relate to the wider national scale consideration of conservation status. Additional protection for this isolated group at the edge of their UK range is considered appropriate – focussing on potential impacts from powerboating and wildlife tourism.

The following section sets out JNCC and Natural England's General Management Approach for the species in the Lyme Bay Deeps draft MCZ based on the considerations outlined above and our understanding of exposure to pressures associated with activities that take place (or could conceivably take place in the future) to which white-beaked dolphin are considered sensitive and that could realistically be addressed through an MPA-based management approach.

6.1.3 Review of Risk and General Management Approach

Table 4: Summary of General Management Approach for white-beaked dolphin within the Lyme Bay Deeps draft MCZ

Pressure	Activities	Sensitivity (ICES, 2015a)	Exposure	Vulnerability	Proposed GMA
Death or injury by collision	Motor boating or sailing with an engine (notably powerboating)	Low	Moderate - activity is increasing in the Lyme Bay Deeps area	Low	MAINTAIN
Underwater noise changes	Military activities (notably the use of sonar and explosives)	Medium	Low – Significant overlap with Military Practice Areas within the site but it remains unclear how frequently these are being used. Activities include submarine exercises and surface firing	Low	MAINTAIN
	Licensable activities (notably pile driving and seismic surveys)	Medium	None - No licensable activities associated with underwater noise generation are currently known to take place	None	MAINTAIN
Disturbance from recreational vessels	Wildlife watching and powerboating	Low	Low – although activities are reportedly increasing in the region and wildlife tourism has the potential to increase even further should an MCZ be designated for white-beaked dolphin	Low	MAINTAIN

Overview of activities taking place within the Lyme Bay Deeps draft MCZ

JNCC and Natural England have reviewed its data holdings on activities taking place within or in close proximity to the Lyme Bay Deeps draft MCZ that could result in pressures to which white-beaked dolphin are considered sensitive and that could conceivably be addressed using an MPA-based management approach. We have identified military activities, powerboat racing and wildlife tourism as key activities taking place at the current time that may require additional management action based on exposure and sensitivity (ICES, 2015a). In the future, licensable activities associated with the generation of underwater noise changes may also conceivably take place and may also require additional management action.

General Management Approach

JNCC and Natural England have considered the exposure of white-beaked dolphin to pressures associated with activities to which the species is considered sensitive and that could possibly be managed using an MPA-based management approach to develop a General Management Approach for the species. The results of this assessment are presented in Table 4 and suggest the GMA for the species should be MAINTAIN in all cases.

Future management options

It is important to emphasise that white-beaked dolphin numbers within the draft MCZ have persisted over a number of years, but that certain marine activities taking place that may result in pressures to which white-beaked dolphin are considered to be sensitive are reportedly increasing (Natural England Area Team, pers.

comm); notably powerboating and wildlife tourism.

An assessment is required of the number of wildlife watching vessels that visit the draft MCZ, as tourism has been seen to negatively affect various cetacean species in other regions, causing a reduction in foraging, interrupting social interactions and causing disturbance (Lundquist *et al.,* 2012; Meissner *et al,* 2015; Pirotta *et al,* 2015; Perez-Jorge *et al.,* 2016). There are voluntary wildlife codes of conduct available (e.g. the WiSe scheme[14]) that could assist in reducing risk of disturbance or injury to white-beaked dolphin in the area as part of wildlife tourism operations. However, should an assessment of activity show an impact on the population, limiting the number of vessels (at a particular time or year or altogether) could be a potential management measure. Powerboat races should look to potentially avoid entering the draft MCZ and speed restrictions on vessels could also be enforced in certain areas if deemed necessary.

For military activities and the impacts of underwater noise changes, should the Lyme Bay Deeps draft MCZ be designated it would need to be added to the Ministry of Defences' Marine Environment and Sustainability Assessment Tool (MESAT), a system enabling the provision of advice on the sustainability of military activities within or in the vicinity of UK MPAs. For licensable activities and the impacts of underwater noise changes, JNCC have produced protocols on minimising risk of injury to marine mammals from the use of explosives[15], seismic surveys[16] and piling operations[17] that should be followed during any such activity, as well as following European Protected Species procedures. Any new activities would also be subject to licensing, Environmental Impact Assessment and Habitats Regulations Assessment processes.

6.1.4 Conclusion

The English component of the UK's post-2010 Biodiversity Framework outlines an ambition to halt species decline and prevent further human induced extinctions, listing a number of Priority Species for enhanced protection, including white-beaked dolphin. Specific actions for white-beaked dolphin include to 'Identify any sites of particular importance'. Overall, JNCC and Natural England consider there to be a sufficient body of evidence to support the presence and persistence of white-beaked dolphin within the Lyme Bay Deeps draft MCZ by comparison to the wider area.

The management intention for the Lyme Bay Deeps draft MCZ is to safeguard this group of white-beaked dolphin against potentially damaging activities that may take place in the future and to ensure any potential impacts from those activities are adequately assessed. This could include threats from impulsive underwater noise associated with military operations (such as sonar use) and licensable activities (such as piling), as well as threats from death or injury by collision that could result from powerboating or wildlife tourism operating in the area. Overall, JNCC and Natural England consider that the proposed General Management Approach for white-beaked dolphin in the Lyme Bay Deeps draft MCZ should be MAINTAIN in favourable condition.

[14] http://www.wisescheme.org/
[15] http://jncc.defra.gov.uk/pdf/JNCC_Guidelines_Explosives%20Guidelines_August%202010.pdf
[16] http://jncc.defra.gov.uk/pdf/JNCC_Guidelines_Seismic%20Guidelines_Aug%202010.pdf
[17] http://jncc.defra.gov.uk/pdf/jncc_guidelines_piling%20protocol_august%202010.pdf

6.2 Purbeck third-party proposed highly mobile species MCZ

Contents

6.2.1 Background

This proposal was submitted by Dorset Wildlife Trust with the aim of protecting new locations in Dorset known for nesting black bream and is one of three sites proposed in Dorset. Nesting sites have been recorded off West Sussex, the Isle of Wight and Dorset and currently only one site, Kingmere MCZ, is designated to protect this feature. Unlike most other finfish that visit British waters to breed, the black bream exhibit highly selective 'nesting behaviour' (Pawson 1995). The physical requirements for the nesting sites are quite specific; near-horizontal bedrock with a thin layer of sediment. The overlying sediment is cleared away by the male leaving a circular patch of clean bedrock on which the eggs are laid (Collins & Mallinson 2012). The males remain at the nest site guarding the nests, until the eggs hatch and likely return to the same site to nest each year.

The mating season has been reported to occur between April and June (Lythgoe & Lythgoe 1991). However recent monitoring carried out by Doggett and Openshaw (2015) as part of the black bream project found that in 2015 nesting finished in June and the bream disappeared from some nesting sites for a short period. They returned in late June and early July (22nd June – 2nd July 2015) and over a 10-12 day period re-built nests, laid eggs and successfully guarded and hatched eggs. Secondary spawning peaks identified above are supported by studies by Gonçalves and Erzini (2000).

The third party proposals for the Dorset sites aim to protect the nesting adult black bream, the nests and capture suitable nesting habitat, shallow mixed and coarse sediments over near-horizontal bedrock during the nesting period between April and early July. Evidence suggests that black bream show some site fidelity and nesting bream are specifically targeted by recreational and commercial fisheries, which suggests the suitability of MCZs for protecting nesting black bream (Dapling, *et al.* 2016; Southern IFCA 2016a).

6.2.2 Assessment against selection criteria

6.2.2.1 Ecological significance

Table 56 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black bream (nesting)	**High** There is high quality and a range of evidence (side scan sonar, SCUBA diving, Southern IFCA observations) that identifies the location of nests within the Purbeck site, highlighting its ecological significance as a nesting ground for bream (Collins & Mallinson 2012; Dorset Wildlife Trust mobile species proposal 2016; Southern IFCA 2016b).	**High**	**High** Southern Inshore Fisheries and Conservation Authority (Southern IFCA) side scan sonar surveys identified an additional nesting ground within the proposed site boundary (Southern IFCA 2016c). Bream researchers have observed thousands of nests within the site which further supports the site's ecological significance for the species (Openshaw *pers. comm*. 2016)

Justification

Original assessment

There was high quality evidence presented that identified the location of nests throughout the site. The side scan evidence was relatively recent (Collins & Mallinson 2012). Side scan is a recognised technique for the identification of bream nests.

The site was identified to be of great importance to the life history of the black bream that reside in the English Channel for spawning and nesting behaviours. This led to a score of **HIGH**.

Additional evidence gathered and revised assessment

New evidence has been incorporated from the 2016 SIFCA side scan sonar surveys of the Purbeck site. This identified a new area of black bream nests within the Purbeck site, in between the existing nesting sites at Kimmeridge and Dancing Ledges which had previously been identified through side scan sonar and SCUBA diving surveys (Collins & Mallsinon 2012). Collins & Mallinson report that the most extensive occurrence of bream nests was found off Kimmeridge during their surveys in Dorset and the Isle of White. Furthermore, conversations with bream researchers in the study area have indicated the presence of thousands of nests in dense aggregations between Lulworth and St Alban's Head (Openshaw *pers. comm.* 2016).

Black bream is widespread in the Channel but has specific habitat requirements for nesting. Apart from these three proposals in Dorset, other known sites where nesting occurs on the south coast include an area off Sussex at Kingmere MCZ and off the east coast of the Isle of Wight near Sandown Bay. The underlying geology of much of Purbeck, as revealed in the multibeam bathymetry data, is mostly comprised of near horizontal and gently dipping rock ledges with a thin veneer of coarse sediment ('Kimmeridge shale') in the gullies between the ledges. The area of the third party-proposed Purbeck MCZ is clearly ecologically significant to the life cycle of the species in that it provides the specific supporting habitat required for nesting; flat bedrock covered in a shallow sediment veneer (Collins &

Mallinson 2012; Openshaw *pers. comm*. 2016).

The new side scan evidence together with recent observations made by bream researchers in the area support the original assessment of this site as **HIGH** against the principle of ecological significance. This assessment is based on high quality sources of data and corroborated through observations by bream researchers and SIFCA observations of recreational sea angling activity (Collins & Mallinson 2012; Southern IFCA 2016b; Southern IFCA 2016c; Openshaw *pers. comm*. 2016).

There is currently just one MCZ in the UK designated for nesting bream: Kingmere MCZ. The addition of this site in conjunction with the proposals for Southbourne Rough and Poole Rocks MCZ provides good replication of sites for the species in the South of England. Furthermore, the addition of all three proposed MCZs for bream in Dorset would contribute to the connectivity of the network, as they occur within 40-80 kilometres of each other, in line with the advice on connectivity set out in the ecological network guidance (Natural England and JNCC 2010).

6.2.2.2 Persistence

Table 57 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting black bream	**High** There is good quality and a range of evidence (side scan sonar, SCUBA diving, Southern IFCA observations and recreational angling activity data) that identifies the persistence of nesting bream at this site between 2008 and 2012 (Collins & Mallinson 2012; Dorset Wildlife Trust mobile species proposal 2016; Southern IFCA 2016b).	**High**	**High** Southern IFCA side scan sonar surveys in 2016 identified an additional nesting ground within the proposed site boundary (Southern IFCA 2016c). Sidescan sonar and SCUBA diving surveys indicate the persistent use of this site by nesting bream over at least a 7 year period between 2010 and 2016 (Collins & Mallinson 2012; Southern IFCA 2016c; Dorset Wildlife Trust mobile species proposal 2016).

Justification

Original assessment

The evidence presented for persistence within these areas was good. The use of different data types; side scan, commercial and recreational catches and observation by divers and of recreational fishing vessels on the sites provided a clear indication of persistence across the sites. This resulted in a score for this principle of **HIGH**.

Additional evidence gathered and revised assessment

Additional evidence of nesting bream captured through side scan sonar surveys (Southern IFCA 2016b) confirms the original assessment of this site as **HIGH** for the ecological principle of persistence. There is

evidence from tagging studies to suggest that black bream show some site fidelity to their nesting ground (Dapling *et al.* 2016). The range of side scan sonar data and diving records from between 2010-2016 confirming the presence of significant numbers of bream nests within the site indicate that the site is persistently used by bream as a nesting ground (Collins & Mallinson 2012; Southern IFCA 2016c; Dorset Wildlife Trust mobile species proposal). The persistent use of the site by nesting bream is further corroborated through the observations of bream researchers studying the nests in the area (Openshaw, *pers. comm*. 2017). Southern IFCA have also identified possible nesting areas occurring within this site based on their observations and anecdotal evidence of commercial and/or recreational fishing activity (Southern IFCA 2016b).

It should also be noted that nesting bream sightings have recently been recorded along the south coast at the start of July. This may indicate a secondary nesting period or that nesting can occur later in the year if conditions earlier in the year are unsuitable (Doggett & Openshaw 2015; Pinder *pers. comm.* 2015). Secondary spawning peaks identified above are supported by studies by Gonçalves and Erzini (2000). Environmental factors including temperature may affect the timing of spawning.

6.2.2.3 Site size and delineation

Table 58 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting Black bream	**Low** The rationale for the boundary for the site as proposed is unclear. The site does include the Kimmeridge and Dancing Ledge assemblages of nests but does not include the Tanville Ledges nest assemblage.	**Low**	**Moderate** Southern IFCA side scan sonar surveys identified an additional nest assemblage captured within the boundary which now encompasses three nest assemblages identified through robust side scan sonar techniques and supported by SCUBA diving observations through Seasearch and bream researchers. One known nest assemblage remains outside the proposed boundary.

Justification

Original assessment

The rationale for the boundary for the site as proposed was unclear. Whilst the third party-proposed site did include the Kimmeridge and Dancing Ledge assemblages of nests it did not include the Tanville Ledges nest assemblage. Further surveys to identify the extent of the nests were advised as being potentially helpful if protection was to be conferred on areas other than the Kimmeridge and Dancing Ledge nest assemblages. This resulted in a score against this principle of **LOW**.

Additional evidence gathered and revised assessment

The third party proposed boundary remains unchanged and side scan sonar surveys identified an additional nesting site within this boundary (Southern IFCA 2016b) between Kimmeridge and Chapmans Pool. Conversations with bream researchers in the area have indicated that nesting assemblages are most abundant west of Alban's Head and occur in Dancing Ledges, within the third party proposed

boundary. As noted in the original assessment, the proposed boundary does not include a known nesting site at Tanville ledges, however the new side scan evidence, observations by bream researchers together with the existing side scan and diver records for the area, indicates that the third party-proposed boundary does capture the areas known to support the highest densities of nesting bream and for which we have the best evidence (Collins & Mallinson 2012; Dorset Wildlife Trust mobile species proposal 2016; Southern IFCA 2016c, Openshaw *pers. comm.* 2016). There is now a reasonable evidence base to suggest that the size and shape of the third party-proposed MCZ would ensure the viability of the site. The site has been therefore reassessed as **MODERATE** in meeting this principle.

6.2.2.4 Appropriateness of Management

Table 59 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting black bream	**Moderate**	**Moderate**	**Moderate**

Justification

Original assessment

Drawing on experience from Kingmere MCZ, the proposal correctly identifies the main sources of bream mortality during the breeding/nesting, i.e. commercial netting, rod and lining and recreational fishing (rod and line).

The third party-proposed MCZ boundary overlaps the Studland to Portland SAC, and Southern IFCA have introduced a bottom towed gear byelaw to protect the reef feature of the SAC. Reef overlaid with sediment is the supporting habitat for nesting black bream and therefore incidental protection from bottom towed fishing activities was thought to be afforded. As a result a score of **MODERATE** was given against this principle.

Additional evidence gathered and revised assessment

In addition to the evidence in the original third-party proposal and its assessment, further evidence has been provided which demonstrates ongoing activities within the proposed boundary that have the potential to impact the species (Southern IFCA *pers. comm.* 2016b; Openshaw *pers. comm.* 2016). The following activity generates pressures to which the species is highly or moderately sensitive, and may have the potential to impact the conservation status of the species:

- FISHING: Anchored nets/lines

Recreational anglers and charter boats target the nesting bream, despite the distance from home ports, and will remove nesting males from their nests resulting in the loss of the nest through egg predation as well as direct mortality of the adults. Charter and private vessels mainly come from Weymouth and Poole but some launch from Kimmeridge. Some commercial netting targeting predominantly flatfish takes place within the site with vessels coming from Weymouth and Portland, some small operators from Lulworth Cove and Chapman's Pool and possibly some vessels from Poole.

To a lesser extent traps/pots could also cause an impact through abrasion, although the pots would have to be placed on or very near the nests themselves for an impact to occur.

Activities causing a noise (and possibly visual) disturbance have been considered as there is evidence (Openshaw M. & S. *pers. comm.* 2016) that if disturbed nesting bream will move away from the nest allowing predatory species to move in and feed on the eggs. Sufficient disturbance therefore could result in loss of eggs. Activities such as diving could cause such an impact if occurring regularly however any such pressures could be relatively easily mitigated through the development of codes of conduct. Evidence suggests that bream do not respond to vessels in transit or sources of noise that pass over the nests but do not stop (Openshaw M. & S *pers. comm*. 2016).

Activities relating to oil and gas exploration do not currently occur within the third party-proposed site; however seismic surveys were recently carried out (November – December 2016) west of Anvil Point, near Durlston Head, on behalf of oil and gas companies with exploration licences. Natural England have also provided initial advice regarding the feasibility of oil exploration within the UKCS Block 98/11 licence area, which overlaps with the eastern end of Purbeck Coast rMCZ. However a disused well, located outside of the third party-proposed site, is currently the preferred option for drilling. No further correspondence has been received to date regarding either proposal, but there is a possibility that further exploration activity for oil and gas could occur in this area in the foreseeable future. If this feature were to go through to public consultation, then any impact could be managed through licensing.

Other than some localised Minimum Landing Size (MLS) measures in some places around the UK (normally set to 23 centimetres) black bream populations are currently not subject to any UK or EU fisheries management protection measures (quota, EU MLS, spatial or temporal restrictions).

Fish spawning aggregations and nursery habitats are the two most critical aspects in the lifecycle of most fish species. Because spawning aggregations are predictable in space and time they provide an easy opportunity for fishermen to catch large numbers of reproductively active fish, endangering the future viability of the population. This is why the focus of most fisheries management and conservation measures are targeted towards protecting fish stocks during these critical periods.

The apparent site fidelity of bream to nesting sites (Dapling *et al.* 2016), evidence of threats to bream at nesting sites and the absence of wider measures to address these threats, suggests the feature is a suitable candidate for protection through spatial management measures. The evidence held by, or available to, Natural England on activities (pressures and sensitivities) and management is considered to:

i) constitute a comprehensive account of the range of activities which take place within the proposed MCZ, or have an influence within it, that may have an adverse impact on the status of the species proposed for designation,

ii) demonstrate some of the levels at which some of the activities occur,

iii) describe any existing management measures in place within the MCZ,

iv) show that there are ongoing activities in the area, or other identified threats which are likely to give rise to pressures to which the species may be highly or moderately sensitive, and may have the potential to impact the conservation status of the species at the population or sub-population level,

v) consider if existing wider measures may not be sufficient to address any threats posed to the species within the third-party proposed MCZ boundary.

In addition, possible management options (appropriate for providing MCZ protection) have been identified that may reduce the effect of current or future damaging activities on the third-party proposed species.

This additional information further supports that the score for this principal remains as **MODERATE.**

6.2.3 General Management Approach

Table 60 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Activities that have influenced the GMA
Nesting black bream	Recover to favourable condition	Recover due to fishing activities. For further information on activities/pressures which may be of concern in the future if impact increases please see below.

Justification

A **Recover** (to favourable condition) GMA has been advised, resulting from the fisheries activity - recreational angling - that targets, and takes place at sufficient levels, to impact nesting bream in the site.

During the nesting season (April to July) a number of vessels have been observed angling for black bream (Southern IFCA *pers. comm.* 2016b) which removes adults guarding their nests and leaves the nests vulnerable to predation from other species. This site is popular with recreational anglers, who use both private vessels and charter boat operators. This activity has generated a **Recover** (to favourable condition) GMA.

To a lesser extent traps/pots could also cause an impact through abrasion, although the pots would have to be placed on the nests themselves for an impact to occur. Only a low level of this activity is thought to occur within the site (Southern IFCA *pers. comm.* 2016b), therefore the likelihood of pressures being exerted at or beyond the benchmark is low and the condition of the feature is unlikely to be impacted by current levels of effort. However, this activity will require further investigation in the future, particularly if effort increases. A clearer understanding of the level and distribution of potting effort in relation to known nesting locations is needed in order to ensure no overlap is currently occurring, or could in the future, at levels which could be causing an impact through abrasion of the nests. It is therefore possible that some management may be required to prevent potting over nests during the bream nesting season.

Bream are particularly sensitive to disturbance (noise) during nesting (Openshaw *pers. comm.* 2016). Activities such as diving have been observed as causing disturbance of the adult bream guarding nests. However, due to the infrequent nature of this activity in this site and non-lethal effects, diving is not considered to contribute to the Recover GMA at current levels. Additional evidence is needed to understand the impacts of noise (and visual disturbance) and the activity levels should be periodically reviewed to ensure the current assessment remains supported.

Bream nesting grounds occur within an area designated as a military firing range, the Lulworth ranges. Access to these areas is limited to weekends; therefore the ranges may be providing some incidental protection to nesting bream. Usage of and impacts resulting from the ranges are unknown and may require some further investigation to understand any interactions that may be occurring.

The GMA advice given in this document is derived from analysis of potential direct impacts on the feature proposed for protection. For nesting black bream this includes potential impacts on the nests and therefore indirectly includes impacts to the underlying supporting habitat.

As mentioned above, due to its overlap with Studland to Portland SAC, the reef feature is incidentally already afforded protection from bottom towed fishing gear due to a Southern IFCA byelaw. Were the site to be designated however, there may need to be further consideration given to ensuring that the key supporting habitats for the nesting bream are maintained in a suitable state to support the feature.

Black bream spawn in specific habitats characterised by smooth bedrock with a veneer of sediment in shallow water (usually <20m). The removal of or disturbance to the spawning substratum could directly affect black bream populations by reducing the availability of suitable spawning habitat and, indirectly, by displacing breeding fish to suboptimal spawning habitats.

If this third-party proposal leads to the designation of an MCZ at the site, Natural England would provide advice as part of the conservation advice package on the contribution and status of key supporting habitats within the site.

6.3 Poole Rocks third-party proposed highly mobile species MCZ

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6.3.1 Background

This proposal was submitted by Dorset Wildlife Trust with the aim of protecting new locations in Dorset known for nesting black bream and is one of three sites proposed in Dorset. Nesting sites have been recorded off West Sussex, Isle of Wight and Dorset and currently only one site, Kingmere MCZ, is designated to protect this feature. Unlike most other finfish that visit British waters to breed, the black bream exhibit highly selective 'nesting behaviour' (Pawson, 1995). The physical requirements for the nesting sites are quite specific; near-horizontal bedrock with a thin layer of sediment. The overlying sediment is cleared away by the male leaving a circular patch of clean bedrock on which the eggs are laid (Collins & Mallinson, 2012). The males remain at the nest site guarding the nests, until the eggs hatch, and likely return to the same site to nest each year.

The mating season has been reported to occur between April and June (Lythgoe and Lythgoe, 1991). However recent monitoring carried out by Doggett & Openshaw (2015) as part of the black bream project found that in 2015 nesting finished in June and the bream disappeared from some nesting sites for a short period. They returned in late June and early July (22nd June – 2nd July 2015) and over a 10-12 day period re-built nests, laid eggs and successfully guarded and hatched eggs. Secondary spawning peaks identified above are supported by studies by Gonçalves and Erzini (2000).

The Dorset sites aim to protect the nesting adult black bream, the nests and capture suitable nesting habitat (shallow mixed and coarse sediments over near-horizontal bedrock) during the nesting period between April and early July. Evidence suggests that black bream show some site fidelity and nesting bream are specifically targeted by recreational and commercial fisheries, which contributes to the suitability of an MCZ for nesting black bream (Dapling *et al.* 2016; Southern IFCA 2016a)

6.3.2 Assessment against selection criteria

6.3.2.1 Ecological significance

Table 61 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting black bream	**High** There is high quality evidence that identifies the location of nests	**High**	**High** Southern Inshore Fisheries and Conservation Authority (Southern IFCA) side scan surveys were unsuccessful in identifying any further nest assemblages due to rough sea

	throughout the sites. The side scan evidence is relatively recent (Collins & Mallinson 2012). Side scan is a recognised technique for the identification of bream nests.		conditions affecting the quality of the data collected. However Southern IFCA have provided the location of angling marks which occur both inside and just outside the existing MCZ boundary where bream are targeted by anglers. These marks may indicate the presence of further nesting sites. There is good quality evidence that identifies the location of nests within the Poole Rocks MCZ, highlighting the site's ecological significance as a nesting ground for bream. The side scan sonar data was collected in 2010 (James *et al.* 2010; James *et al.* 2011; Collins & Mallinson 2012); so is relatively recent. SCUBA diving surveys have recorded nests at the site since 2010. Observations since 2012 indicate the site is regularly targeted by recreational anglers during the nesting season (Collins & Mallinson 2012; Southern IFCA *pers. comm*. 2016b).

Justification

Original assessment

The site was identified to be of great importance to the life history of the black bream that reside in the English Channel for spawning and nesting behaviours. There was high quality evidence that identified the location of nests throughout the sites. The side scan evidence is relatively recent (Collins and Mallinson 2012). Side scan is a recognised technique for the identification of bream nests. This led to a score of **HIGH**. The side scan evidence used as the basis of this submission was due to be augmented by additional surveys from Southern IFCA conducted during 2016 and expected to report in December 2016. Please see below for further information.

Additional evidence gathered and revised assessment

Southern Inshore Fisheries and Conservation Authorities (Southern IFCA) undertook side scan sonar surveys at Poole Bay MCZ during the bream nesting season in 2016 in an effort to identify bream nests, however the survey was unsuccessful due to inclement weather. Southern IFCA have provided Natural England with a map of the locations of bream angling marks, occurring inside the existing MCZ to the east and just outside the eastern boundary of the site. These marks indicate where anglers have targeted bream during the nesting season and indicate the likely location of further nests (Southern IFCA *pers. comm*. 2016b).

Collins and Mallinson (2012) used side scan sonar surveys (conducted in 2010) as well as SCUBA diving surveys to identify the location of bream nests within the Poole Rocks sites. The nests are typically circular craters 1–2 metres wide, and 5–30 cm in depth, which can clearly be seen using sidescan sonar as groups of circular depressions. Side scan sonar is a recognised technique for the identification of bream nests. During these surveys, 70 individual bream nest craters were identified and measured within the Poole Rocks patch reefs in the south-east and south-west of the site, each nest containing several thousand eggs (Collins & Mallinson 2012). The nesting site in the centre of Poole Bay was revealed by additional sidescan surveys (James *et al*. 2010; James *et al.* 2011). Bream nests have also been

recorded by Seasearch divers at the three sites described by Collins & Mallinson (2012) as well as at four other sites within the Poole Rocks MCZ boundary (Dorset Wildlife Trust bream mobile species proposal, 2016). Most of the Seasearch records were collected between 2000 and 2016.

Fish spawning aggregations and nursery habitats are the two most critical aspects in the lifecycle of most fish species. Because spawning aggregations are predictable in space and time they provide an easy opportunity for fishermen to catch large numbers of reproductively active fish, endangering the future viability of the population. Collins and Mallinson (2012) note that the patch reefs in Poole Rocks "*are the focus of intensive sport angling specifically targeting the bream from April to June".* Anecdotal reports of 40 boats every day in May 2016 off Poole Rocks (30 recreational vessels and 10 charters) have also been received by Natural England, further demonstrating the apparent significance of the site for nesting bream. This is also supported by Southern IFCA observations of 25 boats angling for black bream at this site daily (Southern IFCA *pers. comm*. 2016b).

Black bream is widespread in the Channel but has specific habitat requirements for nesting. Apart from the three third-party proposals in Dorset, the only other known site where nesting occurs on the south coast is off Sussex at Kingmere MCZ. Poole Rocks MCZ is clearly of ecological significance to the life cycle of the species in that it provides the specific supporting habitat required for nesting. This assessment is based on high quality sources of data and corroborated through observations by Seasearch divers and the Southern IFCA collected over a period of 2010-2016 (Collins & Mallinson 2012; James *et al.* 2010; Dorset WT mobile species proposal 2016; Southern IFCA *pers. comm.* 2016b). There is currently just one MCZ in the UK designated for nesting bream; Kingmere MCZ. The site has therefore been scored **HIGH** for the ecological significance principle. The addition of this site in conjunction with the third-party proposals for Southbourne Rough and Purbeck provides good replication of sites for the species in the South of England. Furthermore, the addition of all three proposed MCZs for bream in Dorset would contribute to the connectivity of the network, as they occur within 40-80 kilometres of each other, in line with the advice set out in the ecological network guidance (Natural England and JNCC 2010).

6.3.2.2 Persistence

Table 62 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting black bream	**High** Evidence for persistence within these areas is good. The use of different data types; side scan, commercial and recreational catches and observation by divers and of recreational fishing vessels on the sites provide a clear indication of persistence across the sites.	**High**	**High** Side scan sonar, SCUBA diving surveys, and evidence of recreational sea anglers targeting the site indicate the persistent use of this site by nesting bream over at least a 7 year period between 2010 and 2016 (Collins & Mallinson 2012; Dorset Wildlife Trust mobile species proposal 2016; Southern IFCA, *pers. comm.* 2016b).

Justification

Original assessment

Evidence for persistence within these areas was good. Data of bream nesting in Dorset spans from 2010 to 2016. The use of different data types; side scan, commercial and recreational catches and observation by divers and of recreational fishing vessels on the sites provided a clear indication of persistence across the sites. This led to a score of **HIGH**. It should be noted that nesting bream sightings are now being recorded along the south coast at the start of July. This may indicate a secondary nesting period or that nesting can occur later in the year if conditions earlier in the year are unsuitable. Initial tagging data conducted by Sussex IFCA was referenced in the third-party report. These data, although limited, do provide evidence that there is repeated visitation of individual adult bream year on year to Kingmere MCZ (Dapling *et al.* 2016). That this occurs during the nesting/breading season infers nesting/breeding fidelity by individual bream.

Additional evidence gathered and revised assessment

Southern IFCA undertook side scan sonar surveys at Poole Bay MCZ during the bream nesting season in 2016 in an effort to identify bream nests, however the survey was unsuccessful as rough sea conditions affected the quality of the side scan data collected making it uninterpretable. Southern IFCA have provided Natural England with a map of the locations of bream angling marks, occurring inside the existing MCZ to the east and just outside the eastern boundary of the site. These marks indicate where anglers have targeted bream during the nesting season and indicate the likely location of further nests (Southern IFCA *pers. comm.* 2016b).

A review of relevant research on nesting bream in the site indicates that there is reliable evidence from side scan sonar surveys and SCUBA diving surveys of bream nesting in Poole Rocks MCZ since 2010 (Collins & Mallinson 2012; James *et al.* 2011; James *et al.* 2010). Collins and Mallinson (2012) reports that: "*In the months of May and June, over many years bream nest craters have been found at the perimeter of these patch reefs where the sediment cover is thin, enabling the bream to clear to the bedrock on which a single layer of eggs is laid"*. Seasearch dives between 2010 and 2016 recorded bream nests within the site which further supports the site's significance as an important nesting ground for the species. Recreational sea angling targeting bream has been occurring on the site since at least 2010. Collins & Mallinson (2012) report "*Diving was difficult at some of the Poole Bay sites simply because of the number of angling boats targeting the bream"*. As mentioned above recent Southern IFCA observations corroborate the targeting of the site for bream by recreational sea anglers in 2016.

There is evidence from tagging studies to suggest that black bream show some site fidelity to their nesting ground (Dapling *et al.* 2016). The range of side scan sonar data and diving records from between 2010-2016 confirming the presence of significant numbers of bream nests within the Poole Rocks MCZ indicate that the site is persistently used by bream as a nesting ground. The continued targeting of the site by recreational sea anglers during this 7 year period is further evidence that this site is persistently used by nesting bream (Collins & Mallinson 2012; Southern IFCA *pers. comm.* 2016b). Together the evidence suggests that the score for this principle should be **HIGH.**

It should also be noted that nesting bream sightings have recently been recorded along the south coast at the start of July. This may indicate a secondary nesting period or that nesting can occur later in the year if conditions earlier in the year are unsuitable (Doggett & Openshaw 2015; Pinder *pers. comm.* 2015). Secondary spawning peaks identified above are supported by studies by Gonçalves and Erzini (2000). Environmental factors including temperature may affect the timing of spawning.

6.3.2.3 Site size and delineation

Table 63 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting Black bream	**High** The area suggested is appropriate at this point in time. The site could be extended following further survey data that indicates significant numbers of nests outside of the current MCZ boundary.	**High**	**High** Southern IFCA side scan sonar surveys were not successful in providing evidence of nesting sites outside the current boundary so the original MCZ boundary is assessed as proposed by Dorset Wildlife Trust. The existing MCZ boundary encompasses most of the nesting sites identified through side scan sonar and diving surveys (Collins & Mallinson 2012; James *et al.* 2010; James *et al*. 2011; Dorset Wildlife Trust mobile species proposal 2016) and is therefore deemed appropriate to ensure the viability of the site for nesting bream. Southern IFCA have suggested there are likely to be further nesting areas to the east of the current boundary (Southern IFCA *pers. comm.* 2016b). Additional survey work may identify further nesting grounds outside the current boundary.

Justification

Original assessment

The area suggested ie the existing MCZ was deemed appropriate at the time of the original assessment. It was also suggested that an extended boundary might be identified following further survey in 2016 if the data indicated a significant number of nests outside of the current MCZ boundary. This led to a score of **HIGH**.

Additional evidence gathered and revised assessment

In the original assessment it was suggested that the boundary of this site could be extended to encompass further nesting areas just outside of the current MCZ boundary. Southern IFCA undertook side-scan sonar surveys during the bream nesting season in 2016 in an effort to identify further bream nests just outside the boundary, however the survey was unfortunately unsuccessful due to inclement weather. Southern IFCA have provided Natural England with a map of the locations of bream angling marks, where the surveys were focused. These are situated inside the existing MCZ to the east and just outside the eastern boundary of the site. These marks indicate where anglers have targeted bream during the nesting season and indicate the likely location of further nests (SIFCA *pers. comm*. 2016b). Further survey work may identify nesting grounds outside of the existing MCZ boundary in the future, as indicated by anecdotal evidence and the presence of potential supporting habitat extending beyond the boundary (Southern IFCA *pers. comm.* 2016b; Colenutt & Evans 2015). However, in the absence of any reliable evidence to verify this information at the current time, Natural England is not suggesting an alternative boundary to that proposed by the third-party

The boundary encompasses the majority of the side scan sonar and diving data indicating the presence

of substantial numbers of nests from 2010-2016 (Collins & Mallinson 2012; James *et al.* 2011), although some are on the boundary or just outside. The site also incorporates most of the Seasearch SCUBA diving records of nests, again observed since 2010 (Dorset Wildlife Trust mobile species proposal 2016). Southern IFCA have identified recreational sea angling marks to the east of the site (Southern IFCA *pers. comm.* 2016b), which supports anecdotal evidence of the importance of the site for sea angling targeting bream during the nesting season as well as documented sea angling occurring at the site in 2012 (Collins & Mallinson 2012).

This evidence provides confidence that the size and delineation of the existing MCZ is appropriate to ensure the viability of the site for nesting bream. The evidence base is considered to be reliable and recent and is considered to justify that the score for this principle can be assessed as **HIGH.**

6.3.2.4 Appropriateness of Management

Table 64 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting Black bream	**Moderate**	**Moderate**	**Moderate**

Justification

Original assessment

Existing management was discussed for all three Dorset bream areas, but site management was only discussed for Purbeck and not specifically for the other two sites. Drawing on experience from Kingmere MCZ, the third-party proposal correctly identifies the main sources of bream mortality during the breeding/nesting season, ie commercial netting, rod and lining and recreational fishing (rod and line). This resulted in a score of **MODERATE**.

Additional evidence gathered and revised assessment

In addition to the evidence in the original third-party proposal and its assessment, further evidence has been provided which demonstrates ongoing activities within the proposed boundary that have the potential to impact the species (Southern IFCA *pers. comm.* 2016b; Openshaw *pers. comm.* 2016). The following activities generate pressures to which the species is highly or moderately sensitive, and may have the potential to impact the conservation status of the species:

- FISHING: Anchored nets/lines
- FISHING: Demersal trawls

There is a netting fishery that targets black bream during the nesting season. In addition recreational anglers and charter boats target the nesting bream in this site and will remove nesting adults from their nests which will result in the loss of the nest through egg predation as well as direct mortality of the adults.

Further to this, activities such as beam trawling and otter trawling also take place throughout the year which, if the activity takes place in the nesting areas, will impact the nests and eggs through abrasion pressures. To a lesser extent traps/pots could also cause an impact in the same way although the pots would have to be placed on the nests themselves for an impact to occur.

Activities causing a noise (and possibly visual) disturbance have been considered as there is evidence (M. Openshaw *pers. comm.*) that if disturbed nesting bream will move away from the nest allowing predatory species to move in a feed on the eggs. Sufficient disturbance therefore could result in loss of eggs. Activities such as diving could cause this if occurring regularly however any such pressures could be relatively easily mitigated through the development of codes of conduct. Evidence suggests that bream do not respond to vessels in transit or sources of noise that pass over the nests but do not stop (M. Openshaw *pers. comm.*).

Other than some localised Minimum Landing Size (MLS) measures in some places around the UK (normally set to 23 centimetres) black bream populations are currently not subject to any UK or EU fisheries management protection measures (quota, EU MLS, spatial or temporal restrictions).

Fish spawning aggregations and nursery habitats are the two most critical aspects in the lifecycle of most fish species. Because spawning aggregations are predictable in space and time they provide an easy opportunity for fishermen to catch large numbers of reproductively active fish, endangering the future viability of the population. This is why the focus of most fisheries management and conservation measures are targeted towards protecting fish stocks during these critical periods.

The apparent site fidelity of bream to nesting sites (Dapling *et al.* 2016), evidence of threats to bream at nesting sites and the absence of wider measures to address these threats, suggests the feature is a suitable candidate for protection through spatial management measures. The evidence held by, or available to, Natural England on activities (pressures and sensitivities) and management is considered to:

i) constitute a comprehensive account of the range of activities which take place within the proposed MCZ, or have an influence within it, that may have an adverse impact on the status of the species proposed for designation,
ii) demonstrate some of the levels at which some of the activities occur,
iii) describe any existing management measures in place within the MCZ,
iv) show that there are ongoing activities in the area, or other identified threats which are likely to give rise to pressures to which the species may be highly or moderately sensitive, and may have the potential to impact the conservation status of the species at the population or sub-population level,
v) consider if existing wider measures may not be sufficient to address any threats posed to the species within the third-party proposed MCZ boundary.

In addition, possible management options (appropriate for providing MCZ protection) have been identified that may reduce the effect of current or future damaging activities on the third-party proposed species.

This additional information further supports that the score for this principal remains as **MODERATE.**

6.3.3 General Management Approach

Table 65 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Activities that have influenced the GMA
Black bream (nesting)	Recover to favourable condition	Recover due to fishing activities such as anchored nets and lines (includes angling from an anchored boat) and demersal trawling. For further information on activities/pressures which may be of concern in the future if impact increases please see below.

Justification

A Recover GMA has resulted based on a number of fisheries (recreational and commercial) that target and take place at sufficient levels to impact nesting bream in the site.

During the nesting season (April to early July) up to 25 vessels have been observed angling for black bream daily (Southern IFCA *pers. comm.* 2016b) which removes adults guarding their nests and leave the nests vulnerable to predation from other species. This site is popular for recreational anglers and charter boat operators. Set nets are also placed in this site to catch bream during this period. Both of these activities have generated a **Recover** GMA.

In addition beam trawling (one vessel) and otter trawling (two vessels) takes place throughout the year which, if the activity takes place in the nesting areas, will impact the nests and eggs through abrasion pressures. Due to the potentially large area affected and the mobile nature of this activity, the activity is considered to be impacting the nesting bream and therefore has resulted in a **Recover** GMA.

To a lesser extent traps/pots could also cause an impact in the same way (through abrasion) although the pots would have to be placed on the nests themselves for an impact to occur. Only a low level of this activity is thought to occur in this site (SIFCA *pers. comm.* 2016b) therefore the likelihood of the pressure being exerted at or above the benchmark is considered low and as a result current levels of effort are unlikely to be affecting current condition, based on our best available evidence (therefore the activity has not contributed to the Recover GMA at the current time). However, this activity will require further scrutiny. A clearer understanding of the level and distribution of potting effort in relation to known nesting locations is needed in order to ensure no overlap is currently occurring, or could in the future, at levels which could be causing an impact through abrasion of the nests. It is therefore possible that some management may be required to prevent potting over nests during the bream nesting season.

Bream are particularly sensitive to disturbance (noise) during nesting (M. Openshaw *pers. comm.*). Activities such as diving have been observed as causing disturbance of the adult bream guarding nests. However, due to the infrequent nature of this activity in this site and non-lethal effects, diving at current levels has not contributed to the proposed Recover GMA. Additional evidence is needed to understand the impacts of noise (and visual disturbance) and the activity levels should be periodically reviewed to ensure the current assessment remains supported.

The GMA advice given in this document is derived from analysis of potential direct impacts on the feature proposed for protection. For nesting black bream this includes potential impacts on the nests and therefore indirectly includes impacts to the underlying supporting habitat.

Black bream spawn in specific habitats characterised by smooth bedrock with a veneer of sediment in shallow water (usually <20 metres). The removal of or disturbance to the spawning substratum could directly affect black bream populations by reducing the availability of suitable spawning habitat and, indirectly, by displacing breeding fish to suboptimal spawning habitats.

The Poole Rocks MCZ is designated for moderate energy circalittoral rock and subtidal mixed sediments. These features are likely to function as supporting habitat for nesting bream, therefore any management measures introduced to protect these existing features of the MCZ would likely afford protection to the nesting bream supporting habitat.

Were this feature to be added to the existing MCZ designation, there may need to be further consideration given to ensuring that the key supporting habitats for the nesting bream are maintained in a suitable state to support the feature.

If this third-party proposal leads to the addition of black bream as a feature of the Poole Rocks MCZ, Natural England would provide advice as part of the conservation advice package on the contribution and

status of key supporting habitats within the site.

6.4 Southbourne Rough third-party proposed highly mobile species MCZ

Contents

Background

This proposal was submitted by Dorset Wildlife Trust with the aim of protecting new locations in Dorset known for nesting black bream and is one of three sites proposed in Dorset. Nesting sites have been recorded off West Sussex, Isle of Wight and Dorset and currently only one site, Kingmere MCZ, is designated to protect this feature. Unlike most other finfish that visit British waters to breed, the black bream exhibit highly selective 'nesting behaviour' (Pawson 1995). The physical requirements for the nesting sites are quite specific; near horizontal bedrock with a thin layer of sediment. The overlying sediment is cleared away by the male leaving a circular patch of clean bedrock on which the eggs are laid (Collins & Mallinson 2012). The males remain at the nest site guarding the nests, until the eggs hatch and likely return to the same site to nest each year.

The mating season has been reported to occur between April and June (Lythgoe & Lythgoe 1991). However, recent monitoring carried out by Doggett & Openshaw (2015) as part of the black bream project found that in 2015 while nesting finished in June (and the bream disappeared from some nesting sites for a short period) they returned in late June and early July (22nd June – 2nd July 2015) and over a 10-12 day period re-built nests, laid eggs and successfully guarded and hatched eggs. Secondary spawning peaks identified above are supported by studies by Gonçalves and Erzini (2000).

The Dorset sites aim to protect the nesting adult black bream, the nests and suitable nesting habitat (shallow mixed and coarse sediments over near horizontal bedrock) during the nesting period between April and early July. Evidence suggests that black bream show some site fidelity and nesting bream are specifically targeted by recreational and commercial fisheries, which contributes to the suitability of an MCZ for nesting black bream (Dapling *et al.* 2016; Southern IFCA 2016a)

6.4.1 Assessment against selection criteria

6.4.1.1 Ecological significance

Table 66 Summary of scoring for Principle 1 Ecological Significance

Species proposed	**Original score (Aug 2016)**	**Potential score (Aug 2016)**	**Updated score (taking into account further evidence review, Feb 2017)**
Nesting black bream	**Moderate** Side scan sonar evidence of nests in centre of site as well as records of nests in similar location from diving surveys in 1990 and more recent Seasearch survey. No evidence of nests occurring in other parts of site, although supporting habitat is present and boundary has been drawn to incorporate supporting reef habitat.	**Moderate**	**Moderate**

Justification

Original assessment

This site was scored as a **MODERATE** against the ecological significance principle because there were fewer records of nests within this site (at the time of the survey), and they were not spread throughout the site. However, the site was assessed as being of ecological significance because of the role that it plays in terms of providing suitable nesting substrate. Suitable nesting substrate may, with healthy stocks, be a limiting factor in further stock growth.

Additional evidence gathered and revised assessment

An anecdotal report of recreational sea anglers catching 240 bream over a two hour period with 12 rods at Southbourne Rough two years ago was received from a charter boat operator (Markey *pers. comm.* 2016). Although no new evidence of nests occurring within the site was obtained, a review of the literature did highlight the presence of nests within this site as far back as 1990 when the nesting site was first studied (Collins & Mallinson 2012; Collins 2003). Side scan sonar surveys in 2010 also identified nests in the middle of the site (Collins & Mallinson 2012). There is one Seasearch SCUBA diving record of bream nests occurring within the boundary of the site. The Southbourne Rough proposed site boundary is drawn to capture as much of the rocky habitat as possible, which is expected to be the supporting habitat required by nesting bream. There is good evidence that some of the site is of ecological significance to the lifecycle of bream due to the observed presence of nests occurring persistently over many years. Given the patch reefs extending beyond this nesting area in the centre of the site, it is likely that the wider proposed site supports further nesting assemblages, however the lack of evidence of further nest assembles to support this has resulted in a score of **MODERATE** in relation to the ecological significance criteria.

There is currently just one MCZ in the UK designated for nesting bream, Kingmere MCZ. The addition of this site in conjunction with the proposals for Purbeck MCZ and Poole Rocks MCZ provides good replication of sites for the species in the South of England. Furthermore, the addition of all three proposed MCZs for bream in Dorset would contribute to the connectivity of the network, as they occur within 40-80 kilometres of each other, in line with the advice on connectivity set out in the ecological network guidance (Natural England and JNCC 2010).

6.4.1.2 Persistence

Table 67 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting black bream	**High** The use of different data types; side scan, commercial and recreational catches and observation by divers and of recreational fishing vessels in the sites provide a clear indication of persistence across the sites.	**High**	**High** Side-scan and diving surveys and reports of recreational fishing activity show nesting bream have been present at this site from 1990-2014 (Collins & Mallinson 2012; Dorset Wildlife Trust mobile species proposal 2016; Markey *pers. comm*. 2016).

Justification

Original assessment

Evidence for persistence within these areas was good. The use of different data types; side scan, commercial and recreational catches and observation by divers and of recreational fishing vessels in the sites provided a clear indication of persistence across the site. Therefore scored as **HIGH**.

Additional evidence gathered and revised assessment

An anecdotal report of recreational sea anglers catching 240 bream over a two hour period with 12 rods at Southbourne Rough two years ago was received from a local charter boat operator (Markey *pers. comm*., 2016). Although no new evidence of nests was obtained for this site, a review of the literature did highlight the presence of nests within this site as far back as 1990 when the nesting site was first studied (Collins & Mallinson 2012; Collins 2003). Side scan sonar surveys in 2010, and diving surveys conducted between 2002 - 2012 also identified nests occurring in the middle of the site (Collins & Mallinson 2012).

There is evidence from tagging studies to suggest that black bream show some site fidelity to their nesting ground (Dapling *et al.* 2016). The range of side scan sonar data, diving records and anecdotal recreational sea angling activity reports from between 1990-2014 confirming the presence of bream nests within the Southbourne Rough site indicate that the site is persistently used by nesting bream (Collins & Mallinson 2012; Dorset Wildlife Trust mobile species proposal 2016; Markey *pers. comm.* 2016). Together the evidence suggests that the score for this principle should remain **HIGH.**

It should also be noted that nesting bream sightings have recently been recorded along the south coast at the start of July. This may indicate a secondary nesting period or that nesting can occur later in the year if conditions earlier in the year are unsuitable (Doggett & Openshaw 2015; Pinder *pers. comm.* 2015).

6.4.1.3 Site size and delineation

Table 68 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting black bream	**Moderate** The proposed area is drawn to protect the majority of the rocky area. It is unclear how this relates to nest coverage	**Moderate**	**Moderate** Nest assemblies identified through side scan sonar and diving observations occur at the centre of the site on reef habitat (Collins & Mallinson 2012; Dorset Wildlife Trust mobile species proposal 2016). No further evidence of nests within other parts of the site currently exists, although the reef habitat which extends beyond the centre of the site could support further nesting areas.

Justification

Original assessment

The third party-proposed area was drawn to protect the majority of the rocky area. It was unclear how this relates to nest coverage. The rationale for protection of the nests in this manner was sound, so long as the reef does indeed form the required habitat for bream to nest on, and this resulted in a score of **MODERATE**.

Additional evidence gathered and revised assessment

No new evidence affecting this principle was obtained for this site. Side scan sonar surveys in 2010, and diving surveys conducted between 1990 and 2012, identified bream nests in the centre of the site (Collins & Mallinson 2012). In addition there is one Seasearch SCUBA diving record of bream nests occurring within the boundary, again close to the centre of the site. The Southbourne Rough third party-proposed site boundary is drawn to capture as much of the rocky habitat as possible, which is expected to be the supporting habitat required by nesting bream. Given that the patch reefs extend beyond the nesting area identified in the centre of the site, it is likely that the wider proposed site supports further nesting assemblages, however the lack of evidence of further nests to support this has resulted in a score of **MODERATE** in relation to this principle.

6.4.1.4 Appropriateness of Management

Table 69 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Nesting black bream	**Moderate**	**Moderate**	**Moderate**

Justification

Original assessment

Drawing on experience from Kingmere MCZ, the proposal correctly identified the main sources of bream mortality, i.e. commercial netting, rod and lining and recreational fishing (rod and line) during the nesting period (April to early July). This resulted in a score of **MODERATE**.

Additional evidence gathered and revised assessment

In addition to the evidence in the original third-party proposal and its assessment, further evidence has been provided which demonstrates ongoing activities within the proposed boundary that have the potential to impact the species (Southern IFCA *pers. comm* 2016; Openshaw *pers. comm* 2016). The following activities generate pressures to which the species is highly or moderately sensitive, and may have the potential to impact the conservation status of the species:

- FISHING: Anchored nets/lines
- FISHING: Demersal trawls

There is a netting fishery that targets black bream during the nesting season. In addition recreational anglers and charter boats target the nesting bream in this site and will remove nesting males from their nests which will result in the loss of the nest through egg predation as well as direct mortality of the adults.

Further to this, activities such as beam trawling and otter trawling also take place throughout the year which, if the activity takes place in the nesting areas, will impact the nests and eggs through abrasion pressures. To a lesser extent traps/pots could also cause an impact in the same way although the pots would have to be placed on the nests themselves for an impact to occur.

Activities causing a noise (and possibly visual) disturbance have been considered as there is evidence (M. Openshaw *pers. comm*.) that if disturbed, nesting bream will move away from the nest allowing predatory species to move in a feed on the eggs. Sufficient disturbance therefore could result in loss of eggs. Activities such as diving could cause this if occurring regularly. However such impacts could be relatively easily mitigated through development of codes of conduct. Evidence suggests (Openshaw *pers. comm.* 2016) that bream do not respond to vessels in transit or sources of noise that pass over the nests but do not stop.

Other than some localised Minimum Landing Size (MLS) measures in some places around the UK (normally set to 23 centimetres) black bream populations are currently not subject to any UK or EU fisheries management protection measures (quota, EU MLS, spatial or temporal restrictions).

Fish spawning aggregations and nursery habitats are the two most critical aspects in the lifecycle of most fish species. Because spawning aggregations are predictable in space and time they provide an easy opportunity for fishermen to catch large numbers of reproductively active fish, endangering the future viability of the population. This is why the focus of most fisheries management and conservation measures are targeted towards protecting fish stocks during these critical periods.

The apparent site fidelity of bream to nesting sites (Dapling *et al.* 2016), evidence of threats to bream at nesting sites and the absence of wider measures to address these threats, suggests the feature is a suitable candidate for protection through spatial management measures. The evidence held by, or available to, Natural England on activities (pressures and sensitivities) and management is considered to:

i) constitute a comprehensive account of the range of activities which take place within the proposed MCZ, or have an influence within it, that may have an adverse impact on the status of the species

proposed for designation,

ii) demonstrate some of the levels at which some of the activities occur,

iii) describe any existing management measures in place within the MCZ,

iv) show that there are ongoing activities in the area, or other identified threats which are likely to give rise to pressures to which the species may be highly or moderately sensitive, and may have the potential to impact the conservation status of the species at the population or sub-population level,

v) consider if existing wider measures may not be sufficient to address any threats posed to the species within the third-party proposed MCZ boundary.

In addition, possible management options (appropriate for providing MCZ protection) have been identified that may reduce the effect of current or future damaging activities on the third-party proposed species.

This additional information further supports that the score for this principal remains as **MODERATE.**

6.4.2 General Management Approach

Table 70 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Activities that have influenced the GMA
Nesting black bream	Recover to favourable condition	Recover due to fishing activities such as anchored nets and lines (includes angling from an anchored boat) and demersal trawling. For further information on activities/pressures which may be of concern in the future if impact increases please see below.

Justification

A recover GMA has resulted based on a number of fisheries (recreational and commercial) that target, and take place at sufficient levels, to impact nesting bream in the site.

During the nesting season (April to early July) a number of vessels have been observed angling for black bream (SIFCA *pers. comm.* 2016b) which removes adults guarding their nests and leaves the nests vulnerable to predation from other species. This site is popular for recreational anglers and charter boat operators. Set nets are also placed in this site to catch bream during this period. Both of these activities have generated a **RECOVER** (to favourable condition) GMA.

In addition beam trawling and otter trawling also takes place throughout the year which, if the activity takes place in the nesting areas, will impact the nests and eggs through abrasion pressures. Due to the potentially large area affected ie, given the mobile nature of the activity, this activity is considered to be impacting the nesting bream and therefore has resulted in a **RECOVER** (to favourable condition) GMA.

To a lesser extent traps/pots could also cause an impact in the same way (through abrasion) although the pots would have to be placed on the nests themselves for an impact to occur. Only a low level of this activity is thought to occur in this site (SIFCA *pers. comm.* 2016b) therefore the likelihood of the pressure being exerted at or above the benchmark is considered low and as a result current levels of effort are unlikely to be affecting current condition, based on our best available evidence (therefore the activity has not contributed to the Recover GMA at the current time). However, this activity will require further scrutiny. A clearer understanding of the level and distribution of potting effort in relation to known nesting

locations is needed in order to ensure no overlap is currently occurring, or could in the future, at levels which could be causing an impact through abrasion of the nests. It is therefore possible that some management may be required to prevent potting over nests during the bream nesting season.

Bream are particularly sensitive to disturbance (noise) during nesting (Openshaw *pers. comm.* 2016). Activities such as diving have been observed as causing disturbance to the adult bream guarding nests. However, due to the infrequent nature of this activity in this site and non-lethal effects, diving at current levels has not contributed to the proposed Recover GMA. Additional evidence is needed to understand the impacts of noise (and visual disturbance) and the activity levels should be periodically reviewed to ensure the current assessment remains supported.

The GMA advice given in this document is derived from analysis of potential direct impacts on the feature proposed for protection. For nesting black bream this includes potential impacts on the nests and therefore indirectly includes impacts to the underlying supporting habitat. Were the site to be designated however, there may need to be further consideration given to ensuring that the key supporting habitats for the nesting bream are maintained in a suitable state to support the feature.

Black bream spawn in specific habitats characterised by smooth bedrock with a veneer of sediment in shallow water (usually <20 metres). The removal of, or disturbance to, the spawning substratum could directly affect black bream populations by reducing the availability of suitable spawning habitat and, indirectly, by displacing breeding fish to suboptimal spawning habitats.

If this third party proposal leads to the designation of an MCZ at the site, Natural England would provide advice as part of the conservation advice package on the contribution and status of key supporting habitats within the site.

6.5 Bideford to Foreland Point third-party proposed highly mobile species MCZ

Contents

6.5.1 Background

This third-party proposal was submitted by the RSPB for the purpose of i) adding a seaward extension 'buffer' around the existing colony of common guillemots and razorbills at the West Exmoor Coast and Woods SSSI that would lie entirely within the boundary of the proposed Bideford to Foreland Point MCZ, and ii) adding common guillemot and razorbill as new features of that MCZ.

The conservation aim of this third-party proposal in the case of both common guillemot and razorbill would be to provide a 'generic' maintenance extension to the colony protected on land through the West Exmoor Coast and Woods SSSI, so that the same populations would also receive protection through the MCZ from direct impacts whilst at sea engaged in "active" maintenance behaviours close to their colony.

Generic maintenance extensions have been put in place to protect breeding common guillemots and razorbills at the largest colonies of these species in England in which their numbers merit their status as features of a Special Protection Area. Application of the same approach at this site within an MCZ, in conjunction with third-party proposals to do the same at four other auk colonies in England, would see the same approach applied to all five of the next most important breeding common guillemot colonies in England and to the second and third most important razorbill colonies in England. This would make a significant contribution to delivery of a representative and replicated suite of sites that would afford protection to these species at sea in the breeding season in England. This third-party proposal meets the JNCC guidance on seaward extensions to seabird colonies supporting auks (McSorley *et al.* 2003).

6.5.2 Assessment against selection criteria

6.5.2.1 Ecological significance

Table 71 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	**Moderate** (in terms of site-specific evidence)	**Moderate**	**High** Historical count data from 1960s-1990s have confirmed the long-term significance of the numbers of this feature within the SSSI colony which this MCZ seeks to protect at sea. A re-consideration of recent count data in comparison with that from other sites in England (Annex 6 in the

			Advice Overview document) shows the breeding colony at West Exmoor Coast and Woods SSSI to have been the fifth most important colony for common guillemot at the time of last national census (Seabird 2000) and, based on more recent count data where available, to be the 6th most important colony in England now. It is the 3rd most important site for common guillemot within the Regional MCZ Project Area. Work by JNCC has clearly demonstrated the persistent use by breeding auks of waters within one kilometre of their colonies for conducting critical "active maintenance behaviour" and that this is a consistent pattern across colonies.
Razorbill	**Moderate** (in terms of site-specific evidence)	**Moderate**	**High** Historical count data from 1960s-1990s have confirmed the long-term significance of the numbers of this feature within the SSSI colony which this MCZ seeks to protect at sea. A re-consideration of recent count data in comparison with that from other sites in England (Annex 6 in the Advice Overview document) shows the breeding colony at West Exmoor Coast and Woods SSSI to have been the 6th most important colony for razorbill at the time of last national census (Seabird 2000) and, based on more recent count data where available, to be the third most important colony in England now. It is the second most important site for razorbill within the Regional MCZ Project Area. Work by JNCC has clearly demonstrated the persistent use by breeding auks of waters within one kilometre of their colonies for conducting critical 'active maintenance behaviour' and that this is a consistent pattern across colonies.

Justification

Common guillemot

Original assessment

This third-party proposal is to form a one kilometre 'generic maintenance extension' extending offshore around the existing coastal SSSI in which the features nest in order to afford site-based protection within the sea area considered most likely to support maintenance activities of its features.

Evidence was provided that the West Exmoor Coast and Woods colony is an important site (it is a SSSI) and has been for some time. Reference was made to generic evidence regarding the ecological significance of sea areas adjacent to colonies to the proposed features of the site (for maintenance

activities). There was, however, no site specific distribution data at all in terms of birds on the sea. So, this lack of information suggesting usage of the actual MCZ site, coupled with the information on colony size suggested at best a score of **MODERATE**.

The argument in favour of the ecological significance of this area of sea is based on expert judgement which has seen 'generic' maintenance extensions of this type applied to many SPA seabird colonies around the UK, as a matter of best practice. That approach has an empirical evidence base, based on research conducted by JNCC and published in various JNCC reports and referenced in the third-party proposal. This can be considered a high quality data source (albeit not site-specific) in regard of the ecological significance of maintenance extensions to the birds at a given colony. However, when considering ecological significance in a wider context, the relative importance of the numbers of birds at the colony must be considered and that leads to the assessment given here.

Additional evidence gathered and revised assessment

Additional, historical colony count data at the West Exmoor Coast and Woods SSSI from the 1960s-1990s have been collated and combined with the more recent data (post 2000) provided in RSPB's proposal (Table 2). Counts from Operation Seafarer and Seabird Colony Register are, like that from Seabird 2000, derived from the three national seabird censuses that have taken place in the UK.

Table 72 Counts of breeding common guillemot at the West Exmoor Coast and Woods SSSI. Data from JNCC Seabird Monitoring Programme unless otherwise stated[18]

Species	Operation Seafarer (1969-1970)	Seabird Colony Register (1985-1988)	SSSI citation (1986)	Exmoor Natural History Society (1992)	2001 (Seabird 2000)	2008	2016
Common guillemot	462	985	N/A	480 (birds on nests)	862	1,091	2,706

This additional evidence confirms the long-standing significance of the numbers of common guillemot supported by the SSSI colony which this third-party proposal seeks to afford protection to while at sea close to their colony.

A re-consideration of the more recent seabird colony count data (see Annex 6 in the Advice Overview document) reveals that based on the national Seabird 2000 census data, the number of common guillemots at the West Exmoor Coast and Woods SSSI colony at that time (862 individuals) made this site the fifth largest common guillemot colony in England, or third largest site not afforded protection as an SPA in England. Since Seabird 2000, numbers of common guillemot have increased at West Exmoor Coast and Woods SSSI (latest count in 2016 being 2,706) but have also increased at many other sites. Based on more recent count data at colonies, where these are available, West Exmoor Coast and Woods SSSI now holds the sixth largest common guillemot colony in England (or fifth largest considering that colonies at Filey are now incorporated into the larger Flamborough & Filey Coast pSPA).

[18] JNCC Seabird Monitoring Programme http://jncc.defra.gov.uk/page-1550

Maintenance extensions have been proposed within the Flamborough and Filey Coast pSPA and for the Farne Islands colony within the surrounding Northumberland Marine pSPA. Thus, the ecological significance of providing protection to breeding common guillemots by way of generic maintenance extensions has been acknowledged at the two largest common guillemot colonies in England. The third-party proposal to do so at the West Exmoor Coast and Woods SSSI within the Bideford to Foreland Point MCZ would similarly be of considerable ecological significance to the birds at this colony, and of wider ecological significance to the species in England given that, aside from the SPAs already afforded protection in this way, this colony is the third largest common guillemot colony in England.

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 in the Advice Overview document. In summary, McSorley *et al.* (2003) present the results of analyses of repeated boat-based transect surveys conducted in 2001 around six seabird colonies. During these surveys the locations of approximately 17,000 common guillemots and 1,400 razorbills engaged in active maintenance behaviours were mapped. The density of these birds was analysed as a function of increasing distance from the colonies and revealed a strikingly consistent pattern of elevated densities within one kilometre of each colony in comparison to much reduced densities beyond that distance (McSorley *et al.* 2003; Annex 5 of the Advice Overview document). This evidence presented by McSorley *et al*. (2003) is considered to: i) constitute a significant body of reliable, empirically-based evidence supporting the conclusion that these areas of water have clear ecological significance to the life-histories of the species for designation, ii) provide evidence that is based on at least one high quality source of data and iii) make a convincing case that for auks, these waters make a significant contribution to the life cycle of the species due to their role in providing supporting habitats or processes.

Thus, it is considered that the provision of protection of waters within a one kilometre buffer area around the common guillemot colony at West Exmoor Coast and Woods SSSI via the Bideford to Foreland Point MCZ will make a contribution to both the representivity and replication of sites within the MPA network. This reflects both the size of the colony in an English context, and its position in the south-west of England. It is on one hand far from the only two English colonies where such measures are nearer to being implemented (Flamborough and Filey Coast pSPA and Northumberland Marine pSPA), but on the other hand is near several other common guillemot colonies in south-west England where such MCZ third-party proposals are being considered. All of this is re-considered to merit a score of **HIGH** in regard to Principle 1 Ecological Significance.

Razorbill

Original assessment

This third-party proposal was to form a one kilometre 'generic maintenance extension' extending offshore around the existing coastal SSSI in which the features nest in order to afford site-based protection within the sea area considered most likely to support maintenance activities of its features.

Evidence was provided that the West Exmoor Coast and Woods colony is an important site (it is a SSSI) and has been for some time. Reference was made to generic evidence regarding the ecological significance of sea areas adjacent to colonies to the proposed features of the site (for maintenance activities). There was, however, no site specific distribution data at all in terms of birds on the sea. So, this lack of information suggesting usage of the actual MCZ site, coupled with the information on colony size suggested at best a **MODERATE** assessment.

The argument in favour of the ecological significance of this area of sea is based on expert judgement which has seen 'generic' maintenance extensions of this type applied to many SPA seabird colonies around the UK, as a matter of best practice. That approach has an empirical evidence base, based on research conducted by JNCC and published in various JNCC reports and referenced in the third-party

proposal. This can be considered a high quality data source (albeit not site-specific) in regard of the ecological significance of maintenance extensions to the birds at a given colony. However, when considering ecological significance in a wider context, the relative importance of the numbers of birds at the colony must be considered and that leads to the assessment given here.

Additional evidence gathered and revised assessment

Additional, historical colony count data at the West Exmoor Coast and Woods SSSI from the 1960s-1990s have been collated and combined with the more recent data (post 2000) provided in RSPB's proposal (Table 3). Counts from Operation Seafarer and Seabird Colony Register are, like that from Seabird 2000, derived from the three national seabird censuses that have taken place in the UK.

Table 73 Counts of breeding razorbill at the West Exmoor Coast and Woods SSSI. 41 individuals have been removed from the data for razorbill in 2008 as the relevant sub-section of the colony was only partially within the SSSI.

Data from JNCC Seabird Monitoring Programme[1] unless otherwise stated

Species	Operation Seafarer (1969-1970)	Seabird Colony Register (1985-1988)	SSSI citation (1986)	Exmoor Natural History Society (1992)	2001 (Seabird 2000)	2008	2016
Razorbill	704	734	N/A	400 (birds on nests)	187	631	726

This additional evidence confirms the long-standing significance of the numbers of razorbill supported by the SSSI colony which this third-party proposal seeks to afford protection to while at sea close to their colony.

A re-consideration of the more recent seabird colony count data (see Annex 6 in the Advice Overview document) reveals that based on the national Seabird 2000 census data, the number of razorbills at the West Exmoor Coast and Woods SSSI colony at that time (187 individuals) made this site the sixth largest razorbill colony in England, or fourth largest site not afforded protection as an SPA in England. Since Seabird 2000, numbers of razorbill have increased at West Exmoor Coast and Woods SSSI (latest count in 2016 being 726) but have also increased at many other sites. Based on more recent count data at colonies, where these are available, West Exmoor Coast and Woods SSSI now holds the third largest razorbill colony in England.

Maintenance extensions have been proposed within the Flamborough and Filey Coast pSPA and for the Farne Islands colony within the surrounding Northumberland Marine pSPA. Thus, the ecological significance of providing protection to breeding Razorbill by way of generic maintenance extensions has been acknowledged at the two largest auk colonies in England. The third-party proposal to do so at the West Exmoor Coast and Woods SSSI within the Bideford to Foreland Point MCZ would similarly be of considerable ecological significance to the birds at this colony, and of wider ecological significance to the species in England given that, aside from the SPAs already afforded protection in this way, this colony is the second largest razorbill colony in England.

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 of the Advice Overview document. In summary, McSorley *et al.* (2003) present the results of

analyses of repeated boat-based transect surveys conducted in 2001 around six seabird colonies. During these surveys the locations of approximately 17,000 common guillemots and 1,400 razorbills engaged in active maintenance behaviours were mapped. The density of these birds was analysed as a function of increasing distance from the colonies and revealed a strikingly consistent pattern of elevated densities within one kilometre of each colony in comparison to much reduced densities beyond that distance (McSorley *et al.* 2003; Annex 5 of the Advice Overview document). This evidence presented by McSorley *et al*. (2003) is considered to: i) constitute a significant body of reliable, empirically-based evidence supporting the conclusion that these areas of water have clear ecological significance to the life-histories of the species for designation, ii) provide evidence that is based on at least one high quality source of data and iii) make a convincing case that for auks, these waters make a significant contribution to the life cycle of the species due to their role in providing supporting habitats or processes.

Thus, it is considered that the provision of protection of waters within a one kilometre buffer area around the razorbill colony at West Exmoor Coast and Woods SSSI via the Bideford to Foreland Point MCZ will make a contribution to both the representivity and replication of sites within the MPA network. This reflects both the size of the colony in an English context, and its position in the south-west of England. It is on one hand far from the only two English colonies where such measures are nearer to being implemented (Flamborough and Filey Coast and Northumberland Marine pSPAs), but on the other hand is near several other razorbill colonies in SW England where such MCZ third-party proposals are being considered. All of this is re-considered to merit a score of **HIGH** in regard to Principle 1 Ecological Significance

6.5.2.2 Persistence

Table 74 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	**Moderate** (site specific), **High** (generic)	**High**	**High** A review of historical data has confirmed the persistence of the presence of common guillemot at the main source colony (West Exmoor Coast and Woods) since at least the 1960s with a general increasing trend in numbers since then. Seabird 2000 census data indicates that this colony was the 5th most important common guillemot colony in England at that time. More recent count data from the colony in comparison with more recent count data from other English colonies (where available) show that this colony has maintained its importance and is now the 6th (or 5th if Flamborough and Filey considered as one) most important site in England. Work by JNCC has clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that

			this is a consistent pattern across colonies.
Razorbill	**Moderate** (site specific), **High** (generic)	**High**	**High** A review of historical data has confirmed the persistence of the presence of Razorbill at the main source colony (West Exmoor Coast and Woods) since at least the 1960s. Seabird 2000 census data indicates that this colony was the 6th most important razorbill colony in England at that time. More recent count data from the colony in comparison with more recent count data from other English colonies (where available) show that this colony has increased its importance and is now the 3rd most important site in England. Work by JNCC has clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.

Justification

Common guillemot

Original assessment

There was good reliable evidence in the third-party proposal of the long-term presence of these features in the adjacent SSSI. Both species were present when the SSSI was notified in 1987 and recent evidence was given regarding the population sizes of the two proposed features at the adjacent SSSI (2001-2013). Both populations are increasing. This could have merited a **HIGH** score for persistence. However, this information is not direct evidence of usage of sea areas at higher densities than surrounding waters over that period. No site-specific at sea survey or modelled density data was provided, so in terms of site specific evidence of persistent use of the waters within the MCZ, confidence was assessed as **MODERATE**.

However, if one considers that the principle of maintenance extensions applies to SSSIs as it has been applied to SPAs, then one might consider the confidence in that generic evidence base to be high in that analysis of empirical data indicates that sea areas within one kilometre of seabird colonies will in general support persistently relatively high levels of usage by auks for conducting maintenance behaviours. This can be considered one high quality data source (albeit not site-specific) meriting a **HIGH** score for persistence.

Additional evidence gathered and revised assessment

As described above, additional historic breeding abundance data have been obtained, confirming the persistent presence of breeding common guillemot in significant numbers within the West Exmoor Coast and Woods SSSI since at least the late 1960s (Table 2). Since then, common guillemot at the colony

have increased significantly in numbers (Table 2). These data constitute a significant body of reliable, empirically-based evidence that supports the conclusion that this stretch of coast has a persistent presence of the feature at higher densities than surrounding areas.

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 of the Advice Overview document. As noted above, this study provides the empirical survey data and analysis demonstrating the consistent within species and across colonies occurrence of persistently higher densities of auks engaged in active maintenance behaviour in waters within one kilometre of their breeding colony than further offshore. This evidence presented by McSorley *et al.* (2003) is considered to: i) constitute a significant body of reliable, empirically-based evidence to support the conclusion that the area of sea within one kilometre of a guillemot colony is likely to have persistent presence at higher densities of the species than the surrounding waters and ii) provide one high quality source of data with large and representative sample sizes, collected over an adequate period of time and analysed according to best practice that yields outputs that have low levels of uncertainty.

Thus, this information, together with the fixed location of what is the sixth largest common guillemot colony in England, provides a compelling case for the persistent presence at higher densities of common guillemots during the breeding season within the proposed one kilometre buffer around the West Exmoor Coast and Woods SSSI (to be included within the Bideford to Foreland Point MCZ) than in other waters immediately local to the colony, regionally across south-west England and indeed in comparison to waters around most of the rest of England. This suggests that the score for this principle can be re-assessed as **HIGH.**

Razorbill

Original assessment

There was good reliable evidence in the third-party proposal of the long-term presence of these features in the adjacent SSSI. Both species were present when the SSSI was notified in 1987 and recent evidence was given regarding the population sizes of the two proposed features at the adjacent SSSI (2001-2013). Both populations are increasing. This could have merited a high score for persistence. However, this information was not direct evidence of usage of sea areas at higher densities than surrounding waters over that period. No site-specific at sea survey or modelled density data was provided, so in terms of site specific evidence of persistent use of the waters within the MCZ, confidence was assessed as **MODERATE**.

However, if one considers that the principle of maintenance extensions applies to SSSIs as it has been applied to SPAs, then one might consider the confidence in that generic evidence base to be high in that analysis of empirical data indicates that sea areas within one kilometre of seabird colonies will in general support persistently relatively high levels of usage by auks for conducting maintenance behaviours. This can be considered one high quality data source (albeit not site-specific) meriting a **HIGH** score for persistence.

Additional evidence gathered and revised assessment

As described above, additional historic breeding abundance data have been obtained, confirming the persistent presence of breeding razorbill in significant numbers within the West Exmoor Coast and Woods SSSI since at least the late 1960s (Table 3). Numbers have fluctuated over the last 50 years but are today very similar to numbers seen 50 years ago (Table 3). These data constitute a significant body of reliable, empirically-based evidence that supports the conclusion that this stretch of coast has a persistent presence of the feature at higher densities than surrounding areas.

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 in the Advice Overview document. As noted above, this study provides the empirical survey data and analysis demonstrating the consistent within species and across colonies occurrence of persistently higher densities of auks engaged in active maintenance behaviour in waters within one kilometre of their breeding colony than further offshore. This evidence presented by McSorley *et al.* (2003) is considered to: i) constitute a significant body of reliable, empirically-based evidence to support the conclusion that the area of sea within one kilometre of a Razorbill colony is likely to have persistent presence at higher densities of the species than the surrounding waters and ii) provide one high quality source of data with large and representative sample sizes, collected over an adequate period of time and analysed according to best practice that yields outputs that have low levels of uncertainty.

Thus, this information, together with the fixed location of what is the third largest razorbill colony in England, provides a compelling case for the persistent presence at higher densities of razorbills during the breeding season within the proposed one kilometre buffer around the West Exmoor Coast and Woods SSSI (to be included within the Bideford to Foreland Point MCZ) than in other waters immediately local to the colony, regionally across south-west England and indeed in comparison to waters around most of the rest of England. This suggests that the score for this principle can be re-assessed as **HIGH.**

6.5.2.3 Size and delineation

Table 75 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	**Moderate** (site specific). **High** (generic) (though Ecological Network Guidance principles re boundary setting not applied).	**High**	**High** Work by JNCC has clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.
Razorbill	**Moderate** (site specific). **High** (generic) (though Ecological Network Guidance principles re boundary setting not applied).	**High**	**High** Work by JNCC has clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.

Justification

Common guillemot

Original assessment

The third-party proposal was for a one kilometre buffer applied for the auk species that are features of the neighbouring SSSI. There was no empirical site-specific survey data provided to support the boundary to

the proposed area. This would have merited a score of **LOW** at best. However, this third-party proposal made no change to the existing MCZ boundary and, on the basis of what is known about auk maintenance areas, it is highly likely that the MCZ boundary as it stands would be more than sufficient for the purpose of maintaining site viability for the proposed new features. This suggested a score of **MODERATE**. Furthermore, the proposed boundary does follow the recommendations of reports (referred to in the proposal) published by JNCC regarding the extent of generic maintenance extensions for auks, i.e. one kilometre. This can be considered one high quality data source (albeit not site-specific), such that this generic evidence base could be scored as **HIGH.**

Additional evidence gathered and revised assessment

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 of the Advice Overview document. As described above, this study provides the empirical survey data and analysis demonstrating the consistent within species and across colonies occurrence of persistently higher densities of auks engaged in active maintenance behaviour in waters within one kilometre of their breeding colony than further offshore. This evidence presented by McSorley *et al.* (2003) is considered to: i) constitute a strong evidence base to demonstrate that the size and shape of the area included within the proposed MCZ boundary is appropriate to that required to ensure the viability of the site; ii) provide a significant body of reliable, recent, empirically-based evidence on which to determine the location of the proposed MCZ boundary, iii) be based on underlying data that are considered to have good quality with large and representative sample sizes, appropriately collected and analysed according to best practice and to yield boundaries that have low levels of uncertainty in their construction.

The seaward limit to the one kilometre buffer zone around the SSSI, whether configured as a series of arcs (as in the RSPB's proposal) or re-configured as a series of straight lines between nodes (to bring the setting of the seaward boundary of the proposed one kilometre buffer more in line with the guidelines regarding boundary setting for highly mobile species MCZs outlined in JNCC and Natural England (2016) and also with the recommendations set out in McSorley *et al.* (2003)) makes no difference to the seaward boundary of the proposed Bideford to Foreland Point MCZ which entirely contains either configuration of the one kilometre buffer.

In the light of the above, the score for this principle can be re-assessed as **HIGH.**

Razorbill

Original assessment

The third-party proposal was for a one kilometre buffer applied for the auk species that are features of the neighbouring SSSI. There was no empirical site-specific survey data provided to support the boundary to the proposed area. This would have merited a score of **LOW** at best. However, this third-party proposal made no change to the existing MCZ boundary and, on the basis of what is known about auk maintenance areas it is highly likely that the MCZ boundary as it stands will be more than sufficient for the purpose of maintaining site viability for the proposed new features. This suggested a score of **MODERATE.** Furthermore, the proposed boundary does follow the recommendations of reports published by JNCC (referred to in the proposal) regarding the extent of generic maintenance extensions for auks, i.e. one kilometre. This can be considered one high quality data source (albeit not site-specific), such that this generic evidence base could be scored as **HIGH.**

Additional evidence gathered and revised assessment

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic

maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 of the Advice Overview document. As described above, this study provides the empirical survey data and analysis demonstrating the consistent within species and across colonies occurrence of persistently higher densities of auks engaged in active maintenance behaviour in waters within one kilometre of their breeding colony than further offshore. This evidence presented by McSorley *et al.* (2003) is considered to: i) constitute a strong evidence base to demonstrate that the size and shape of the area included within the proposed MCZ boundary is appropriate to that required to ensure the viability of the site; ii) provide a significant body of reliable, recent, empirically-based evidence on which to determine the location of the proposed MCZ boundary, iii) be based on underlying data that are considered to have good quality with large and representative sample sizes, appropriately collected and analysed according to best practice and to yield boundaries that have low levels of uncertainty in their construction.

The seaward limit to the one kilometre buffer zone around the SSSI, whether configured as a series of arcs (as in RSPB's proposal) or re-configured as a series of straight lines between nodes (to bring the setting of the seaward boundary of the proposed one kilometre buffer more in line with the guidelines regarding boundary setting for highly mobile species MCZs outlined in JNCC and Natural England (2016) and also with the recommendations set out in McSorley *et al.* (2003)) makes no difference to the seaward boundary of the proposed Bideford to Foreland Point MCZ which entirely contains either configuration of the one kilometre buffer.

In the light of the above, the score for this principle can be re-assessed as **HIGH.**

6.5.2.4 Appropriateness of Management

Table 76 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	**Not met**	**Moderate**	**Moderate** Additional site specific evidence has been provided of potentially impacting activities occurring within the proposed area and any relevant management measures currently in place.
Razorbill	**Not met**	**Moderate**	**Moderate** Additional site specific evidence has been provided of potentially impacting activities occurring within the proposed area and any relevant management measures currently in place.

Justification

Common guillemot and razorbill

Original assessment

The third-party proposal stated that "at the proposed site both species are under pressure from disturbance from recreation activities and from shipping lanes". Although it stated (regarding disturbance) "Given the local occurrence of this threat…" no actual evidence was presented regarding the presence of

any such ongoing activities and pressures/threats they pose. In regard to bycatch and pollution incidents it was noted that the species are sensitive to such pressures. However, the third-party proposal stated that "these pressures are not currently considered to pose a significant threat to these species at this site…" even though the existing MCZ is shown to already include several areas in which there are fixed net restrictions. Otherwise, all the information provided was generic and/or discussing potential pressures/threats to which the features may be sensitive. This therefore had to be scored **NOT MET**.

Natural England is however aware that within its GIS holdings there is evidence of several activities occurring within the proposed area that could impact the proposed new features (see other comments below). Further assessment of this information was considered to potentially enable a revision of the score in regard of this principle (to e.g. **MODERATE**).

Additional evidence gathered and revised assessment

Further evidence has been provided which demonstrates ongoing activities within or adjacent to the proposed boundary that have the potential to impact the proposed species. The following activities generate pressures to which the species is highly or moderately sensitive to, and may have the potential to impact the conservation status of the species.

- FISHING: anchored nets and lines (removal of non-target species)
- COMMERCIAL SHIPPING: vessel movements (above water noise; visual disturbance)
- RECREATION: powerboating with an engine (above water noise; visual disturbance)
- RECREATION: sailing without an engine (above water noise; visual disturbance)
- RECREATION: non-motorised watercraft (above water noise; visual disturbance)

Common guillemot and razorbill are both susceptible to bycatch and we have anecdotal evidence from Devon & Severn IFCA (*pers. comm*.) suggesting that it is likely that some netting occurs within the proposed boundary. Current management of netting within the site includes a Devon & Severn IFCA fixed engine byelaw covering half of the proposed area, between Foreland Point and Duty Point (West of Wringcliff Bay).

Common guillemot and razorbill are both susceptible to visual and noise disturbance generated by the movement of both commercial and recreational crafts including non-motorised water craft. These activities are known to occur throughout the site; however there is currently no management in place.

The evidence held by, or available to, Natural England on activities (pressures and sensitivities) and management is considered to: i) constitute a comprehensive account of the range of activities which take place within the proposed MCZ, or have an influence within it, that may have an adverse impact on the status of the species proposed for designation, ii) demonstrate some of the levels at which some of the activities occur, iii) describe any existing management measures in place within the MCZ, iv) show that there are ongoing activities in the area, or other identified threats which are likely to give rise to pressures to which the species may be highly or moderately sensitive, and may have the potential to impact the conservation status of the species at the population or sub-population level, v) consider if existing wider measures may not be sufficient to address any threats posed to the species within the third-party proposed MCZ boundary. In addition, possible management options (appropriate for providing MCZ protection) have been identified that may reduce the effect of current or future damaging activities on the third-party proposed species.

Based on the comprehensive account provided of site specific activities and current management measures the score for this principal can be re-assessed as **MODERATE**.

6.5.3 General Management Approach

Table 77 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Activities that have influenced the GMA
Common guillemot	Maintain in favourable condition	A maintain GMA has been proposed due to SSSI condition assessment of 'favourable condition' for the same population of birds. For further information on activities/pressures which may be of concern in the future if impact increases please see below.
Razorbill	Maintain in favourable condition	A maintain GMA has been proposed due to SSSI condition assessment of 'favourable condition' for the same population of birds. For further information on activities/pressures which may be of concern in the future if impact increases please see below.

Justification

Common guillemot

There is direct condition evidence from West Exmoor Coast and Woods SSSI condition assessment which confirms that this feature is in favourable condition. A GMA of Maintain is advised using this direct condition evidence, and as a result a vulnerability assessment has not been carried out (as a proxy of condition). The proposed MCZ and SSSI designation refers to the same population of birds. The SSSI condition assessment for common guillemot was carried out in 2010 which showed that the feature is in favourable condition, based on the 2008 population size of 1091. A recent 2016 Natural England survey carried out in conjunction with the Seabird Monitoring Programme shows that the colony size has increased from 1091 in 2008 to a count of 2706 in 2016.

Razorbill

There is direct condition evidence from West Exmoor Coast and Woods SSSI condition assessment which confirms that this feature is in favourable condition. A GMA of Maintain is advised using this direct condition evidence, and as a result a vulnerability assessment has not been carried out (as a proxy for condition). The proposed MCZ and SSSI designation refers to the same population of birds. The SSSI condition assessment for razorbill was carried out in 2010 which showed that the feature is in favourable condition, based on the 2008 population size of 631. A recent 2016 Natural England Survey carried out in conjunction with the Seabird Monitoring Programme shows that the colony size has increased from 631 in 2008 to a count of 726 in 2016.

Summary

In summary, both colonies have increased in abundance and although anchored netting and commercial and recreational crafts occur within the proposed area (see list below; these activities generate pressures to which the species is highly or moderately sensitive to), we conclude that these activities are not currently having an adverse impact on the population. However, additional management measures may be required in the future if the following activities and pressures were to increase to a level where the species were being impacted.

- FISHING: anchored nets and lines (removal of non-target species)
- COMMERCIAL SHIPPING: vessel movements (above water noise; visual disturbance)
- RECREATION: powerboating with an engine (above water noise; visual disturbance)
- RECREATION: sailing without an engine (above water noise; visual disturbance)

- RECREATION: non-motorised watercraft (above water noise; visual disturbance)

The GMA advice given in this document is derived from analysis of potential direct impacts on the species proposed for protection. This third-party proposal was submitted with the aim of providing, if designated, protection within an MCZ of a limited sea area adjacent to SSSI colonies, in recognition of these areas being of greatest importance for birds engaging in critical active maintenance behaviours, rather than foraging *per se*. Therefore, the focus would be on protection of the population from direct impacts via e.g. disturbance, displacement and direct mortality, as opposed to any particular protection of supporting habitats.

6.6 Carrick Roads third-party proposed highly mobile species MCZ

Contents

6.6.1 Background

This proposal for a new MCZ at Carrick Roads was submitted by the RSPB for the purpose of protecting wintering black-necked grebe.

The black-necked grebe is named in the 2001 SPA review (Stroud *et al.* 2001) as one of the species for which there are no aggregations of European importance within the UK and for which no SPAs have been identified in the UK. The relative scarcity of the species in the UK when considered in a European context means that even the most important sites in the UK do not hold numbers that exceed the high threshold required for the species to qualify as a feature of an SPA in its own right, and that any site in the UK would add relatively little to any pan-European network of sites such as the Natura 2000 network. The third SPA review (Stroud *et al.* 2016) did not consider this species and deferred to the ongoing marine SPA sufficiency review which is yet to be completed. Various aspects of the ecology of black-necked grebe in the non-breeding season suggest that, in comparison with many other "marine" species, it is relatively well suited to site-based protection. Thus, within a UK or indeed English context, the lack of any site-based protection for this species to date via the Natura 2000 network means that inclusion of this site within a national suite of MCZs with black-necked grebe as a feature, in conjunction with other sites proposed for this species, would make a significant contribution to delivery of a representative and replicated suite of sites that would afford protection to this species at sea in the winter in England.

6.6.2 Assessment against selection criteria

6.6.2.1 Ecological significance

Table 78 Summary of scoring for Principle 1 Ecological Significance.

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**High**	**High**	**High** Additional independent count data have confirmed the regular and continuing presence of the species in numbers that confirm the site's position as the most important wintering site for the species in England and the UK.

Justification

Black-necked grebe

Original assessment

The SPA review in 2001 specifically mentioned this species as being one of a few for which no SPAs were selected on the grounds that 'there are no known concentrations of European importance for these grebe species'. Accordingly this species is not a named feature of any SPA. Thus, in terms of site-based protection for this species, there is no network of existing sites. Therefore, there can be no doubt that this site, which lies within the Fal complex that hosts the greatest over-wintering population of this species in the UK, makes a significant contribution to the adequacy of the (to date) non-existent network of sites for this species. In combination with the other sites in the south-west proposed for this feature, this site would give good replication (though not necessarily connectivity) within a network of sites. The species occurs here throughout the winter and it is clear that the resources available within the site are of high ecological significance to the life history of the individuals within this site and, given its importance in an English and UK context, to the well-being of the national wintering population of the species as a whole. The numerical importance of the site is based on WeBS data which can be considered a high quality source of data. This led to a score of **HIGH**.

Additional evidence gathered and revised assessment

The black-necked grebe has a very wide geographic range both during the breeding season and the non-breeding season. It is fully migratory and spends the non-breeding season in different areas to those in which it breeds. Within the UK, there is a very small breeding population which breeds on small, shallow freshwater bodies such as lakes and lochs with lush fringing vegetation and dispersed submergent vegetation. The birds disperse from their breeding grounds in late summer and undergo a protracted movement, mainly at night, throughout the autumn to staging grounds and then to their wintering quarters. In the UK, the non-breeding population, which includes many individuals that do not breed in the UK, has a mainly coastal distribution, favouring shallow, inshore waters, bays and estuaries etc. Black-necked grebes are extremely inefficient fliers and are virtually flightless during the winter period. Accordingly, their movements are relatively restricted once they have arrived on their wintering grounds. The birds can remain within their restricted wintering quarters until March and so rely on the availability of safe and undisturbed feeding and roosting areas for almost half of every year in order to survive the non-breeding season and to do so in good enough body condition to complete their arduous return spring migration to the breeding grounds. Thus, shallow inshore waters, such as those proposed for inclusion within this MCZ, are of critical importance to the well-being and survival of the birds that return to them each winter.

To supplement the Wetland Bird Survey (WeBS) data presented in the RSPB's proposal, all records of black-necked grebes sighted in Cornwall since 2004/05 have been obtained from the Cornwall Bird Watching and Preservation Society (CBWPS). The county bird recorder (D. Parker) has commented that records of black-necked grebe within the Fal Estuary complex '*make up the vast majority of records received in Cornwall, with odd records of single (rarely more) birds, often on one-off dates, except perhaps some years in the Mount's Bay area. So this population is hugely important on a local county level and has been the county stronghold ever since records have been collected*' (Parker, D., *in. litt.* 14/12/2016). This statement is confirmed by a summary of the raw number of records in the CBWPS database in each winter made from: within the proposed MCZ boundary, outside the proposed MCZ boundary but within the wider Fal complex, and outwith the Fal complex altogether (Table 2). This additional information confirms the regional significance of the Carrick Roads area for black-necked grebes.

Table 79 Summary of the number of records of black-necked grebe sightings in the CBWPS database in each season since 2004/05**.**

Records from: locations within the proposed MCZ boundary, outwith the proposed MCZ boundary but within the remainder of the Fal complex or outwith the Fal complex altogether but within Cornwall. These numbers are based on all raw records within the dataset and may include some duplicate entries that inflate the number of records.

Winter Season	Carrick Roads and other locations inside MCZ boundary	Elsewhere in Fal complex but outside MCZ boundary	Other locations outwith Fal complex
2004/05	13	3	0
2005/06	21	0	0
2006/07	6	5	0
2007/08	5	0	5
2008/09	21	7	2
2009/10	39	5	0
2010/11	-	-	-
2011/12	-	-	-
2012/13	64	9	0
2013/14	62	9	0
2014/15	47	0	0
2015/16	6	1	0

A summary of the raw records within the CBWPS dataset in regard of numbers of black-necked grebes recorded each year at sites solely within the proposed MCZ boundary is provided in Table 3.

Table 80 Summary of CBWPS records of sightings of black-necked grebe made at sites within the proposed MCZ boundary since 2004/05.

These numbers are based on all raw records within the dataset and may include some duplicates that inflate the number of records, though this will not affect the peak count recorded in each year.

Winter season	No. of Records	Peak Count	Mean Count
2004/05	13	30	10.5
2005/06	21	48	16.4
2006/07	6	22	13.1
2007/08	5	9	7.6
2008/09	21	35	12.0
2009/10	39	27	9.1
2010/11	-	-	-
2011/12	-	-	-
2012/13	64	54	16.3
2013/14	62	57	19.6
2014/15	46	59	21
2015/16	6	21	12

These CBWPS data corroborate, though are not identical to, the WeBS data presented in the RSPB proposal. The peak count of black-necked grebe recorded across the whole Fal Complex, and in each individual part of the complex in which WeBS counts are recorded to make up that overall site total ie WeBS count sectors (Figure 1), in each season since 1995/96 is presented in Table 4. WeBS five year peak mean count (2010/11-2014/15: 51.25) and CBWPS five year mean peak count (2012/13 – 2015/16: 47.75) both confirm the significance of the site in the most recent winters at a regional and national level.

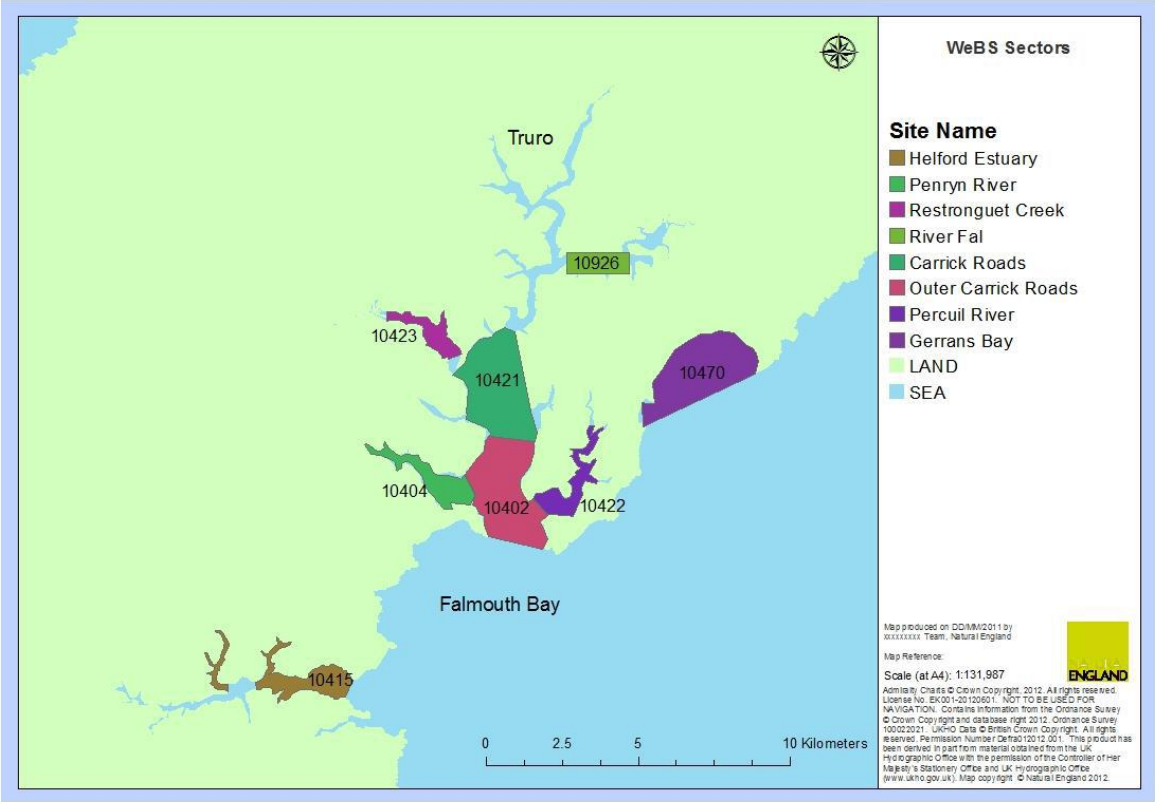

Figure 1 Map displaying the WeBS count sectors in the Fal and Helford estuarine areas

Table 81 Fal Estuary Complex WeBS Core Count peak count data by sector.

Carrick Roads proposed MCZ is Sector 10421 and half of Sector 10402. Sector 10402 has only been surveyed in 2009/10. Note that the WeBS online database includes supplementary (ie non-core) counts ('Birdguides') of 27, 78 and 81 for sector 10413 ie the Fal complex as a whole in winters 09/10 – 11/12.

Wintering Season	Sector 10413 Fal complex	Sector 10421 Carrick Roads	Sector 10402 Outer C.Roads	Sector 10422 Percuil River	Sector 10404 Penryn River
1995-1996	24	24	-	-	-
1996-1997	23	23	-	-	-
1997-1998	33	33	-	-	--
1998-1999	-	-	-	-	-
1999-2000	-	-	-	-	-
2000-2001	1	-	-	1	-
2001-2002	16	16	-	-	-
2002-2003	15	15	-	-	-
2003-2004	7	7	-	-	-
2004-2005	19	19	-	-	-
2005-2006	56	56	-	-	-
2006-2007	4	4	-	-	-
2007-2008	5	5	-	-	-
2008-2009	32	32	-	-	-
2009-2010	***4***	4	2	3	-
2010-2011	***30***	30	-	1	-
2011-2012	***62***	62	-	-	-
2012-2013	54	54	-	1	1
2013-2014	4	-	-	4	-
2014-2015	59	59	-	-	-

Additional corroborative evidence regarding the regional importance of Carrick Roads is provided by the results of surveys conducted by JNCC as part of the programme to identify suitable marine areas for designation as SPAs. Black-necked grebes were found to occur within the South Cornwall Coast Area of Search (AoS) in surveys conducted in the winters of 2009/10 and 2010/11 (O'Brien *et al.* 2014). The AoS did not contain sufficient numbers of black-necked grebe to qualify as an SPA for that species. However, the data provide support for the Fal complex being the most important site for this species, with the AoS being the most important of those surveyed, and the majority of records for this species being recorded in Carrick Roads (Figure 2). O'Brien *et al.* (2014) state that *'black-necked grebes are recorded in low numbers inland in England but Carrick Roads, within the South Cornwall AoS, is probably the most important marine area in the UK for this species, with a Mean of Peak count of 39 birds, based on JNCC systematic shore-based counts.'*

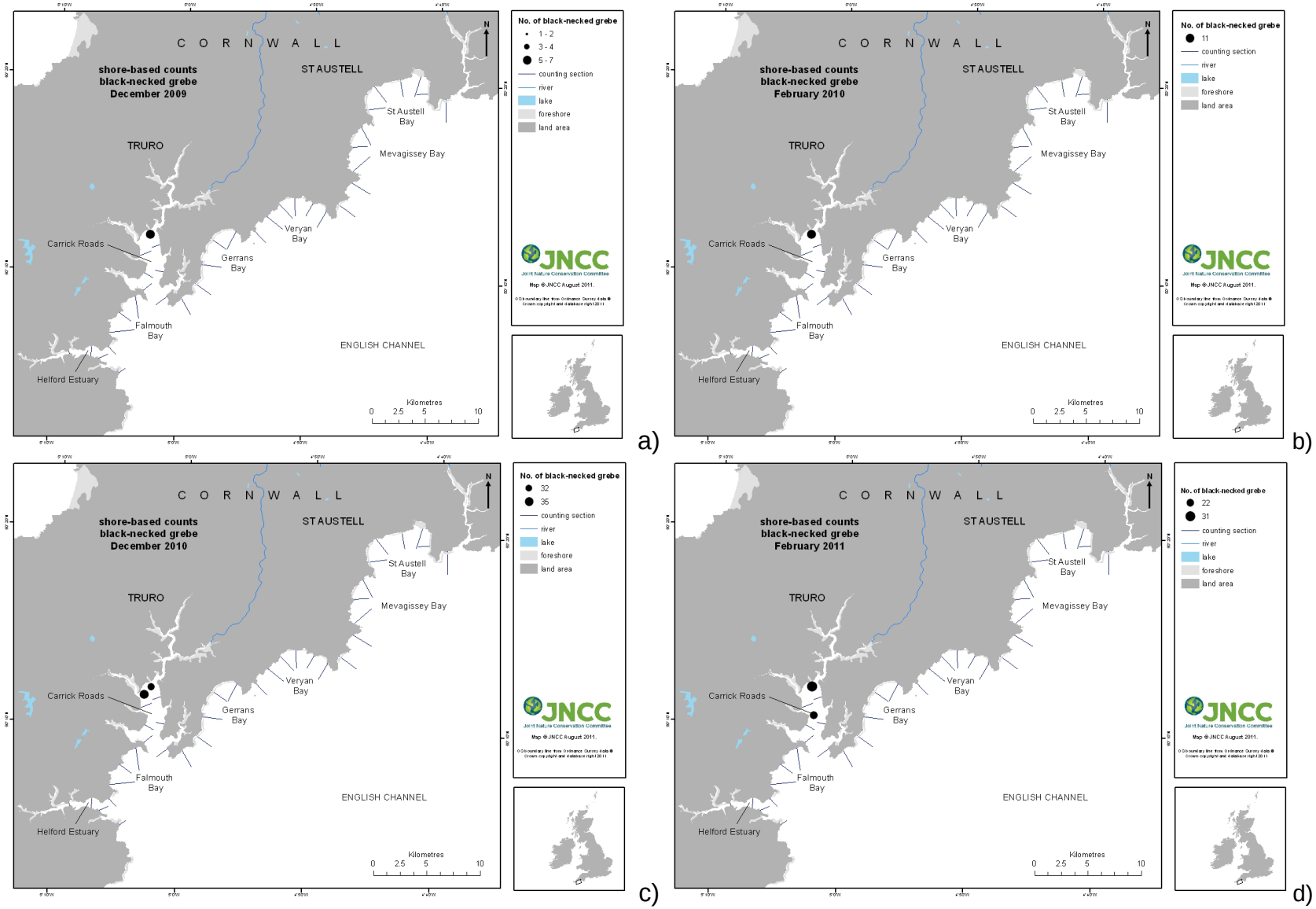

Figure 2 Distribution of black-necked grebes from shore-based counts in; a) December 2009, b) February 2010, c) December 2010, d) February 2011. From O'Brien *et al.* (2014) (Figures 3.14-3.17).

Additional evidence has also been derived from work commissioned for the SPA programme by Natural England to provide information on the distribution, abundance and ecology of the three species considered for classification as features of the Falmouth Bay to St Austell Bay pSPA (Liley *et al.* 2014). While black-necked grebe was not a target species for this study, data were collected on their distribution at 12 vantage points within the pSPA between January and March 2014 (Figure 3). Table 5 presents the total numbers of non-target species, including black-necked grebe, observed at each vantage point. The majority (91.9%) of observations for this species occurred from vantage point 4 (Carrick Roads).

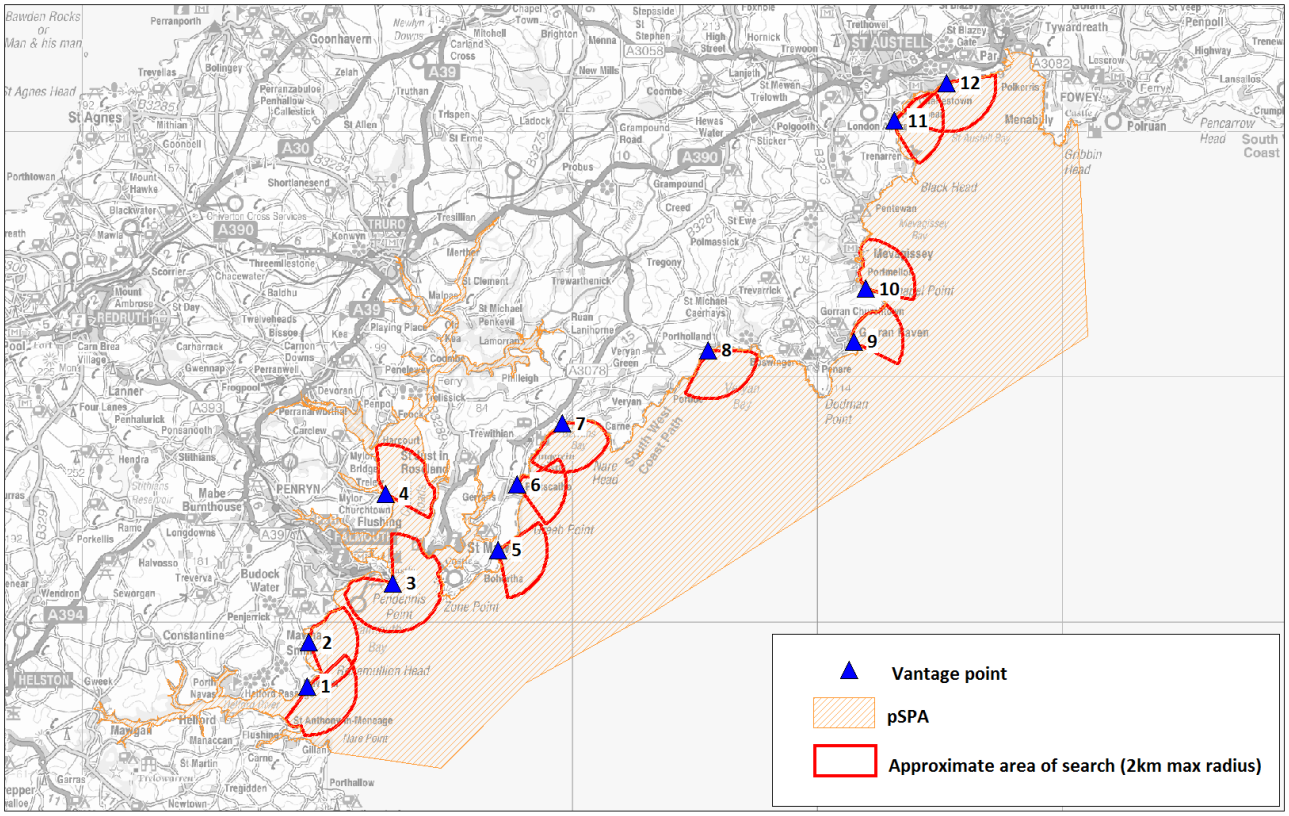

Figure 3 Surveyed vantage points from Liley *et al.* (2014)

Table 82 Numbers of other (non-target) species recorded from vantage points during standard surveys (12 visits to each vantage point). Vantage Point 4 was adjacent to Carrick Roads. Source: Liley *et al.* (2014) (Table 2).

	Grebes & Diver					Wildfowl			Seabirds							
Vantage Point	Black-necked Grebe	Great-crested Grebe	Little Grebe	Red-necked Grebe	Red-throated Diver	Red-breasted Merganser	Eider	Common Scoter	Cormorant	Shag	Fulmar	Gannet	Auk sp	Guillemot	Razorbill	Total
1								1	10	188		6		34	12	251
2				2					5	694		2		13	6	722
3							1		35	573		2		33	3	647
4	137	3	19			75	11		27	67					3	342
5								1	6	70				10	12	99
6		1			1				6	46	2	4	55	29	5	149
7					3			2		29			36	21	14	105
8	1		1		2				2	89	10		99	30	10	244
9									2	41	2		24	51	21	141
10					1			6	1	82		2	50	28	38	208
11		11							4	22	47			3	3	90
12	11	6						30		20	10	2		4	2	85
Total	**149**	**21**	**20**	**2**	**7**	**75**	**12**	**40**	**108**	**2210**	**71**	**18**	**264**	**256**	**129**	**3382**

There is no question regarding the reliability of these data sources or any issue regarding the age of the data. Taken together, the WeBS data provided in the RSPB proposal, plus the data derived from the additional independent sources described here constitute reliable, empirically-based evidence in support of the conclusion that the area has clear ecological significance to the life histories of the species at a local, regional and indeed national scale. The evidence is based on more than one independent source of information. The site clearly consistently provides supporting habitats or processes for the species, and in conjunction with the proposals for Studland and Torbay, provides good replication of sites for the species in the south-west of England. In the absence of any other site-based protection for this species in the UK, and given the importance of this site in an English and UK context, the score for ecological significance can be confirmed as **HIGH**.

6.6.2.2 Persistence

Table 83 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**High**	**High**	**High** Additional independent count data have confirmed the long-term, regular and continuing presence of the species in numbers that confirm the site's position as the most important in England and the UK. Examination of local count records and surveys confirm the persistent presence of greater numbers of the feature inside the site than outside it.

Justification

Black-necked grebe

Original assessment

The WeBS data covering the period 1995-2014 is a significant body of reliable, empirically-based evidence that supported the conclusion that the Fal complex has persistent presence at higher densities of the species proposed as a protected feature of an MCZ than any other site in the UK including other sites in the South west of England which had also been proposed as MCZs for this species. This put the site data in the wider context. Sightings data from the local county records indicated that the bulk of sightings within the Fal complex in the winter of 2011-12 were from within the area proposed as the MCZ. These distribution maps placed the Carrick Roads area in the context of surrounding waters. The evidence therefore was based on at least one high quality source of data. This led to a score of **HIGH**.

Additional evidence gathered and revised assessment

A review of three reports (Lock & Robins 1994; Slade 1996; Geary & Lock 2001) has provided additional evidence that Carrick Roads has supported the persistent presence of black-necked grebes at higher densities than all surrounding waters in the region since the 1970s. Lock & Robins (1994) present a review of existing data on inshore waterbird distribution in south-west England, spanning the period 1979 – 1991. This reported a peak count of 12 black-necked grebes (mean: five) from Carrick Roads / Falmouth Bay / Helford River. Following this, Slade (1996) conducted systematic surveys in the winter of 1994/95 of the areas identified, as well as some 'control areas' and reported a peak total of 18 birds within Carrick Roads in the winter of 1994/95. Geary & Lock (2001) surveyed the south Cornwall Important Bird Area, including Carrick Roads, in 1999/00, reporting a peak count (considered a minimum) of 18 and a mean of four birds. They concluded that "*distribution was exclusively in Carrick Roads*".

Furthermore, the database provided by the CBWPS (Table 2), the surveys conducted by JNCC in 2009/10 and 2010/11 across much of the south Cornish Coast (Figure 2) (O'Brien *et al*. 2014), and the surveys conducted across the Falmouth Bay to St Austell Bay pSPA by Footprint Ecology in 2014 (Table 5) (Liley *et al.* 2014) provide, as described above, corroborative evidence of the persistent presence of high numbers of black-necked grebes only in the vicinity of the upper Fal ie. in Carrick Roads and their near absence elsewhere in the Fal complex and across all of the rest of Cornwall.

Black-necked grebes are though recorded in other parts of the Fal complex than just the most upriver sections covered by WeBS sector 10421 eg WeBS sectors 10402, 10404 and 10422 (see Figure 1 and Table 5). However, the numbers of sightings from these sectors are relatively low in comparison to sector 10421 which covers upper Carrick Roads. This reflects the lower number of birds in these sectors but also the resultant fact that these sectors are not surveyed with any regularity as part of the WeBS scheme. However, over 12 visits to each of the vantage points surveyed by Liley *et al.* (2014) they recorded no black-necked grebe from the areas covered from vantage point 3 which extended from the mouth of the Fal complex as far upriver as the seaward limit of the proposed MCZ boundary and therefore covered much of WeBS sector 10402. This confirms the lack of black-necked grebes seaward of the proposed MCZ boundary. However, the downriver limit to the area of coverage from vantage point 4, from which all sightings of black-necked grebe in the Fal were made by Liley *et al.* (2014) (Table 5), coincided with the seaward limit to WeBS sector 10421 (Figure 1) and did not extend as far downriver as the seaward limit of the proposed MCZ (Figures 1 and 4), thus leaving a gap in coverage near the seaward limit of the proposed MCZ. However, as described in more detail below (Section 3.3), seagrass beds (*Zostera spp.*) which are highly likely to be one of the most important supporting habitats for black-necked grebes in the Fal are known to extend at least as far downriver as the seaward limit of the proposed MCZ (Figure 4).

Taken altogether, this additional evidence is considered to constitute a significant body of reliable,

empirically based evidence that supports the conclusions that the area of the MCZ as proposed supports the persistent presence of black-necked grebe at higher densities than the surrounding waters both locally within the Fal complex, regionally and nationally. The evidence is derived from more than one independent source: reports published by RSPB (Lock & Robins 1994; Slade 1996; Geary & Lock 2001), data provided independently by CBWPS, systematic surveys by O'Brien *et al.* (2014) and by Liley *et al.* (2014) as well as WeBS data contained in the original proposal submitted by RSPB. All these data sources are considered to be of high quality. This suggests that the score for this principle can be confirmed as **HIGH.**

6.6.2.3 Site size and delineation

Table 84 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**Moderate**	**High**	**High** A collation of county birds records since 2004/5, and the results of two independent systematic surveys of Black-necked grebe distribution, coupled with data on the distribution of a key supporting habitat, confirms the validity of the size and delineation of the site.

Justification

Black-necked grebe

Original assessment

There was a strong evidence base to support the conclusion that the Carrick Roads area persistently supports relatively high densities of black-necked grebe. It is highly likely that the size and shape of the area included within the proposed MCZ boundary is appropriate to that required to ensure the viability of the site. However, there was a moderate degree of uncertainty regarding the location of the proposed seaward boundary (Figure 4) in that it did not lie across the seaward boundary of either of the two WeBS count sectors which will have contributed count data to the evidence base (Figure 1), but lies in the middle of one of those sectors. Moreover, the proposed seaward boundary extends further seaward than the sightings recorded in 2011-12 would appear to merit (Figure 2d). Confidence in regards to Principle 3 might have been enhanced (to eg **HIGH**) if WeBS data for the Fal complex could be provided at the sector level (as that may reveal that the bulk of the sightings of black-necked grebe do indeed occur in sectors 10421 and 10402) and the seaward boundary is adjusted accordingly. Any additional recent or historical local records that give distributional information within the Fal complex would also have been of value in this respect. The third-party proposal was scored as **MODERATE** against this principle.

Additional evidence gathered and revised assessment

WeBS data for the Fal complex, when examined at a sector by sector level, demonstrates that black-necked grebes have been observed in both sectors considered for inclusion within the proposed MCZ (WeBS sectors 10421 and 10402) (see Figure 1 and Table 5). However, as noted above, the lack of sightings in Sector 10402, which reflects the lower numbers of birds 'known' to be in this area (relative to Sector 10421), has led to that sector only being surveyed in 2009/10 and therefore does not on its own allow confidence in the proposed seaward boundary of the MCZ.

As discussed above, Liley *et al.* (2014) conducted a series of 12 standardised shore-based counts of waterbirds at each of 12 vantage points within the Falmouth Bay to St Austell Bay pSPA between January and March 2014. As shown in Figure 3, this involved use of one vantage point allowing observation of the majority of the proposed MCZ (vantage point 4) and another allowing observation of the majority of the rest of the Fal estuary complex outwith the proposed MCZ (vantage point 3). As noted above, the seaward limit to the viewable area from vantage point 4 is approximately coincident with the southern boundary of WeBS sector 10421 (Figures 1 & 3). The majority of observations of black-necked grebe (137 of 149 observations) were recorded from vantage point 4, providing further evidence that WeBS sector 10421 regularly supports almost all black-necked grebes in the Fal complex. The viewable area from vantage point 3 (Figure 3) did not allow observation of the more seaward areas of the proposed MCZ but clearly indicated the lack of sightings to seaward of the proposed MCZ boundary. This confirms that the seaward boundary of the proposed MCZ should be no further south than that proposed.

There does though remain the question of the frequency of use of the most seaward parts of the proposed MCZ that lie outwith WeBS sector 10421. An additional factor of relevance to considering the suitability for inclusion within the proposed MCZ of the more seaward parts that lie outwith WeBS sector 10421 is that the lack of sightings in this area is probably not indicative of the birds absence but rather reflects the limits to the area that can be observed from the accessible vantage points from which WeBS sector 10421 is surveyed and the lack of survey effort in WeBS sector 10402 which covers this area. Furthermore, examination of the known distribution of beds of seagrass *(Zostera spp.*) in the Fal (Figure 4) confirms that this habitat occurs on both sides of Carrick Roads along the whole of the upper reaches of WeBS sector 10402 and therefore as far downriver as the seaward boundary of the proposed MCZ. Based on the concordance between the distribution of black-necked grebes and seagrass recorded in the site assessments for the proposed highly mobile species Torbay MCZ and Studland MCZ, it is likely to be a key supporting habitat of black-necked grebes in the Fal too. The presence of this supporting habitat suggests that it is highly likely that black-necked grebes would be recorded regularly in these most seaward parts of the proposed MCZ if they were surveyed more regularly, and that to ensure the viability of the site and maintain the integrity of its features that are ecologically relevant to black-necked grebes, the seaward limit to the proposed MCZ is entirely appropriate.

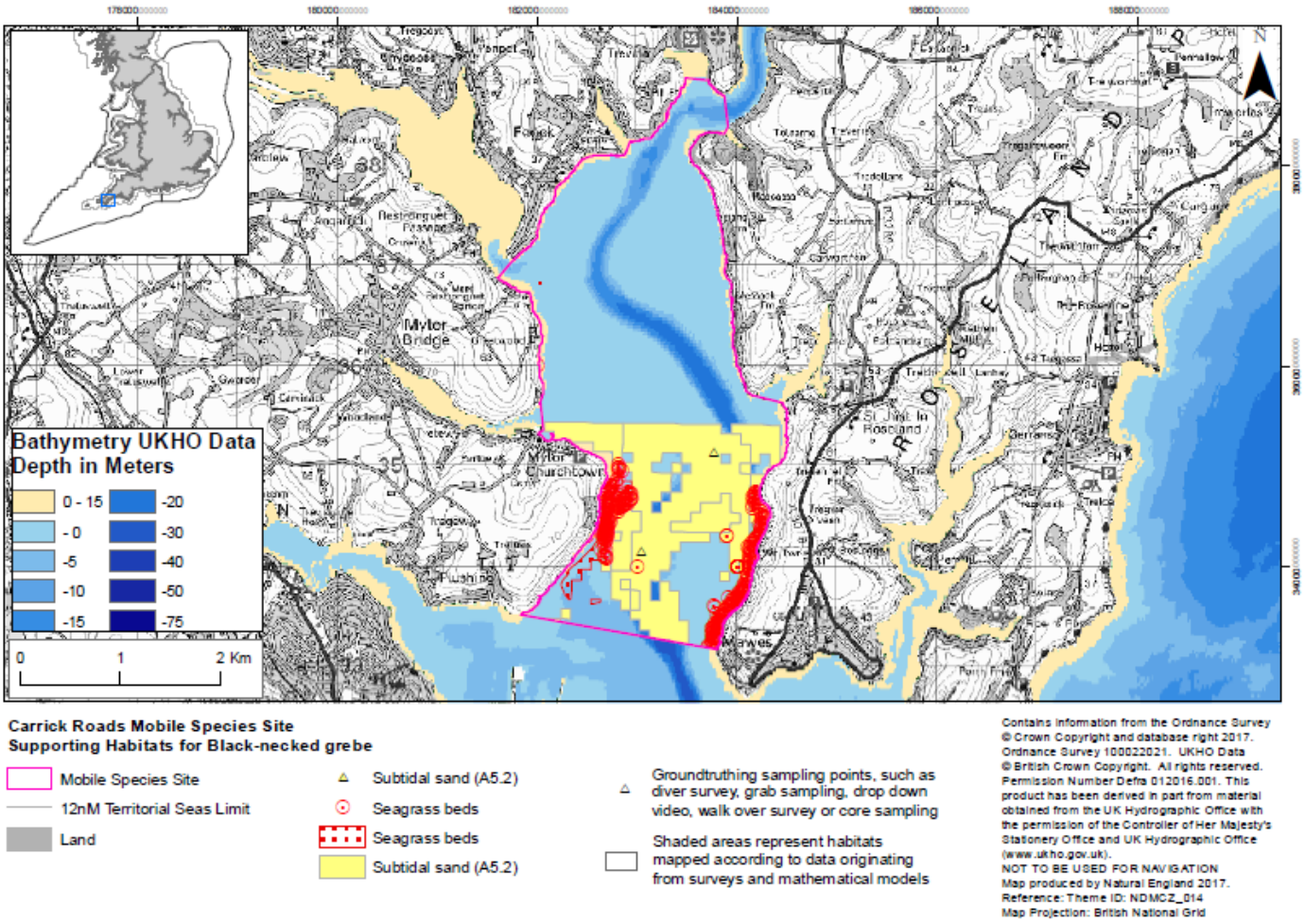

Figure 4 The distribution of known locations of seagrass beds (red dotted points and polygons) and of subtidal sand (yellow points and polygons) within the lower reaches of the proposed MCZ**.** Also shown is the bathymetry contours around the upper reaches of the Fal complex. The lack of records of these habitats in the upriver parts of the proposed MCZ does not indicate their absence, simply the lack of survey data from this area within the database.

In combination, all of this information is considered to provide a strong evidence base that demonstrates that the area included within the boundary of the proposed MCZ ie with the inclusion of part of WeBS Sector 10402, is appropriate to ensure the viability of the site for this feature and to maintain the integrity of its features and/or additional (sub-) features that are ecologically relevant to black-necked grebes. The empirically-based evidence is considered to be reliable and recent, based on good quality sightings data gathered over numerous years from more than one independent source (CBWPS database, WeBS database, JNCC surveys (O'Brien *et al.* 2014) and Footprint Ecology surveys for Natural England (Liley *et al.* 2014), and is considered to justify that the score for this principle can be re-assessed as **HIGH.**

6.6.2.4 Appropriateness of Management

Table 85 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**Low**	**Moderate**	**Moderate**

Justification

Black-necked grebe

Original assessment

The initial proposal detailed the amber and red risks considered in the vulnerability assessment for the Falmouth Bay to St Austell Bay pSPA. These were drawn from the range of activities which take place within the proposed SPA and that may have an adverse impact on the status of the species proposed for that designation. However, the MCZ is only one small part of the pSPA and the proposal provided only a superficial account of the activities taking place within the MCZ boundary. It did not describe the levels at which activities occur, nor precisely where and when they occur. This led to a score of **LOW**. However, there is a GI database in which activities that occur within the proposed area are recorded and consideration of that information could have enhanced the scoring against this principle (to **MODERATE**).

Furthermore, as the pSPA within which the proposed MCZ lies has three features with very similar sensitivity to pressures as the black-necked grebe, there is (at best) limited evidence that 'existing' measures that may be put in place via the pSPA would not be sufficient to address threats posed to black-necked grebe within the proposed MCZ boundary. For example, the proposal mentions a code of conduct for netting in Torbay but does not mention that there is also one covering the pSPA. This code of conduct was brought in for the whole of the pSPA to have a beneficial effect for the designated seabird species, as well as those seabirds which are more susceptible to interaction with fishing nets. However, species specific protection and management could provide further protection in comparison to relying on indirect protection from the pSPA.

Additional evidence gathered and revised assessment

The proposed MCZ at Carrick Roads would lie inside the larger Falmouth Bay to St Austell Bay pSPA, which protects the following species; black-throated diver *Gavia arctica*, great northern diver *Gavia immer* and Slavonian grebe *Podiceps auritus*. Unlike these three species, the distribution of black-necked grebe is very localised to Carrick Roads (Pikesley *et al.* 2016), which means an MCZ in this area would be a better mechanism than the pSPA to deliver management measures specifically for the well-being of this species. These measures could be delivered solely within the MCZ, rather than the wider pSPA. Management measures for the benefit of the pSPA features are more likely than not to be focused on other areas, outside of the proposed MCZ site, given that these species are more widely distributed throughout the larger pSPA site and their hotspots of distribution do not occur in Carrick Roads (Pikesley *et al.* 2016).

Further evidence has been provided which demonstrates ongoing activities within or adjacent to the proposed boundary that have the potential to impact black-necked grebe. The following activities generate pressures to which the species is highly or moderately sensitive, and may have the potential to impact the conservation status of the species.

- COMMERCIAL SHIPPING: vessel movements (visual disturbance, above water noise)
- FISHING: Dredges (visual disturbance)
- RECREATION: Powerboating/sailing with an engine (visual disturbance, above water noise)
- RECREATION: Sailing without an engine (visual disturbance)
- RECREATION: Non-motorised watercraft (visual disturbance)
- ANCHORING / MOORING: Recreational and commercial (visual disturbance)

Black-necked grebes are susceptible to visual disturbance from vessel movements and Carrick Roads is busy with commercial vessels transiting the site. Mylor Marina is within the site boundary, Falmouth Docks is just south of the site and Truro Docks is further up the Fal estuary. There are also vessels from the oyster fishery in the site during the winter months. Dredging in the oyster fishery is allowed from 9am-3pm Monday to Friday and 9pm-1pm on a Saturday. The fishery is managed through the Fal Fishery Regulatory Order 2016 (Cornwall IFCA 2017a). A 30 knot speed limit applies to all vessels in the site.

The proposed site is popular with recreational boating and non-motorised watercraft, which have the potential to cause visual disturbance and above water noise. Recreational activity occurs at a high intensity all year around, although levels increase in the summer months. There is a designated area within the site for water skiing. Recreational vessels are limited to 30 knots.

Black-necked grebe may be susceptible to visual disturbance from recreational and commercial anchoring/mooring. Mylor Marina provides a large area for mooring vessels and anchoring is permitted throughout most of Carrick Roads. However, anchoring of commercial vessels is fairly limited to the southern end of the site and physical conditions mean that recreational boats are restricted as to where they can anchor. Recreational boats are known to anchor at the top of Carrick Roads at Turnaware Point and on the eastern side of the estuary, just south of St Just.

Fishing activity is very limited in the site, due to the presence of the co-located SAC and existing byelaws. An Environment Agency byelaw currently prohibits most nets in the estuary, and this is in the process of being replaced by a new IFCA byelaw. The new byelaw will ban all netting, with the exceptions of seine netting for sand eels (which is very unlikely to occur over the winter) and ebb netting (Cornwall IFCA 2017b).

A large capital dredge has been proposed for the Port of Falmouth, just outside of the site boundary. The MMO are currently preparing pre-application advice to the port. Natural England's advice has taken into account the features of the overlapping pSPA (black-throated diver, great northern diver and Slavonian grebe).

All dredging activity is managed through marine licenses.

The evidence held by, or available to, Natural England on activities (pressures and sensitivities) and management is considered to: i) constitute a comprehensive account of the range of activities which take place within the proposed MCZ, or have an influence within it, that may have an adverse impact on the status of the species proposed for designation, ii) demonstrate some of the levels at which some of the activities occur, iii) describe any existing management measures in place within the MCZ, iv) show that there are ongoing activities in the area, or other identified threats which are likely to give rise to pressures to which the species may be highly or moderately sensitive, and may have the potential to impact the conservation status of the species at the population or sub-population level, v) consider if existing wider measures may not be sufficient to address any threats posed to the species within the third-party proposed MCZ boundary. In addition, possible management options (appropriate for providing MCZ protection) have been identified that may reduce the effect of current or future damaging activities on the third-party proposed species

Based on the comprehensive account provided of site specific activities and current management measures the score for this principal can be re-assessed as **MODERATE.**

6.6.3 General Management Approach

Table 86 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Main issue(s) in relation to this GMA
Black-necked grebe	Maintain in favourable condition	Commercial and recreational vessel movements, shore based activities and anchoring causing disturbance pressures

Justification

A General Management Approach of 'Maintain' has been set for this feature. The population data for this site shows some fluctuations, but the overall trend remains stable. There are a number of activities occurring within the site that may cause disturbance to the feature; however there is no evidence to suggest that they are currently impacting the population. Activities which may be of concern include, but are not limited to, commercial and recreational vessel movements, shore based activities and anchoring/mooring. Given the high intensity of these activities within the site, sensitivity of the species to disturbance and the importance of the population within the site to the national population the impacts of these activities will need more investigation if the site is designated and management may be required as a result.

The GMA advice given in this document is derived from analysis of potential direct impacts on the species proposed for protection. Were the site to be designated however, there may need to be further consideration given to ensuring that the key supporting habitats for the species are maintained in a suitable state to support the feature in question. Table 10 lists all of the marine habitats listed in Natural England's marine evidence geodatabase as being present in the third-party proposed MCZ and which are considered to potentially be important for supporting the proposed species. If the site were designated, Natural England would provide conservation advice on the contribution and status of key supporting habitats within the site.

Table 87 List of benthic habitat sub-features which are potential supporting habitats for black-necked grebes and are recorded as being present within the boundaries of the proposed MCZ within Natural England's marine evidence geodatabase.

Supporting habitat	Code
Circalittoral rock	A4
Infralittoral rock	A3
Intertidal mixed sediments	A2.4
Intertidal mud	A2.3
Intertidal rock	A1
Intertidal sand and muddy sand	A2.2
Subtidal coarse sediment	A5.1
Subtidal mixed sediments	A5.4
Subtidal mud	A5.3
Subtidal sand	A5.2

Subtidal seagrass beds	A5.53
Maerl beds	HOCI12

6.7 Coquet to St Mary's third-party proposed highly mobile species MCZ and suggested northern extension Coquet to Berwick

Contents

6.7.1 Background

This proposal was submitted by RSPB for the purpose of adding breeding and non-breeding common eider as new features of the existing Coquet to St Mary's MCZ. The conservation aim of the proposal for both breeding and non-breeding common eider would be to provide a critical seaward maintenance and foraging extension surrounding the breeding colony at Coquet Island SSSI. The site would cover areas on which common eider are ecologically dependent, in this case for 'active behaviours' such as foraging, preening, bathing and displaying.

The common eider is not considered to be a migratory species during the breeding season, and is not

listed on Annex 1 of the Birds Directive. Accordingly, during the breeding season it is not eligible for consideration as a feature of an SPA, and there are no SPAs for this species in this season. Given that breeding common eider are not notified features of any protected areas at sea and will not be considered as features of marine Special Protection Areas (SPAs), the proposed MCZ will fill a key representivity gap in the ecologically-coherent network of marine protection in English waters. Therefore this site would likely be of ecological significance to the local common eider population by providing connectivity between breeding and wintering populations of common eider on Coquet Island and various feeding grounds. In terms of adequacy of the network, there is no network for protection of breeding or non-breeding common eider at all in the marine environment at present.

In Natural England's initial review of this third party proposal, we noted that the proposed area (although an MCZ already) seemed to have a good population of common eider, but that the wider area also seemed to be equally important for this species, so an MCZ covering a larger stretch of the Northumberland coastline may be more appropriate. Subsequent work by Natural England collated Wetland Bird Survey (WeBS) counts and Non-estuarine Waterbird Survey (NEWS) counts for the whole of the Northumberland coast and these highlighted the continuous distribution of common eider (at least in the non-breeding season) all the way up to the Scottish border. On the basis of this Natural England suggested an alternative potential boundary for this MCZ which would extend the existing MCZ all the way to the Scottish border. Defra were made aware of this alternative and asked Natural England to progress the evidence base in regard to both the original MCZ and this suggested alternative larger MCZ with a northern extension (referred to as 'Coquet to Berwick' for the purpose of this assessment). An assessment of the original Coquet to St. Mary's MCZ (proposed by the RSPB) and the suggested extended site north of the current MCZ ('Coquet to Berwick) has been reviewed and scored throughout this document in line with Defra's request.

6.7.2 Assessment against selection criteria

6.7.2.1 Ecological significance

Table 88 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score	Potential score	Updated score (taking into account further evidence review, Feb 2017)
Common eider	**Moderate**	**High**	Coquet to St Mary's MCZ (as proposed by RSPB): **High** Suggested larger amended site with northern extension ('Coquet to Berwick')**: High** Additional evidence on breeding and non-breeding numbers and on locations used by feeding ducklings and adults has provided evidence on use of areas both within the Coquet to St Mary's site as proposed by RSPB and within the suggested larger amended site with northern extension ('Coquet to Berwick') for breeding and non-breeding activities and for feeding. Both sites are of regional and national (English) importance for both breeding and non-breeding common eider. In terms of adequacy of the network, there is no network for protection of common eider at all in the marine environment at present.

Justification

Original assessment (Coquet to St Mary's)

Coquet Island was notified in 1983 as a site of special scientific interest (SSSI) for 500 pairs of breeding common eider. Coquet Island SSSI lies within the current MCZ and the eider breed here on the southerly coast (Nature Conservancy Council 1983a)

The site would fill a key representivity gap as breeding common eider are not notified features of any protected areas at sea and are unlikely to be considered in SPAs as they are not considered to fall into the scope of Article 4 following the 2001 SPA Review (neither Annex 1 species nor considered to be a regularly occurring migrant). This site is, nevertheless, likely to be of ecological significance for the local common eider population by providing connectivity between breeding and wintering populations of common eider on Coquet Island and various feeding grounds.

However, the evidence regarding the ecological significance is open to a degree of question due to the lack of site-specific empirical evidence that the birds use the MCZ area for important behaviours and do so to a greater degree than other coastal areas lying outside the proposed boundary. This suggested an assessment against the ecological significance principle of **MODERATE**.

Additional evidence gathered and revised assessment (summary of evidence for Coquet to St. Mary's and 'Coquet to Berwick')

Additional evidence has been gathered in order to assess whether the area of the Coquet to St Mary's MCZ as proposed by the third-party (see section 4.1.1), and the suggested amended larger site with a northern extension ('Coquet to Berwick') (see section 4.1.2) are of clear ecological significance to breeding and non-breeding common eider, and whether they make a significant contribution to the life-cycle of the species due to providing supporting habitats or processes.

This evidence has been obtained from:

- Colony managers; for breeding colony counts for common eider breeding colonies located along the Northumberland coast.
- Wetland Bird Survey (WeBS) core count data for 2010/11to 2014/15 (available in Frost *et al.* 2016); from sectors located along the Northumberland coast from the Durham coast (to the south of Coquet to St Mary's MCZ) to Berwick-upon-Tweed on the England/Scotland border (north of Coquet to St Mary's MCZ, but within the suggested northern extension 'Coquet to Berwick');
- The results from the winter 2015/16 Non-estuarine Waterbird Survey (NEWS) (obtained from the BTO) from sectors located between Middlesbrough (to the south of Coquet to St Mary's MCZ) to Berwick-upon-Tweed on the England/Scotland border (north of Coquet to St Mary's MCZ, but within the suggested northern extension 'Coquet to Berwick'). The NEWS surveys are a national programme of surveys of birds of the open coast.
- Studies on the ecology of common eider at any time of year along the Northumberland coast, eg university student theses, county bird reports etc.
- Data on eider dive depth abilities and maps of bathymetry data for the area and any supporting habitats relevant to common eider for the area in order to aid in assessment of ecological significance and link to common eider lifecycle and behaviour.

Assessment against Principle 1 Ecological Significance for option (a): proposed Coquet to St Mary's MCZ

Breeding common eider

The RSPB submission noted that Coquet Island is a key common eider breeding colony on the Northumberland coast and is located within the Coquet to St Mary's MCZ. The common eider breeding on Coquet Island are considered to be a closed population (Coulson 2010; Graham 1975), due to lack of records of breeding ducks captured on the island that were known to have previously nested elsewhere (Coulson 2010). No breeding areas to the south of the island have been recorded. To the north, apart from a few pairs (maximum of 10) nesting on the mainland at Dunstanburgh Castle (Wilson 1990; Graham 1975), the nearest breeding ground is located 30 kilometres away, on the Farne Islands (Coulson 2010). The Farne Islands are located outside of the northern extent of the Coquet to St Mary's MCZ.

As with Coquet Island, the Farne Islands is a notified SSSI (first notified in 1951 and revised in 1983) and breeding common eider are also a notified feature of this site, with the citation stating that: '*Significant numbers of eider (1,700 pairs) are recorded nesting mainly on Inner Farne*' (Nature Conservancy Council 1983b). Breeding common eider records for the Farne Islands between 2012 and 2016 are presented in Table 2 and for Lindisfarne from 2005 to 2016 in Table 3. From the data presented in Table 2, the most recent 5 year mean (2012-2016) count of breeding common eider on the Farne Islands is 559 breeding pairs, representing 2.4% of the GB breeding population (excluding Shetland) of 23,000 pairs (Musgrove *et al.* 2013), showing the national importance of this site. The data presented by RSPB for Coquet Island showed that in the most recent five years (2011-2015) the number of breeding pairs at the site have been between approximately 200-400 pairs, with the 365 nests (equating to breeding pairs) recorded in 2015, which is lower than the numbers held by the Farne Islands colony, which is located outside of the Coquet to St Mary's MCZ. The additional data presented from the Farne Islands, indicates that this is another important location for breeding common eider along the Northumberland coast.

Table 89 Productivity and breeding pairs of common eider on the Farne Islands (2012-2016)

Year	Productivity	Breeding Pairs
2012	1.58	443
2013	2.32	552
2014	2.59	639
2015	2.45	570
2016	2.67	593

Table 90 Nesting common eider records for Lindisfarne (specifically Ross and Black Law (2005-2016))

Common eider	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Pairs	1	2	3	3	1	2	1	1	0	0	0	0
Eggs	5	11	16	18	8	15	8	7	0	0	0	0
Chicks	4	10	6	5	5	3	5	4	0	0	0	0
Fledged	4	10	6	5	5	3	5	4	0	0	0	0

Information has also been obtained on the ecology of common eider along the Northumberland coast. Two MSc theses have been obtained along with information in the 2011-2015 Birds in Northumberland reports. The two MSc theses have studied several aspects of common eider ecology in the area, with a focus on the Coquet Island breeding population:

- The Birds in Northumberland reports (2011-2015) covers bird reports for common eiders at areas within the Coquet to St Mary's MCZ (including Coquet Island) and also areas to the north of the site, principally Lindisfarne, the Farne Islands and along the Northumberland coastline as far north as Berwick.

- Wilson (1990) covered the area of the Northumberland coast between Hadston Carrs and Craster between 9 May and 1 August 1990. The study area covers part of the area of the Coquet to St Mary's MCZ and extends along the coast to the north of the current MCZ boundary.

- Graham (1975) covered some 30 kilometres of the Northumberland coastline, stretching north and south of Coquet, from Castle Point to Snab Point. This full study area covers part of the Coquet to St Mary's MCZ and extends along the coast to the north of the current MCZ boundary. Within the full study area, an intensive study area was maintained, which stretched from Birling Carr to Bondi Carr and included Able (Warkworth Harbour), the estuary and flood plain of the River Coquet. This intensive study area falls within the Coquet to St Mary's MCZ, with the exception of the River Coquet, the Coquet estuary and Amble (Warkworth) Harbour, which are located just outside the site boundary.

The Birds in Northumberland reports provide information on the main breeding sites, distribution of common eider ducklings and adults and the location of creching sites along the Northumberland coast. Each annual report also includes the annual peak counts of common eiders at Lindisfarne NNR, located to the north of the Coquet to St Mary's MCZ. In all years (2011-2015), common eider crèches were recorded along the mainland coast and Lindisfarne National Nature Reserve (NNR) at various locations both within the Coquet to St Mary's MCZ and along the coast to the north of the site. The main area where crèches were noted within the Coquet to St Mary's MCZ site was at Hauxley. To the north of the site, several areas were noted as locations used by common eider crèches, including Holy Island, Budle Bay, Cullernose Point, Seahouses, Beadnell and Howick. Other important areas were noted to be Amble Harbour, Coquet estuary and the Blyth estuary. Amble Harbour and the Coquet and Blyth estuaries are not included within the Coquet to St Mary's MCZ existing site boundary. In all years, most or all of the ducklings/ crèches observed were thought to have originated from Coquet Island or the Farne Islands.

Areas where groups of 50 or more birds (adults) were regularly noted between June and August in the Birds of Northumberland reports were Coquet Sound, Druridge Bay, off Hauxley, St Mary's Island, Newbiggin to Cambois and Snab Point, all within the Coquet to St Mary's MCZ. Birds were also recorded at this time at many points along the coast to the north of the Coquet to St Mary's MCZ from between Lindisfarne to Berwick-upon-Tweed. Groups of 50 or more birds were also observed in the Aln, Blyth and Coquet estuaries, particularly in June.

Both Wilson (1990) and Graham (1975) included some analysis of feeding behaviour and distribution of ducklings and adults within the areas covered by the studies.

Wilson (1990) found that most common eider ducklings hatched on Coquet Island leave immediately after hatching, and cross the kilometre or so of open water to the mainland. The ducklings had an uneven distribution along the Northumberland coast, due to differing food availability and the ability of ducklings to take different sized prey items as they mature.

Both Wilson (1990) and Graham (1975) identified the main areas used by common eider ducklings in their studies:

- Wilson (1990) identified three 'nursery areas' where the ducklings occurred and fed for the first few weeks of their life: Amble (Warkworth) Harbour was found to be the principal site. Amble Harbour is not included within the Coquet to St Mary's MCZ, as the Coquet estuary has not been included within the existing site boundary. The second highest used area by ducklings was the area between Cullernose to Craster, which is north of the Coquet to St Mary's MCZ. Areas favoured by older ducklings were found to be the rocks between Wellhaugh Point and the mouth of Amble Harbour (largely within the Coquet to St Mary's MCZ), and the area between Cullernose Point and Craster (north of Coquet to St Mary's MCZ) (Wilson 1990).

- Graham (1975) also found that the area around Amble (Warkworth) Harbour and the Coquet estuary were important areas used by ducklings, with the exposed mudflats and shallow waters of the estuary and the area along the harbour walls being two of the three main sites identified. As noted above, Amble Harbour and the Coquet estuary are not included within the Coquet to St Mary's MCZ boundary. The other main area used by ducklings identified in the study by Graham (1975) was the shallow water area at Hauxley, which is located within the Coquet to St Mary's MCZ.

Wilson (1990) also identified that there was a lack of usage by eiders of the newly constructed marina in Amble Harbour, and this was considered to be because the marina is now an area of relatively unsuitable habitat for ducklings with only very restricted areas of mud becoming available at low tide due to the artificially created and steeply sloping sides of the marina basin.

Both Wilson (1990) and Graham (1975) also provide information on areas used by adult common eiders during the breeding season. Wilson (1990) found that adult common eider distribution showed a general increase in numbers down the coast towards Coquet Island and the onshore area opposite around the coastguard lookout point (located within the Coquet to St Mary's MCZ). To the south of Coquet Island ie Silver/Bondi and Hadston Carrs (within the Coquet to St Mary's MCZ) there was a very rapid drop in numbers and no birds were seen in the body of Druridge Bay (also located within the Coquet to St Mary's MCZ) (Wilson 1990). Graham (1975) found that the feeding behaviour of females with ducklings was found to closely resemble that of her ducklings, meaning that the same areas were used. Females without ducklings were observed feeding in flocks, out to sea, where their activity was affected by the tides (Graham 1975). During May and the early part of June males stayed within the intensive study area, diving in flocks, mid-way between Coquet Island and the mainland (within the Coquet to St Mary's MCZ). Towards the end of June, males disappeared from the water at low tide, some returning to rest on the island, others leaving the intensive study area (Graham 1975).

The information above suggests that the Coquet and the Blyth estuaries are important areas for common eider during the breeding season. As noted above, the Coquet Estuary and the Blyth Estuary were both excluded from the original Coquet to St Mary's MCZ boundary. The North Sea regional MCZ project worked with a range of sea users and interest groups to identify MCZs within the North Sea. The local hub, which subsequently proposed the Marine Conservation Zones in the Northumbria and Tyne & Wear area in 2011, did not have any ports' representatives at the workshops that identified potential sites. As a result the local hub decided against proposing features inside an estuary, within the confines of land, with an active port without the input of ports' representatives therefore the River Coquet and the port (Amble Marina) were excluded from the MCZ boundary. The Blyth estuary was also excluded due to opposition raised by the Port of Blyth with regard to the estuary being included in the ports 'statutory harbour limits' therefore this area of the MCZ boundary was excluded on socio-economic grounds as agreed by Defra.

Non-breeding common eider

The WeBS core count data for the most recent five years (2010/11-2014/15) and the winter 2015/16 NEWS survey data from sectors located along the Northumberland coast have been categorised into the following area groups:

- Sectors located within the Coquet to St Mary's MCZ boundary;
- Sectors located to the north of Coquet to St Mary's MCZ;
- Sectors located the south of Coquet to St Mary's MCZ; and,
- Sectors covering the estuaries that are not included within the Coquet to St Mary's MCZ boundary, *i.e.* located to the west of the boundary (Coquet Estuary and Blyth Estuary). Although Coquet Estuary and Blyth Estuary were not included in the original Coquet to St. Mary's MCZ due to an absence in representation from the Port Authorities during the consultation period and socio-economic reasons as outlined above, they have been included in the assessment as the evidence suggests these estuaries provide important habitats for non-breeding common eiders and common eider ducklings.

Table 4 shows the most recent five year mean (2010/11-2014/15) common eider counts from the WeBS core count sectors located in each area group, and gives the five year mean eider total for each area. Figure 1 shows this five year mean WeBS core count common eider data in the context of the Coquet to St Mary's MCZ as proposed by RSPB and in the surrounding areas.

Table 4 shows that the five year peak mean (2010/11-2014/15) common eider count for within the Coquet to St Mary's MCZ (as proposed by RSPB) is 475 birds. If the estimated figure for the English wintering population of eider of around 12,000 individuals (referenced as *pers. comm.* Andy Musgrove) used by RSPB in their proposal for this site is used, then the non-breeding common eider population within the site represents 3.96% of this population. The mean peak count for the site also represents 0.86% of the non-breeding population of common eider of Great Britain (excluding Shetland) of 55,000 individuals (Musgrove *et al.* 2013), which shows the (England and Great Britain-scale) importance of the site to non-breeding common eiders.

Table 4 and Figure 1 also show that the distribution of non-breeding common eider along the Northumberland coast extends further north than the Coquet to St Mary's MCZ, with more birds recorded in this northern area. The five year peak mean (2010/11-2014/15) common eider count for the area north of the Coquet to St Mary's MCZ up to Berwick-upon-Tweed (England/Scotland border) is 2,671 birds compared to 475 birds within the Coquet to St Mary's MCZ. This figure represents 22.26% of the English and 4.86% of the Great Britain non-breeding populations, indicating the continued importance north along the coast at an England and Great Britain scale.

Table 91 WeBS core count data for eider (five year mean, 2010/11-2014/15) from sectors located along the Northumberland coast per area.

Area	WeBS core count sector	Eider count (5 year mean 2010/11-2014/15[1])	Total eider count for area (mean 2010/11-2014/15)
Within Coquet to St Mary's MCZ boundary	St Mary's Island	46	475
	Seaton Sluice to Blyth Estuary (Excl.)	37	
	Cambois to Newbiggin	30	
	Cresswell to Newbiggin	74	
	Cresswell to Chevington Burn	57	
	Amble to Chevington Burn	134	

Area	WeBS core count sector	Eider count (5 year mean 2010/11-2014/15[1])	Total eider count for area (mean 2010/11-2014/15)
	Alnmouth	97	
North of Coquet to St Mary's MCZ	Alnmouth to Boulmer	529	2,671
	Boulmer to Howick	83	
	Howick to Beadnell	118	
	Beadnell to Seahouses	176	
	Seahouses to Budle Point	407	
	Farne Islands	210	
	Lindisfarne	946	
	Spittle to Cocklaw Burn	116	
	Tweed Estuary	17	
	Berwick North Shore	69	
South of Coquet to St Mary's MCZ	Whitely Bay	31	152
	Tyne Estuary	31	
	Durham Coast	90	
Estuaries outside Coquet to St Mary's MCZ	Coquet Estuary	63	125
	Blyth Estuary (Northumberland)	62	

[1] Frost *et al.* (2016)

Table 5 shows the peak count total per area for common eider data obtained from the winter 2015/16 NEWS survey. Figure 2 shows the winter 2015/16 peak count of common eider per NEWS sector in context of the Coquet to St Mary's MCZ as proposed by RSPB.

Table 5 shows that the winter 2015/16 NEWS peak common eider count from within the Coquet to St Mary's MCZ (as proposed by RSPB) is 150 birds. If the estimated figure for the English wintering population of eider (of around 12,000 individuals (*pers. comm.* Andy Musgrove)) cited by RSPB in their proposal for this site is used, then the non-breeding common eider population within the site recorded by this survey represents 1.25% of this population. The 2015/16 NEWS mean peak count for the site also represents 0.27% of the of the Great Britain non-breeding population of common eider (excluding Shetland) of 55,000 individuals (Musgrove *et al.* 2013).

As with the WeBS core count data, Table 5 and Figure 2 of the winter 2015/16 NEWS mean peak counts per sector also show that the distribution of non-breeding common eider along the Northumberland coast extends further north than the Coquet to St Mary's MCZ, with more birds recorded in this northern area. The winter 2015/16 NEWS mean peak total common eider count for the area north of the Coquet to St Mary's MCZ to Berwick-upon-Tweed (England/Scotland border) is 349 birds compared to 150 birds within the Coquet to St Mary's MCZ. This figure represents 2.91% of the English and 0.63% of the Great Britain non-breeding populations, indicating the regional importance of the Coquet to St Mary's MCZ site, as

proposed by RSPB, to the species.

Table 92 Summary of winter 2015/16 NEWS data for eider from sectors located along the Northumberland coast per area.

Area	**Eider total count per area (based on peak count per sector located within area)**
Within Coquet to St Mary's MCZ	150
North of Coquet to St Mary's MCZ	349 (north of Coquet to St Mary's MCZ)
South of Coquet to St Mary's MCZ	74
Estuaries outside Coquet to St Mary's MCZ	20*

* Blyth Estuary only.

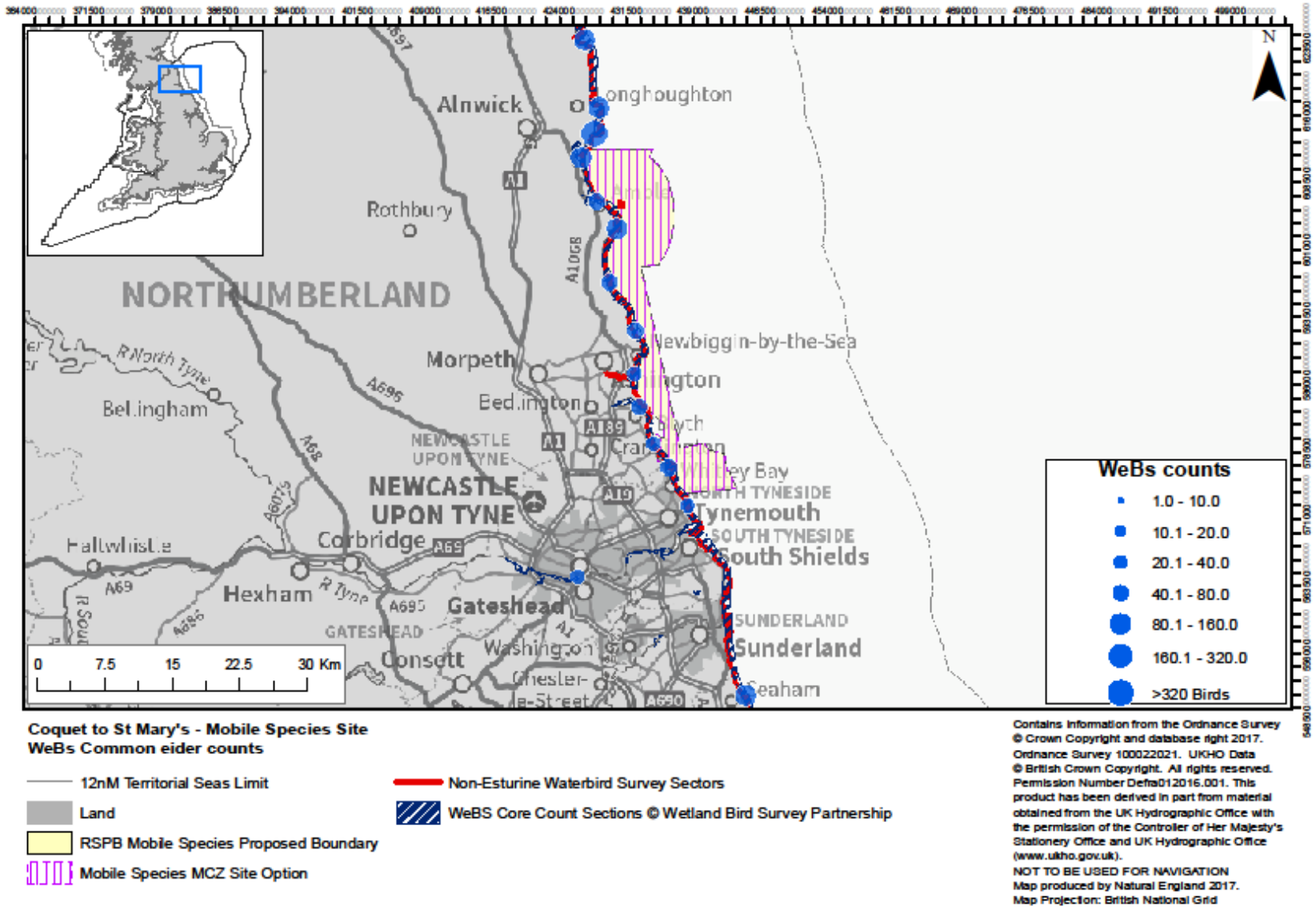

Figure 1 Five year mean peak (2010/11-2014/15) counts of common eider per sector from WeBS core counts along the Northumberland coast in the context of the Coquet to St Mary's MCZ.

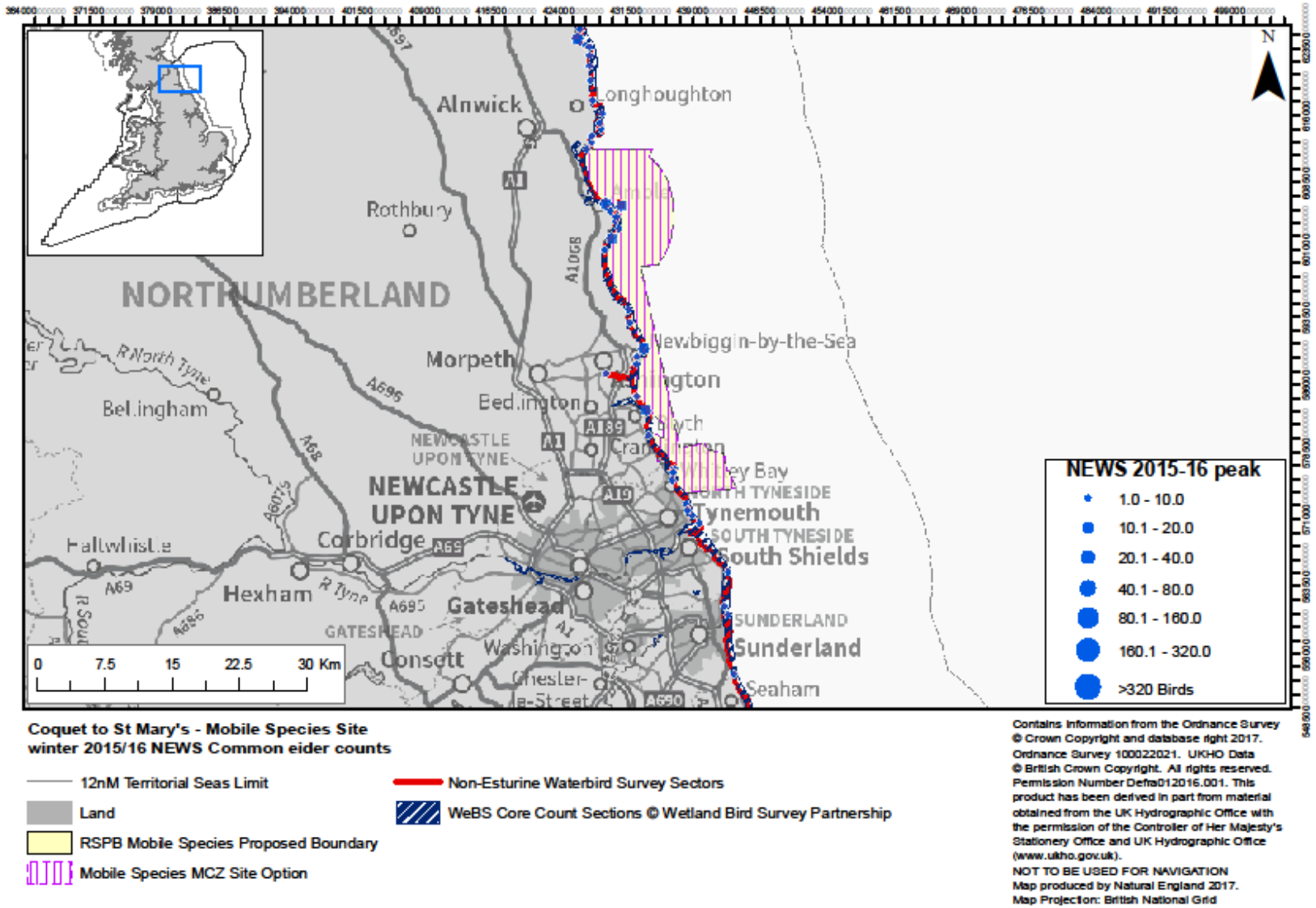

Figure 2 Mean peak count of common eider per sector from the winter 2015/16 NEWS survey for the Northumberland coast in the context of the Coquet to St Mary's MCZ

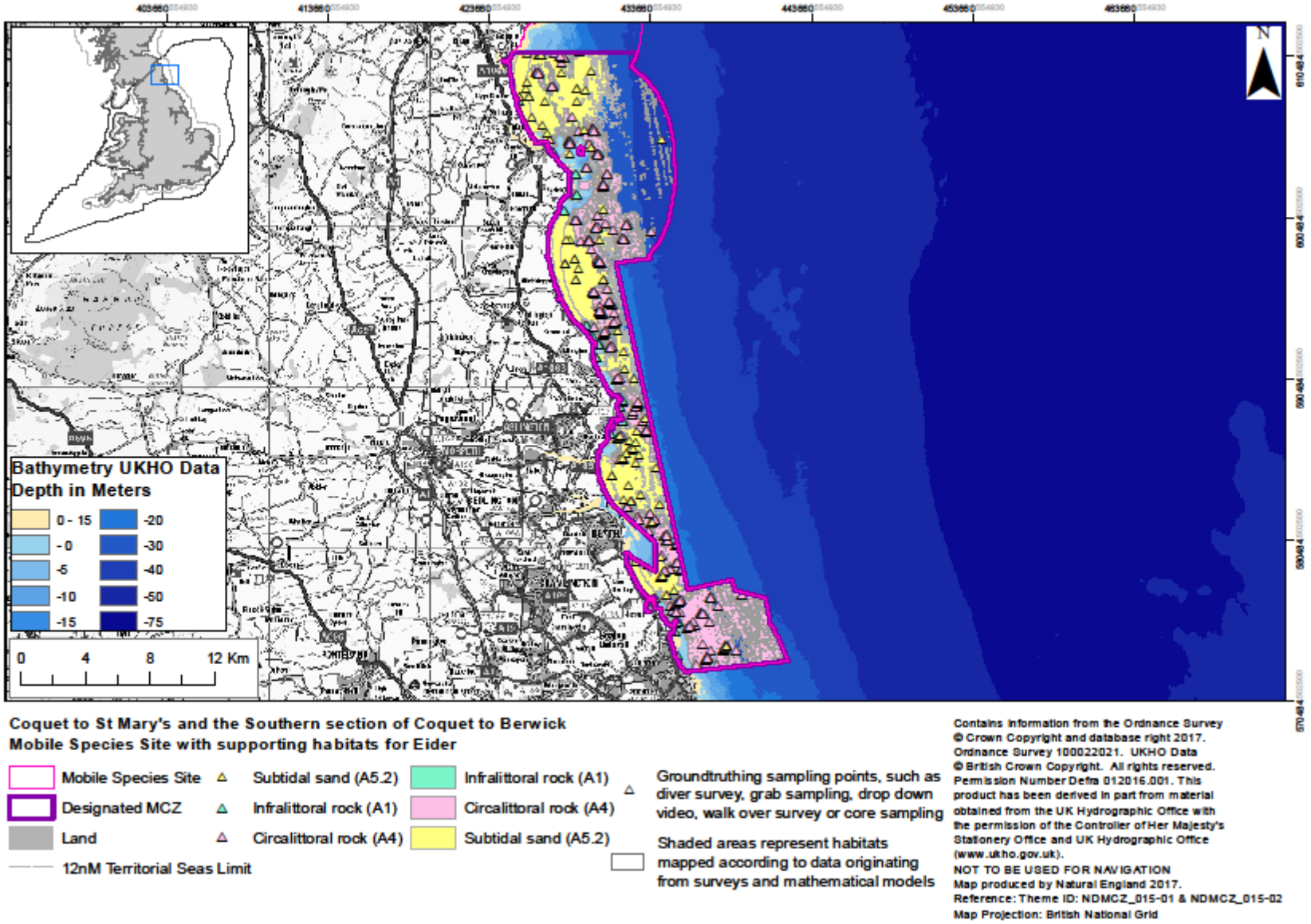

Figure 3 Bathymetry and supporting habitats considered relevant for common eider within the Coquet to St. Mary's MCZ (as proposed by RSPB)

Ecological requirements, relevant for both seasons (breeding, non-breeding)

The diet of the common eider in the breeding and non-breeding seasons consists predominantly of benthic molluscs, particularly mussels (*Mytilus edulis*), although a wide range of crustaceans (e.g. amphipods and isopods), echinoderms, other marine invertebrates and fish may also be taken (Waltho & Coulson 2015, del Hoyo *et al.* 1992). In the north-east of England, and particularly within the feeding area of Coquet Island common eiders, the mussel beds are restricted to the infrequent rocky outcrops along a shoreline dominated by sandy bays and beaches (Coulson 2010). Graham (1975) reported that mussel beds were well established along Amble Harbour wall (located just outside the Coquet to St Mary's MCZ), with other mussel beds sited at Birling Carr, Amble, Hauxley Haven and Bondi Carr, which are all located within the Coquet to St Mary's MCZ. Graham (1975) found that these areas provided feeding for the adult eiders, while the ducklings fed, more often, in the estuary and harbour areas. Figure 5 shows the location of supporting habitats considered relevant to common eider within the Coquet to St Mary's.

Information has been gathered on common eider diving depths and is summarised in Table 6. The information suggests that whilst common eiders are capable of diving to depths of 30 m or more, the majority of dives occur in shallower waters. Figure 3, indicates that the whole of the Coquet to St Mary's MCZ (as proposed by RSPB) covers an area of shallow water of 30 m or less in depth, suggesting that it would be unlikely that significant numbers of common eider would occur further out to sea.

Table 93 Summary of information obtained on common eider dive depths

Water depth (m)			Comments	Source
Minimum	Value	Maximum		
0.15				Player (1970)
		40		Ross & Furness (2000)
5	8.4	9	Immature eider	Bräger *et al.* (1995)
9	11.2	20	Adult eider	Bräger *et al.* (1995)
	7.4	10	The common eider selected water shallower than 10 m. This species normally feeds on molluscs, crustacean and echinoderms in relatively shallow water (<10 metres) The common eider fed between 1.7 and 4.1 times more than expected in the 0-10 metre depth zone, they slightly avoided the 10-20 metre depth zone and completely avoided water >20 metre deep. The mean diving depth of the common eider was 7.4 metres.	Bustnes & Lonne (1997)
		33	Diving for scallops in Norway (Brun 1971)	Bustness & Lonne (1997)
		42	In St Lawrence Canada (Guillemette *et al.* 1993). This observation shows that common eider are capable of diving as deep as king eider however, the fact that common eider usually avoid such depths suggests that they are not as	Bustness & Lonne (1997)

Water depth (m)			Comments	Source
Minimum	Value	Maximum		
			well adapted for deep water feeding.	
		42	Table 1 of this report (summary of reported dive metrics for species considered at potential risk from underwater turbines) states that the common eider has a maximum dive depth of 42 metres (from a study in Canada) and the mean dive depth is unknown. This is referenced to Guillemette *et al.* (1993).	Grant *et al*. (2014)
0		12	The bulk of dives for both subspecies were in the depth range 0-3 metres	Guillemette (2001)
	0-6	24-42	In both winters, the depth selectivity index was well in excess for the 0-6 metre depth range which supports the prediction that eiders strongly selected shallow habitats for feeding. Even though the 24-42 metre depth range was significantly ignored for both winters, we observed eiders were capable of diving to such depths	Guillemette *et al.* (1993)
		42	Source Guillemette *et al.* (1993)	Guillemette *et al.* (1996)
		3-5	Three out of four females dived mostly to depths <3 metres but one female dove up to depths of five metres.	Guillemette *et al.* (2004)
		6.5-9	For the two females followed over nine months, diving occurred in deeper water in winter when most dives were <6 metres but reaching maxima of nine metres for one female and 6.5 metres for another.	Guillemette *et al*. (2004)
		6	Our results are in general agreement with the few studies that have measured depth use in common eiders, which prefer to dive in the 0-6 metre depth range in eastern Canada (Guillemette *et al.* 1993) and in northern Norway (Bustnes & Lonne 1997)	Guillemette *et al.* (2004)
		42	Source Guillemette *et al.* (1993)	Guillemette et al. (2004)
		60		Hawkins *et al.* (2000)
	0-6		The highest concentrations of common eiders were found at shallow water depths. Eiders at	Larsen & Guillemette (2000)

Water depth (m)			Comments	Source
Minimum	Value	Maximum		
			Tuno Knob preferred to dive in 0-6 metre water depth despite tenfold higher benthic biomass in deeper water (6-12 metres) (although this comprised large unprofitable mussels)	
	6-20		Large numbers of common eiders in the Arhus Bay feed at these depths	Larsen & Guillemette (2000)
		25-45	Common eiders are known to dive at depths of 25-45 metres (Brun 1971, Guillemette *et al.* 1993)	Larsen & Guillemette (2000)
25		50	In Norway	Leopold *et al.* (2001)
			Larsen & Guillemette (2000) found that eiders very much prefer natural beds at water depths shallower than six metres than beds at 6-12 metres.	Leopold *et al.* (2001)
		60		Loworn & Jones (1991)
		30	Bivalves are captured by head dipping or diving up to depths of 30 metres	Nehls (2001)
		42-60	A depth of 42 metres was recorded by Guillemette *et al.* (1993) and 60 metres by Cantin *et al.* (1974). Diving to these depths is far beyond their normal aerobic limits, so eiders must switch to anaerobic diving to reach that deep. However, most dives do not reach such depths, with most foraging taking place in depths of less than ten metres.	Waltho & Coulson (2015)
0		15		Ydenberg & Guillemette (1991)

Assessment against Principle 1 Ecological Significance for option (b): Suggested larger amended site with northern extension ('Coquet to Berwick')

Breeding common eider

As shown above (evidence for breeding common eider in the Coquet to St Mary's MCZ), Coquet Island is not the only location along the Northumberland coast to support nationally important numbers of breeding common eider. The Farne Islands (located approximately 30 kilometres north of Coquet Island) support 559 breeding pairs (mean 2012-2016) (see Table 2); representing 2.4% of the Great Britain breeding population of common eider (excluding Shetland) of 23,000 pairs (Musgrove *et al.* 2013). These Islands together with Coquet Island are the main breeding areas of common eiders on the east coast of England

and these islands form the southern limit of regular breeding in the species on the western side of the North Sea (Coulson 2010).

As noted previously, the Birds in Northumberland reports provide information on the main breeding sites, distribution of common eider ducklings and adults and the location of creching sites along the Northumberland coast. These include areas within the Coquet to St Mary's MCZ and the area to the north within the suggested larger amended site with northern extension 'Coquet to Berwick'. Each annual report includes the annual peak counts of common eiders at Lindisfarne NNR. The 2011-2015 reports show that the following areas located within the northern extension area ('Coquet to Berwick') are regularly used by common eider crèches: Holy Island, Budle Bay, Cullernose Point, Seahouses and Beadnell and Howick. Most, if not all, were thought to originate from the Farne Islands or Coquet Island. In 2011, a number of females with young remained around the Farne Islands (instead of heading towards the mainland) and crèches were counted around Longstone and the Wideopens Birds in Northumberland 2011.

As noted previously the Birds in Northumberland reports (2011-2015) recorded groups of 50 or more birds (adults) recorded between June and August at many points along the coast in the area within the northern extension ('Coquet to Berwick') from between Lindisfarne to Berwick-upon-Tweed. The bird reports also give some information on the locations used by male common eiders in the breeding season within the northern extension 'Coquet to Berwick'. In June 2011 a group of birds, mainly sub-adult males, was recorded in the Snipe Point and Black Law areas (Birds in Northumberland 2011). In April 2015, 230 male common eiders were noted roosting at Black Law, Lindisfarne NNR (Birds in Northumberland 2015). Groups of 50 or more birds were also observed in the Aln, Blyth and Coquet estuaries, particularly in June.

The two MSc studies (Wilson 1990 and Graham 1975) covered areas to the north of the Coquet to St Mary's MCZ that are located within the northern extension area of the suggested larger amended site ('Coquet to Berwick') option. Wilson (1990) found that areas located within the northern extension area were used by feeding common eider ducklings from Coquet Island, with the second highest-used area by ducklings recorded to be the area between Cullernose to Craster. This area is north of the Coquet to St Mary's MCZ and is also favoured by older ducklings. Wilson (1990) also notes (as Coulson *pers. comm.*) that previous work involving the marking of ducklings from the Farne's showed that they only got as far south as Embleton (approximately 1.5 miles north of Dunstanburgh castle), which is located within the suggested northern extension area and indicates that ducklings from the Farne Islands also use areas within the extension.

Coquet Estuary and Blyth Estuary were both excluded from the original MCZ boundary. The North Sea regional MCZ project worked with a range of sea users and interest groups to identify MCZs within the North Sea. The local hub, which subsequently proposed the Marine Conservation Zones in the Northumbria and Tyne & Wear area in 2011, did not have any ports' representatives at the workshops that identified potential sites. As a result the local hub decided against proposing features inside an estuary, within the confines of land, with an active port, without the input of ports' representatives; therefore the River Coquet and the port (Amble Marina) were excluded from the MCZ boundary. The Blyth Estuary was also excluded due to opposition raised by the Port of Blyth with regard to the estuary being included in the ports 'statutory harbour limits' therefore this area of the MCZ boundary was excluded on socio-economic grounds as agreed by Defra.

Although Coquet Estuary and Blyth Estuary were not included in the original Coquet to St. Mary's MCZ due to the reasons outlined above, they have been included in the assessment because recent evidence and reports suggest these estuaries provide important habitats for non-breeding common eiders and common eider ducklings.

The Farne Islands are located within the suggested larger amended site with northern extension ('Coquet

to Berwick'), meaning that the areas of sea used by birds from both colonies (Farnes and Coquet) for essential maintenance activities would be covered by the suggested larger amended site with northern extension.

Non-breeding common eider

The evidence for non-breeding common eider for the Coquet to St Mary's MCZ shown above indicates that the distribution of non-breeding common eider along the Northumberland coast extends further north than the Coquet to St Mary's MCZ, with more birds recorded in this northern area (see Tables 4 and 5 above). Therefore, for the suggested larger amended site within northern extension, the WeBS core count data for the most recent five years (2010/11-2014/15) and the winter 2015/16 NEWS survey data from sectors located along the Northumberland coast have been re-categorised into the following area groups:

- Sectors located within the suggested larger amended site with northern extension (ie those located within the Coquet to St Mary's MCZ boundary and those located to within the northern extension 'Coquet to Berwick');
- Sectors located the south of Coquet to St Mary's MCZ; and,
- Sectors covering the estuaries that are not included within the Coquet to St Mary's MCZ boundary, i.e. located to the west of the boundary (Coquet estuary and Blyth Estuary). Although Coquet estuary and Blyth Estuary were not included in the original Coquet to St. Mary's MCZ they have been included in the assessment as recent evidence and reports suggest these estuaries provide important habitats for non-breeding eiders and eider ducklings.

Table 7 summarises the common eider count total from the WeBS core count and winter 2015/16 NEWS count sectors located in each re-categorised area group. Figures 4 and 5 show the WeBS and NEWS data per section respectively and show the distribution of birds within the suggested amended larger site with northern extension boundary and confirm the reduction in numbers to the south of the site.

Table 94 Summary of common eider totals within each re-categorised area from WeBS core counts (2010/11-2014/15) and the winter 2015/16 NEWS survey.

Area	Common eider total five year (2010/11-2014/15) mean peak count from WeBS core counts (based on five year peak count per sector located within area)	Common eider total count from winter 2015/16 NEWS survey (based on peak count per sector located within area)
Within suggested amended larger site (i.e. within Coquet to St Mary's MCZ + within northern extension)	3,146	499
South of Coquet to St Mary's MCZ	152	74
Estuaries outside Coquet to St Mary's MCZ	125*	20**

* Coquet Estuary and Blyth Estuary
** Blyth Estuary only

Table 7 shows that the WeBS five year peak mean (2010/11-2014/15) common eider count for within the suggested larger amended site with northern extension is 3,146 birds, which represents 26.21% of the

English and 5.72% of the Great Britain non-breeding populations, showing the English and Great Britain-importance of the suggested larger extended site to the species. The mean peak total for the winter 2015/16 NEWS data of 499 birds for the suggested larger amended site with northern extension (Table 7) represents 4.16% of the English and 0.91% of the Great Britain non-breeding populations; again indicating the English and Great Britain importance of the suggested larger extended site to the species.

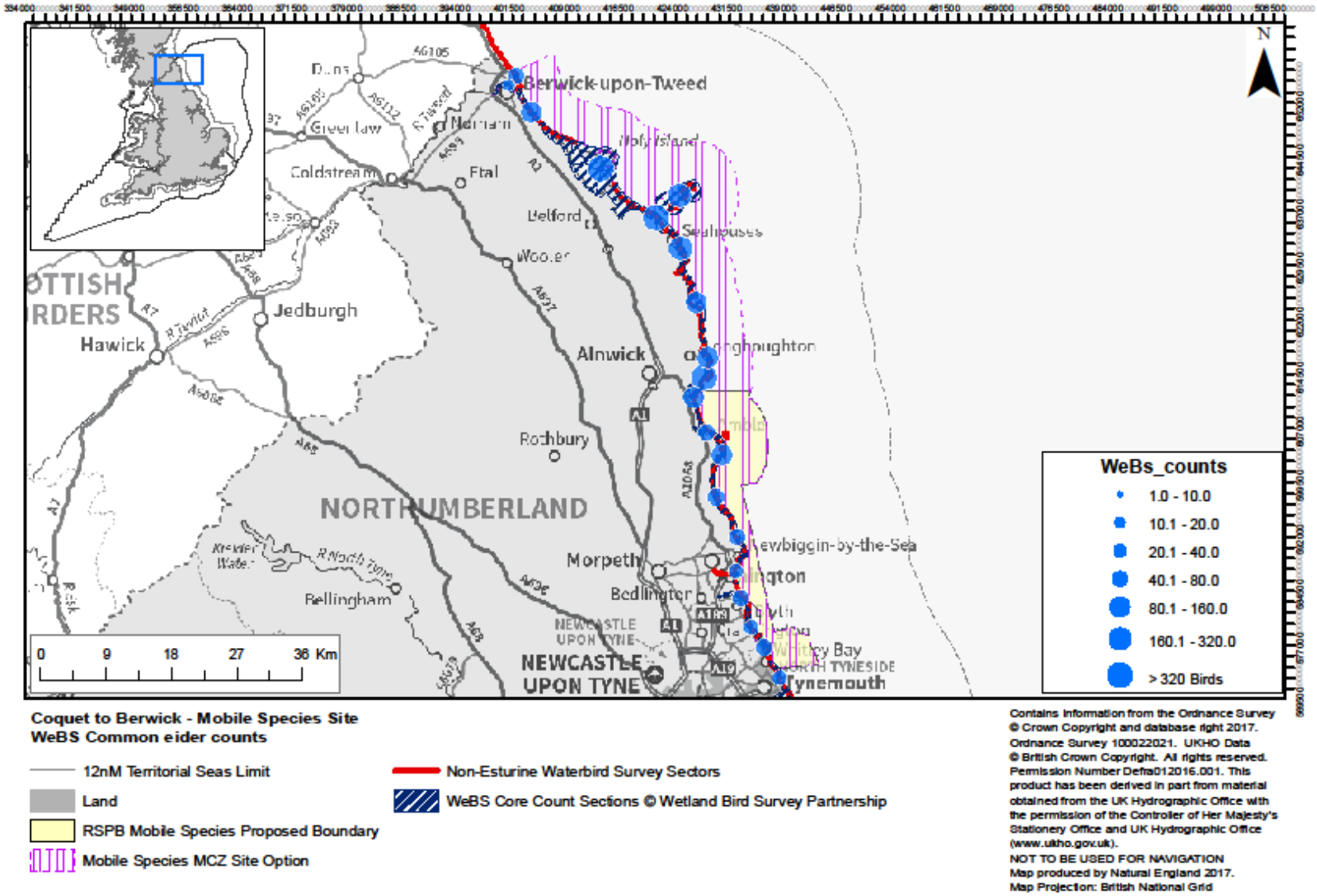

Figure 4 Five year mean peak (2010/11-2014/15) counts of common eider per sector from WeBS core counts along the Northumberland coast in the context of the Coquet to St Mary's MCZ plus suggested northern extension 'Coquet to Berwick'

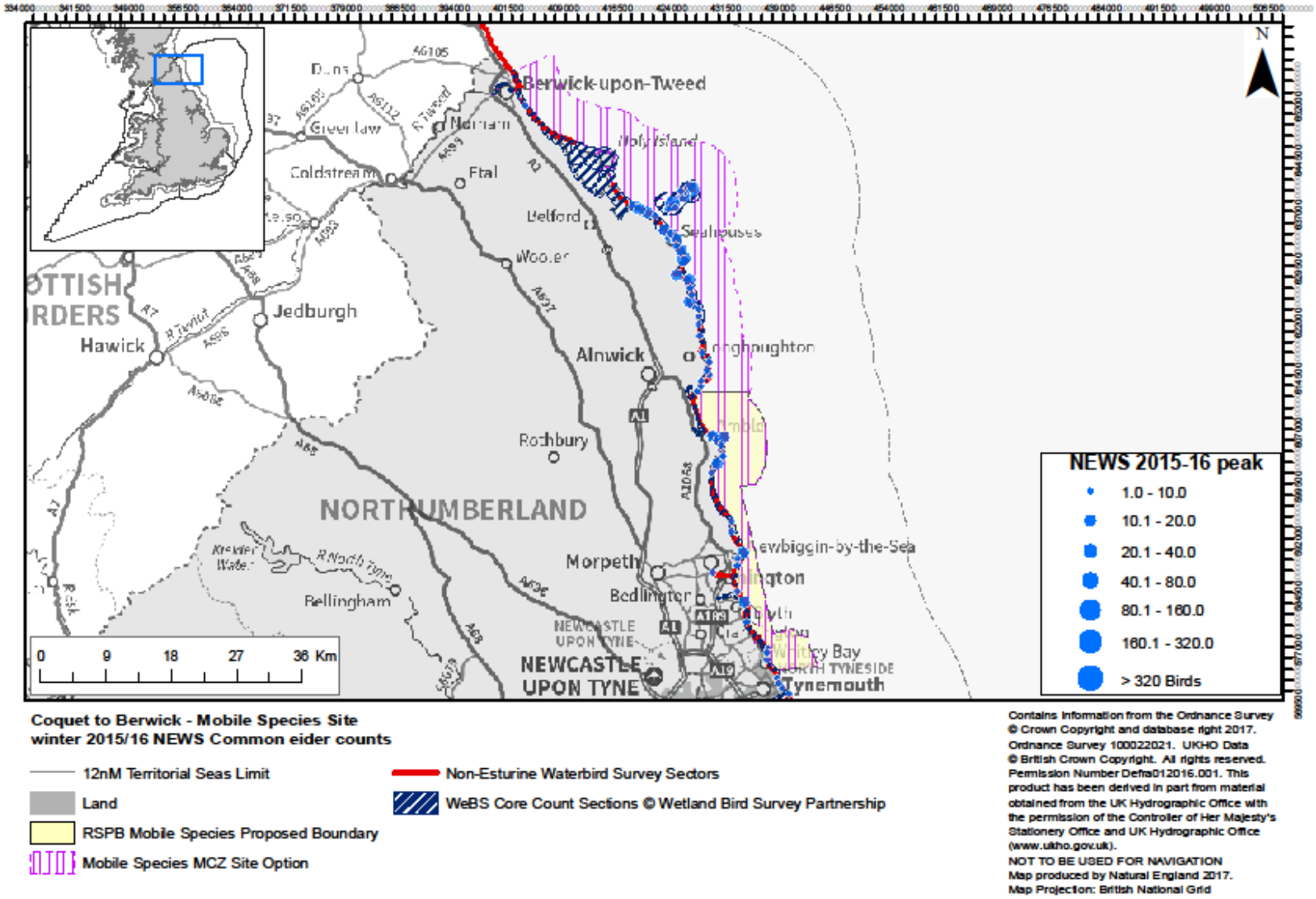

Figure 5 Mean peak count of common eider per sector from the winter 2015/16 NEWS survey for the Northumberland coast in the context of the Coquet to St Mary's MCZ plus suggested northern extension 'Coquet to Berwick'

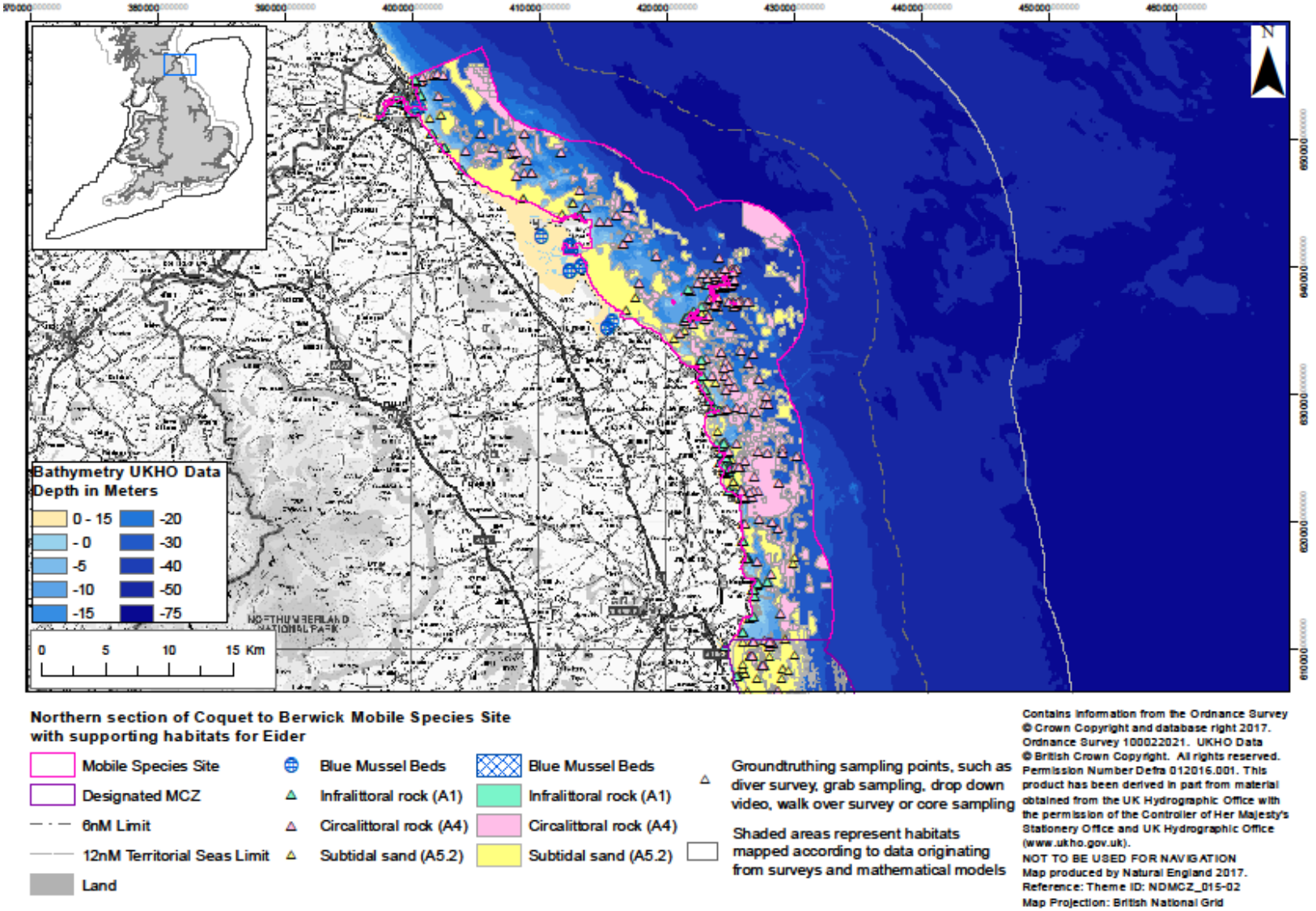

Figure 6 Bathymetry and supporting habitats considered relevant for common eider within the suggested northern extension 'Coquet to Berwick' of the larger amended site

Ecological requirements, relevant for both seasons (breeding, non-breeding)

As noted above, the diet of the common eider in the breeding and non-breeding seasons consists predominantly of benthic molluscs, particularly mussels (*Mytilus edulis*), although a wide range of crustaceans (eg amphipods and isopods), echinoderms, other marine invertebrates and fish may also be taken (Waltho & Coulson 2015, del Hoyo *et al*. 1992). In the north-east of England, the mussel beds are restricted to the infrequent rocky outcrops along a shoreline dominated by sandy bays and beaches (Coulson 2010). Mussel beds are located at Fenham Flats adjacent to Holy Island (Green 2010), which is located to the north of the Coquet to St Mary's MCZ. Figure 6 shows the location of supporting habitats considered relevant to common eider within the Coquet to St Mary's MCZ.

Information has been gathered on common eider diving depths and is summarised in Table 6. The information suggests that whilst common eiders are capable of diving to depths of 30 metres or more, the majority of dives occur in shallower waters. Figure 6, indicates that as with the Coquet to St Mary's MCZ, the whole of the suggested northern extension 'Coquet to Berwick' covers an area of shallow water of 30 metres or less in depth, meaning that the whole of the suggested larger amended site covers shallow waters of 30 metres or less in depth. This would suggest that it would be unlikely that significant numbers of common eider would occur further out to sea.

Principal 1 Ecological significance: Conclusion

There is no question regarding the reliability of the colony data and that from the Birds in Northumberland reports used for breeding season evidence or the WeBS and NEWS data sources used for the non-breeding evidence, nor are there any issues regarding the age of these data. These data show that the Coquet to St Mary's MCZ (as proposed by RSPB) and the suggested amended larger site with northern extension 'Coquet to Berwick' are significant for both breeding and non-breeding common eider in the north-east of England and also at the English and Great Britain level. The information from the two MSc theses, whilst older, provide additional evidence for the use of both sites (existing MCZ area and the suggested larger, extended area) by feeding birds, both adults and ducklings, and provide evidence for connectivity between both sites and common eider breeding colonies, particularly that at Coquet Island, and the areas they use for feeding for their young. So, both sites (Coquet to St Mary's MCZ and the suggested larger amended site with northern extension) clearly provide consistent supporting habitats or processes for the species. In the absence of any other site-based protection for this species during the breeding season in the UK, and the importance of this site in an English and UK context, scoring against the principle of ecological significance can be re-assessed as **HIGH** for the Coquet to St Mary's site (as proposed by RSPB) and can be assessed as **HIGH** for the suggested larger amended site with northern extension.

6.7.2.2 Persistence

Table 95 Summary of scoring for Principle 2 Persistence

Species proposed	Original score	Potential score	Updated score (taking into account further evidence review, Feb 2017)
Common eider	**Low**	**Moderate**	Coquet to St Mary's MCZ (as proposed by RSPB): **Moderate** As although additional evidence obtained suggested evidence for continued persistent presence, as the site supports nationally (England) important numbers (>1% of estimated English non-breeding population) of non-breeding common eider and Coquet Island supports nationally important numbers of breeding common eider, there is a degree of uncertainty due to the numbers of common eider present to the north of the site both in the breeding

Species proposed	Original score	Potential score	Updated score (taking into account further evidence review, Feb 2017)
			and non-breeding seasons. Numbers within the site are persistently at higher levels than the waters to the south of the site and suggested larger numbers are unlikely to be found further out to sea than within the site. Suggested larger amended site with northern extension ('Coquet to Berwick): **High** As the additional evidence indicated, there is continued persistent presence of breeding and non-breeding common eider of regional and national importance in both the breeding and non-breeding seasons and at higher numbers/densities within the suggested larger boundary than within the areas outside of the boundary. This is based on reliable data sources (Wetland Bird Survey, WeBS data, Non-estuarine Waterbird Survey, NEWS data and colony count data from colony managers).

Justification

Original assessment (Coquet to St. Mary's)

Evidence was presented to show that common eider are still present, that the Coquet to St Mary's MCZ is used year-round by common eider, with increased numbers in winter. There was no evidence offered to show that there are higher numbers of common eider inside the MCZ than outside, and in fact the proposal points out that eider are also present within the wider region. This suggested an assessment against the principle for persistence of **LOW**.

Additional evidence gathered and revised assessment (summary of evidence for Coquet to St. Mary's and 'Coquet to Berwick')

Additional evidence has been gathered in order to assess whether there are more breeding and non-breeding common eider more of the time within the Coquet to St Mary's MCZ as proposed by RSPB than in the areas outside of the site (see section 4.2.1), and the same for the suggested larger amended site with northern extension ('Coquet to Berwick') (see section 4.2.2).

This evidence has been obtained from:

- Colony managers; for breeding colony counts for common eider breeding colonies located along the Northumberland coast.
- Wetland Bird Survey (WeBS) core count data for 2010/11 to 2014/15 (available in Frost *et al*. 2016); from sectors located along the Northumberland coast from the Durham Coast (to the south of Coquet to St Mary's MCZ) to Berwick-upon-Tweed on the England/Scotland border (north of Coquet to St Mary's MCZ, but within the suggested northern extension, 'Coquet to Berwick').
- The results from the winter 2015/16 Non-estuarine Waterbird Survey (NEWS) (obtained from BTO) from sectors located between Middlesbrough (to the south of Coquet to St Mary's MCZ) to Berwick-upon-Tweed on the England/Scotland border (north of Coquet to St Mary's MCZ, but within the suggested northern extension, 'Coquet to Berwick'). The NEWS surveys are a national programme of surveys of birds of the open coast.

- Data on eider dive depth abilities and maps of bathymetry data for the area.

Assessment against Principle 2 Persistence for option (a): proposed Coquet to St Mary's MCZ

Breeding common eider

As described above, the RSPB submission noted that Coquet Island is a key common eider breeding colony on the Northumberland coast. In addition to Coquet Island SSSI, the Farne Islands were notified as a SSSI and breeding common eider is also a notified feature of this site. The Farne Islands are located to the north of the Coquet to St Mary's MCZ. Coulson (2010) notes that Coquet Island, together with the Farne Islands, 30 kilometres to the north, are the main breeding areas of common eiders on the east coast of England, and that these islands form the southern limit of regular breeding in the species on the western side of the North Sea. This confirms that there are no important areas for breeding common eider to the south of the Coquet to St Mary's MCZ boundary.

Breeding common eider records for the Farne Islands between 1971 and 2015 are presented in Figure 9 From the data presented in Table 2, the most recent five year mean (2012-2016) count of breeding common eider on the Farne Islands is 559 breeding pairs, representing 2.4% of the Great Britain breeding population of common eider (excluding Shetland) of 23,000 pairs (Musgrove *et al*. 2013), showing the importance of this site and hence of the additional area to the north of the Coquet to St Mary's MCZ.

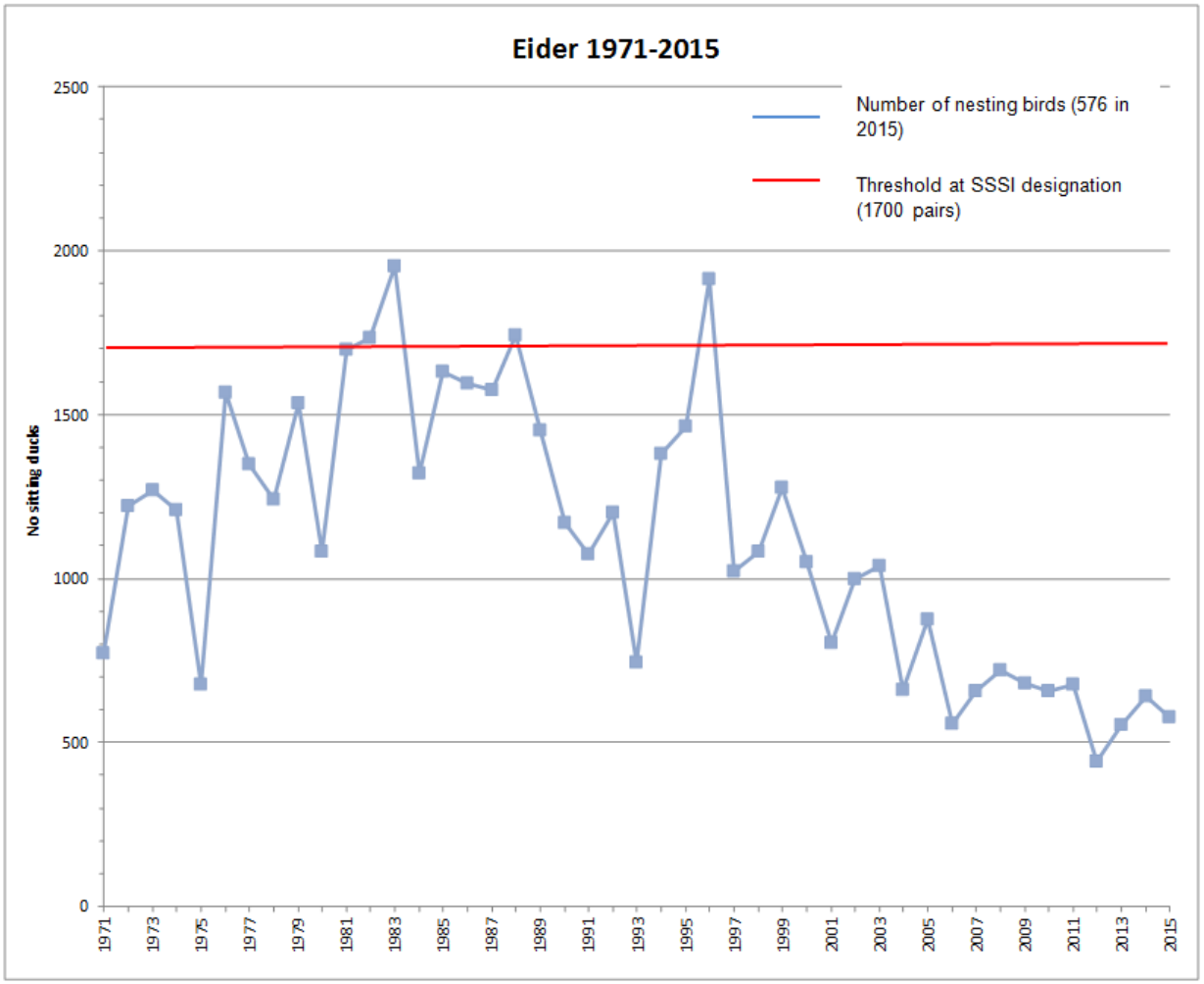

Figure 7 Number of breeding pairs of common eider on the Farne Islands (1971-2015). (Data from National Trust Wardens on the Farne Islands). Note: one nesting duck equates to one breeding pair

Non-breeding common eider

As discussed in section 4.1.1 above, the WeBS core count data for the most recent five years (2010/11-2014/15) and the winter 2015/16 NEWS survey data from sectors located along the Northumberland coast have been categorised into the following area groups:

- Sectors located within the Coquet to St Mary's MCZ boundary;
- Sectors located to the north of Coquet to St Mary's MCZ;
- Sectors located the south of Coquet to St Mary's MCZ; and,
- Sectors covering the estuaries that are not included within the Coquet to St Mary's MCZ boundary, i.e. located to the west of the boundary (Coquet estuary and Blyth Estuary). Although Coquet estuary and Blyth Estuary were not included in the original Coquet to St. Mary's MCZ they have been included in the assessment as recent evidence and reports suggest these estuaries provide important habitats for non-breeding common eiders and common eider ducklings.

The mean peak common eider counts from the 2010-11 to 2014/15 WeBS core counts and winter 2015/16 NEWS surveys are summarised in Table 9 below, as totals per area described above. Figure 8 shows the mean peak common eider counts for each area in each year between 2010/11 and 2014/15 from the WeBS core counts and puts the counts for the Coquet to St Mary's MCZ (as proposed by RSPB) in context with the wider area. Table 9 shows that the five year peak mean (2010/11-2014/15) common eider count for within the Coquet to St Mary's MCZ (as proposed by RSPB) is 475 birds and the winter 2015/16 NEWS peak common eider count for within the site is 150 birds. If the estimated figure for the English wintering population of eider of around 12,000 individuals (*pers. comm*. Andy Musgrove) used by RSPB in their proposal for this site is used, then the WeBS figure represents 3.95% and the NEWS figure 1.25% of this non-breeding population. The WeBS figure represents 0.86% and the NEWS figure represents 0.27% of the Great Britain non-breeding population of common eider (excluding Shetland) of 55,000 individuals (Musgrove *et al.* 2013). This indicates the importance of the RSPB proposed site to the north-east of England and at an English scale.

Table 9 and Figure 8 show the number of common eider in the non-breeding season recorded at the sites located to the south of the Coquet to St Mary's MCZ are lower than within the site, indicating that the areas to the south of the site are of lower importance to common eiders in the north-east of England in the non-breeding season. Table 9 and Figure 8 also show that significant numbers of non-breeding common eider are also found to the north of the Coquet to St Mary's site. Figures 1 and 2 showing the WeBS and NEWS data per sector confirm this continued distribution along the coast within the Coquet to St Mary's MCZ and continuing further north along the coast up to Berwick-upon-Tweed, as well as the reduction in numbers to the south of the Coquet to St Mary's MCZ.

Table 96 Summary of common eider totals within each area from WeBS core counts (2010/11-2014/15) and the winter 2015/16 NEWS survey, for putting the Coquet to St Mary's MCZ (as proposed by RSPB) in context with the wider area.

Area	Common eider total five year (2010/11-2014/15) mean peak count from WeBS core counts (based on five year peak count per sector located within area)	Common eider total count from winter 2015/16 NEWS survey (based on peak count per sector located within area)
Within Coquet to St Mary's MCZ	475	150
North of Coquet to St Mary's MCZ	2,671	349
South of Coquet to St Mary's MCZ	152	74
Estuaries outside Coquet to St Mary's MCZ	125*	20**

* Coquet Estuary and Blyth Estuary
** Blyth Estuary only

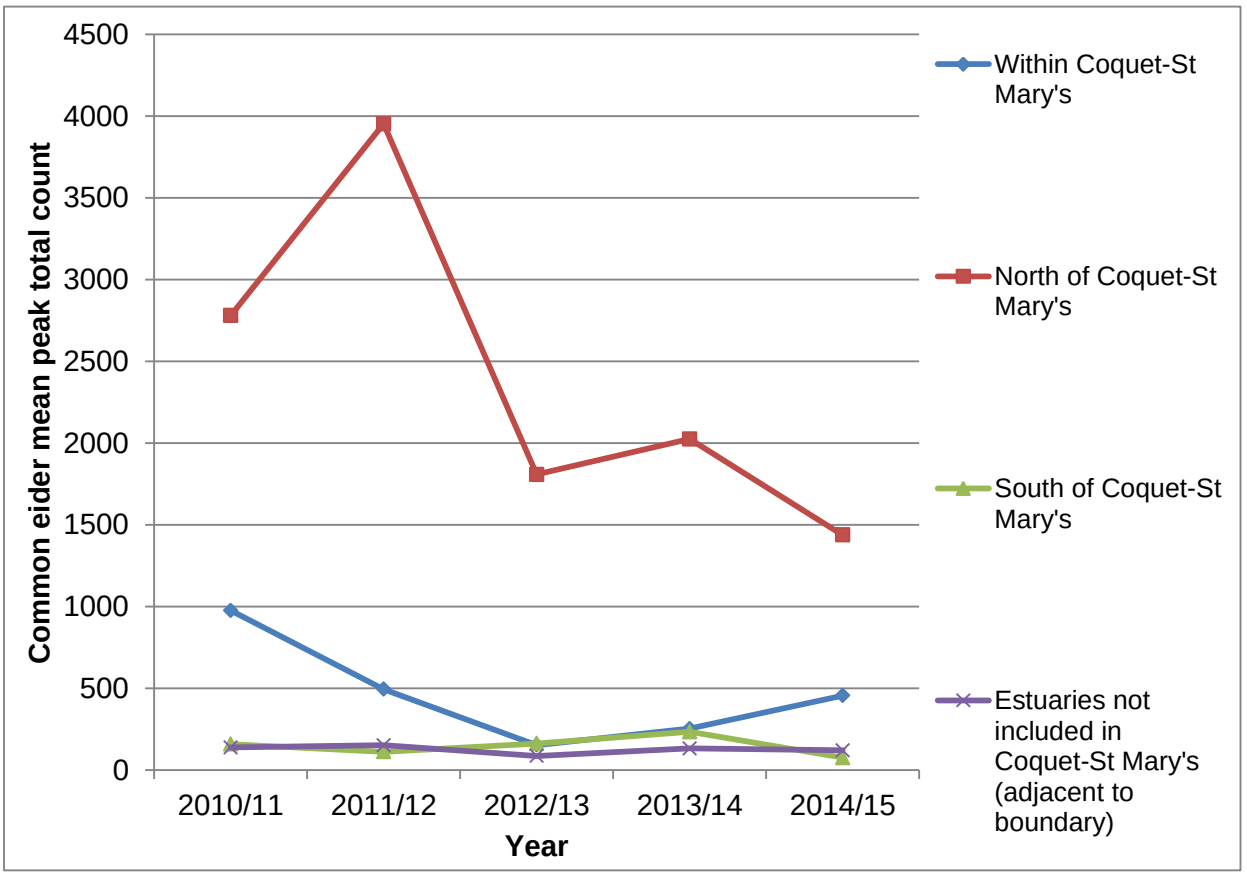

Figure 8 Mean peak common eider counts for each area in each year between 2010/11 and 2014/15 from the WeBS core counts, in the context of the Coquet to St Mary's MCZ (as proposed by RSPB) with the wider area.

Ecological requirements, relevant for both seasons (breeding, non-breeding)

As noted in section 4.1.1, information has been gathered on common eider diving depths and is summarised in Table 6. The information suggests that whilst common eiders are capable of diving to depths of 30 m or more, the majority of dives occur in shallower waters. Figure 3, indicates that the whole of the Coquet to St Mary's MCZ (as proposed by RSPB) covers an area of shallow water of 30 m or less in depth, suggesting that it would be unlikely that significant numbers of common eider would occur further out to sea than the area covered by the at sea extent of the Coquet to St Mary's MCZ.

Assessment against Principle 2 Persistence for option (b): Suggested larger amended site with northern extension ('Coquet to Berwick')

Breeding common eider

As shown above in the evidence for breeding common eider for the Coquet to St Mary's MCZ, Coquet Island is not the only location along the Northumberland coast to support nationally important numbers of breeding common eider. The Farne Islands (located approximately 30 kilometres north of Coquet Island) have supported nationally important numbers of breeding common eider since 1971 (see Figure 7) and the most recent five year mean (2012-2016) for the site is 559 breeding pairs (see Table 2). This represents 2.4% of the Great Britain breeding population of common eider (excluding Shetland) of 23,000 pairs (Musgrove *et al*. 2013). These Islands together with Coquet Island are the main breeding areas of common eiders on the north-east coast of England and these islands form the southern limit of regular breeding in the species on the western side of the North Sea (Coulson 2010).

The Farne Islands are located within the suggested larger amended site with northern extension ('Coquet to Berwick'), meaning that the areas of sea used by birds from both colonies (Farnes and Coquet) for essential maintenance activities will be covered by this suggested larger amended site with northern extension.

As noted previously, no breeding areas to the south of Coquet Island have been recorded, so the suggested larger amended site with northern extension covers all known key breeding areas for common eider on the Northumberland coast.

Non-breeding common eider

The evidence for non-breeding common eider for the Coquet to St Mary's MCZ shown above indicates the distribution of non-breeding common eider along the Northumberland coast extends further north than the Coquet to St Mary's MCZ, with more birds recorded in this northern area (see Table 9 above). Therefore, for the suggested larger amended site within the suggested northern extension ('Coquet to Berwick'), the WeBS core count data for the most recent five years (2010/11-2014/15) and the winter 2015/16 NEWS survey data from sectors located along the Northumberland coast have again been re-categorised into the following area groups:

- Sectors located within the suggested larger amended site with northern extension (i.e. those located within the Coquet to St Mary's MCZ boundary + those located to within the northern extension 'Coquet to Berwick');
- Sectors located the south of Coquet to St Mary's MCZ; and,
- Sectors covering the estuaries that are not included within the Coquet to St Mary's MCZ boundary, i.e. located to the west of the boundary (Coquet estuary and Blyth Estuary).

The mean peak common eider counts from the 2010-11 to 2014/15 WeBS core counts and winter 2015/16 NEWS surveys are summarised in Table 8 below, as totals per re-categorised area described above. Figure 9 shows the mean peak common eider counts for each area in each year between 2010/11

and 2014/15 from the WeBS core counts and puts the counts for the suggested larger amended site with northern extension in context with the wider area. Table 8 shows that the five year peak mean (2010/11-2014/15) common eider count for within the suggested larger amended site with northern extension is 3,146 birds and the winter 2015/16 NEWS peak common eider count for within this site is 499 birds. If the estimated figure for the English wintering population of eider (of around 12,000 individuals (*pers. comm.* Andy Musgrove)) cited by RSPB in their proposal for this site is used, then the WeBS figure represents 26.22% and the NEWS figure 4.16% of this non-breeding population. The WeBS figure represents 5.72% and the NEWS figure represents 0.91% of the Great Britain non-breeding population of common eider (excluding Shetland) of 55,000 individuals (Musgrove *et al.* 2013). This indicates the importance of the suggested larger amended site with northern extension to the north-east of England and at an English and even Great Britain scale.

Table 10 and Figure 9 show the number of common eider in the non-breeding season recorded at the sites located to the south of the suggested larger amended site with a northern extension are lower than within the suggested site, indicating that the areas to the south of the site are of lower importance to common eiders in the north-east of England in the non-breeding season. Figures 3 and 4 show the WeBS and NEWS data per section respectively and show the distribution of birds within the suggested amended larger site with northern extension boundary and confirm the reduction in numbers to the south of the site.

Table 97 Summary of common eider totals within each area from WeBS core counts (2010/11-2014/15) and the winter 2015/16 NEWS survey, for putting the suggested larger amended site with northern extension in context with the wider area.

Area	Common eider total five year (2010/11-2014/15) mean peak count from WeBS core counts (based on five year peak count per sector located within area)	Common eider total count from winter 2015/16 NEWS survey (based on peak count per sector located within area)
Within amended suggested larger site (i.e. within Coquet to St Mary's MCZ + within northern extension)	3,146	499
South of Coquet to St Mary's MCZ	152	74
Estuaries outside Coquet to St Mary's MCZ	125*	20**

* Coquet estuary and Blyth Estuary
** Blyth Estuary only

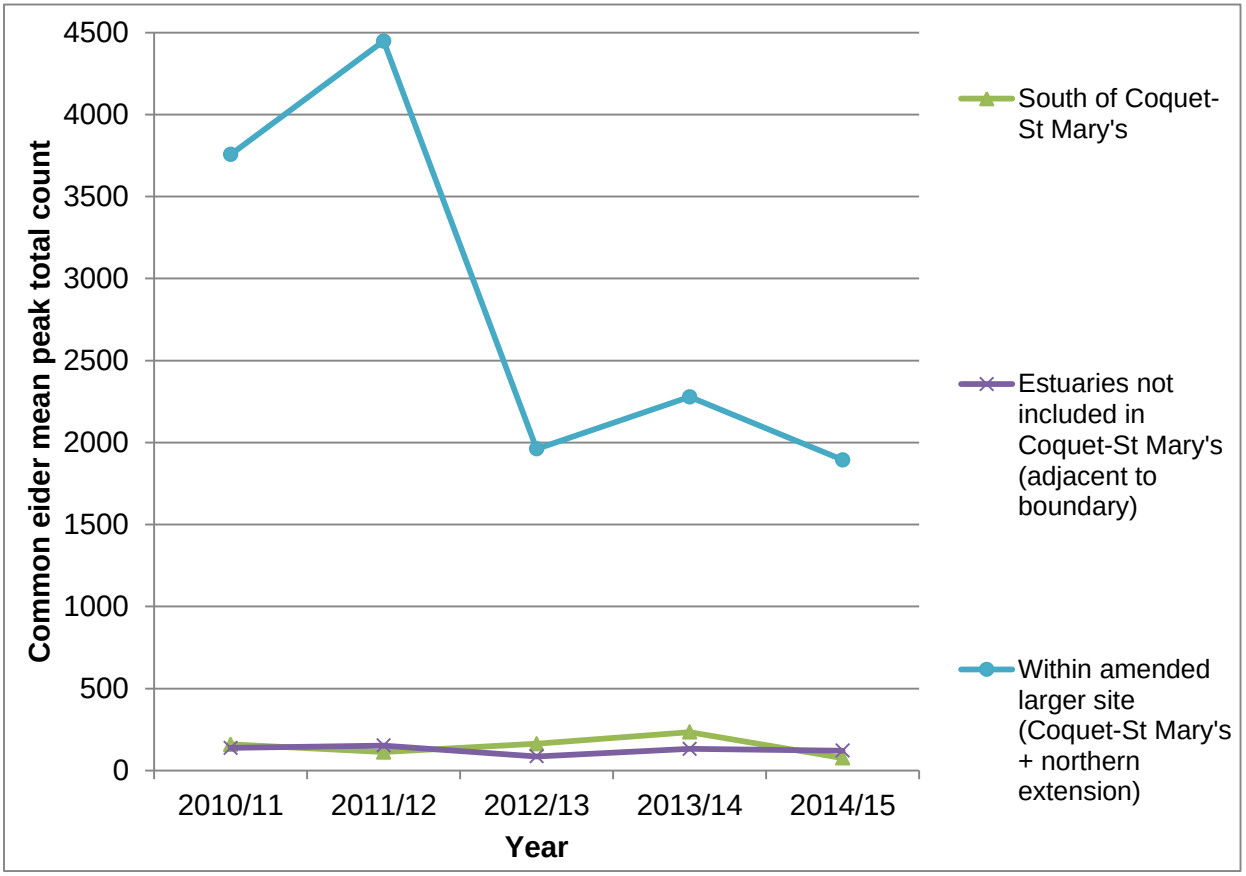

Figure 9 Mean peak common eider counts for each area in each year between 2010/11 and 2014/15 from the WeBS core counts, in the context of the suggested larger amended site with northern extension ('Coquet to Berwick') with the wider area.

Ecological requirements, relevant for both seasons (breeding, non-breeding)

As noted in section 4.1.2, information has been gathered on common eider diving depths and is summarised in Table 6. The information suggests that whilst common eiders are capable of diving to depths of 30 m or more, the majority of dives occur in shallower waters. Figure 6 indicates that as with the Coquet to St Mary's MCZ, the whole of the northern extension 'Coquet to Berwick' covers an area of shallow water of 30 m or less in depth, meaning that the whole of the suggested larger amended site covers shallow waters of 30 m or less in depth. This would suggest that it would be unlikely that significant numbers of common eider would occur further out to sea than the area covered by the at sea extent of the suggested larger amended site with northern extension.

Principle 2 Persistence: Conclusion

The additional evidence provides three independent data sources (one for the breeding season and two for the non-breeding season) and there is no question regarding the reliability of the colony data and the WeBS and NEWS data sources or any issue regarding the age of these data. They suggest evidence for continued persistent presence of common eider within the Coquet to St Mary's MCZ as proposed by RSPB in the non-breeding season at nationally (England) important numbers (>1% of estimated English non-breeding population) and Coquet Island supports nationally important numbers of breeding common eider. However, there is a degree of uncertainty due to the numbers of common eider present to the north of the site both in the breeding and non-breeding seasons. Numbers within the site are persistently at higher levels than the waters to the south of the site and the common eider dive depth information and the bathymetry map suggests that suggested larger numbers of common eider are unlikely to be present further out to sea than within the site. This suggests that the score for this principle can be re-assessed as **MODERATE** for the Coquet to St Mary's MCZ site as proposed by RSPB.

The same evidence sources have been used for the suggested larger amended site with northern extension ('Coquet to Berwick'). In the case of this site, the additional data presented confirm the persistent presence of both breeding and non-breeding common eider within this suggested larger site at higher densities than the surrounding waters to the south and out to sea for this site. This suggests that the score for this principle can be assessed as **HIGH** for the suggested larger extended site with northern extension.

6.7.2.3 Site size and delineation

Table 98 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score	Potential score	Updated score (taking into account further evidence review, Feb 2017)
Common eider	**Low**	**Moderate**	Coquet to St Mary's MCZ (as proposed by RSPB): **Moderate** As additionally obtained evidence suggested; although the site supports nationally (England) important numbers (>1% of estimated English non-breeding population) of non-breeding common eider and Coquet Island supports nationally important numbers of breeding common eider, there is a degree of uncertainty over the suitability of the size and location of the northern boundary of the site due to the numbers of common eider present to the north of the site both in the breeding and non-breeding seasons. Numbers within the site are persistently at higher levels than the waters to the south of the site and larger numbers are unlikely to be found further out to sea than the current at sea boundary. Suggested larger amended site with northern extension ('Coquet to Berwick'): **High** As the additional evidence indicates the boundary of the northern extension ('Coquet to Berwick') plus the existing Coquet St Mary's boundary encompasses the area of the Northumberland coast that is of greatest importance for common eider in the breeding and non-breeding season. Numbers within the site are persistently at higher levels than the waters to the south of the site and larger numbers are unlikely to be found further out to sea than the current at sea boundary. This is based on reliable data sources (Wetland Bird Survey, WeBS data, Non-estuarine Waterbird Survey, NEWS data and colony count data from colony managers).

Justification

Original assessment (Coquet to St Mary's)

This area (although an MCZ already) seems to have a good population of eider but the wider area also seems to be equally important for eider, so an MCZ covering a larger stretch of the Northumberland coastline and sea area would make more sense. Also, the Coquet estuary lies outside the existing MCZ and only parts of this estuary fall with the various SSSIs, including the north bank of the outer estuary which appears well used by eider. There might be merit in considering an MCZ extension into the Coquet estuary as part of any revised proposal to ensure that principle 3 is better met. Similarly, the Aln Estuary is likely to be an important area for eider crèches (as it is not far from Coquet Island) and also ought to be

considered for inclusion in any MCZ for eider ducks so as to better meet principle 3. This suggested an assessment of site size and delineation of **LOW.**

Additional evidence gathered and revised assessment (summary of evidence for Coquet to St. Mary's and 'Coquet to Berwick')

Additional evidence has been gathered in order to assess whether there are more breeding and non-breeding common eider more of the time within the Coquet to St Mary's MCZ as proposed by RSPB than in the areas outside of the site, and the same for the suggested larger site with northern extension.

This evidence has been obtained from:

- Colony managers, for breeding colony counts for common eider breeding colonies located along the Northumberland coast.
- Wetland Bird Survey (WeBS) core count data for 2010/11 to 2014/15 (available in Frost *et al.* 2016); from sectors located along the Northumberland coast from the Durham Coast (to the south of Coquet to St Mary's MCZ) to Berwick-upon-Tweed on the England/Scotland border (north of Coquet to St Mary's MCZ, but within the suggested northern extension 'Coquet to Berwick').
- The results from the winter 2015/16 Non-estuarine Waterbird Survey (NEWS) (obtained from BTO) from sectors located between Middlesbrough (to the south of Coquet to St Mary's MCZ) to Berwick-upon-Tweed on the England/Scotland border (north of Coquet to St Mary's MCZ, but within the suggested northern extension 'Coquet to Berwick'). The NEWS surveys are a national programme of surveys of birds of the open coast.
- Data on eider dive depth abilities and maps of bathymetry data for the area.

Assessment against Principle 3 Site size and delineation for option (a): proposed Coquet to St Mary's MCZ

Breeding common eider

As noted above (see sections 4.1.1 and 4.2.1), Coquet Island is a key common eider breeding colony on the Northumberland Coast located within the Coquet to St Mary's MCZ (as proposed by RSPB) and breeding common eider is a notified feature of the Coquet Island SSSI. No breeding areas to the south of the island have been recorded, indicating that that there are no important areas for breeding common eider to the south of the Coquet to St Mary's MCZ boundary.

Located to the north of the Coquet Island and outside of the Coquet to St Mary's site are the Farne Islands and Lindisfarne. As noted above, breeding common eider is a notified feature of the Farne Islands SSSI. Breeding common eider records for the Farne Islands have been obtained from between 1971 and 2015 are presented in Figure 7. The most recent five year mean (2012-2016) count of breeding common eider on the Farne Islands is 559 breeding pairs, representing 2.4% of the Great Britain breeding population of common eider (excluding Shetland) of 23,000 pairs (Musgrove *et al.* 2013), showing the national importance of this site for breeding common eider. In addition to the Farne Islands, other areas to the north of the Coquet to St Mary's MCZ, have recorded small numbers (a few pairs) of breeding common eider, including Lindisfarne and on the mainland at Dunstanburgh Castle (Wilson 1990; Graham 1975). Breeding common eider data from Lindisfarne from 2005-2016 are presented in Table 3 above.

As detailed previously (see section 4.1.1), the information in the Birds of Northumberland 2011-2015 reports and the studies by Wilson (1990) and Graham (1975) give evidence of the use of areas both within the Coquet to St Mary's MCZ and to the north of the site by both common eider ducklings and adults for feeding. All of these sources showed that the area around Amble (Warkworth) harbour and the

Coquet estuary were important areas for feeding common eider ducklings from Coquet Island and the Farne Islands. Although Coquet estuary and Blyth Estuary were not included in the original Coquet to St. Mary's MCZ they have been included in the assessment as recent evidence and reports suggest these estuaries provide important habitats for non-breeding common eiders and common eider ducklings.

Coquet Estuary and Blyth Estuary were both excluded from the original MCZ boundary. The North Sea regional MCZ project worked with a range of sea users and interest groups to identify MCZs within the North Sea. The local hub, which subsequently proposed the Marine Conservation Zones in the Northumbria and Tyne & Wear area, did not have any ports' representatives at the workshops that identified potential sites. As a result the local hub decided against proposing features inside an estuary, within the confines of land, with an active port without the input of ports' representatives therefore the River Coquet and the port (Amble Marina) were excluded from the MCZ boundary. The Blyth Estuary was also excluded due to opposition raised by the Port of Blyth with regard to the estuary being included in the ports 'statutory harbour limits' therefore this area of the MCZ boundary was excluded on socio-economic grounds as agreed by Defra.

Although Coquet Estuary and Blyth Estuary were not included in the original Coquet to St. Mary's MCZ due to the reasons outlined above, they have been included in the assessment as recent evidence and reports suggest these estuaries provide important habitats for non-breeding common eiders and common eider ducklings.

Non-breeding common eider

As discussed in sections 4.1.1 and 4.2.1 above, the WeBS core count data for the most recent five years (2010/11-2014/15) and the winter 2015/16 NEWS survey data from sectors located along the Northumberland coast have been categorised into the following area groups:

- Sectors located within the Coquet to St Mary's MCZ boundary;
- Sectors located to the north of Coquet to St Mary's MCZ;
- Sectors located the south of Coquet to St Mary's MCZ; and,
- Sectors covering the estuaries that are not included within the Coquet to St Mary's MCZ boundary, ie located to the west of the boundary (Coquet Estuary and Blyth Estuary).

Both the WeBS core count data (five year means 2010/11-2014/15) and the winter 2015/16 NEWS data show the number of common eider in the non-breeding season recorded at the sites located to the south of the Coquet to St Mary's MCZ are lower than within the site, indicating that the areas to the south of the site are of lower importance to common eiders in the north-east of England in the non-breeding season. These data also show that significant numbers of non-breeding common eider are also found to the north of the Coquet to St Mary's site and within the northern extension area (see Table 9 and Figure 8).

Common eider total five year (2010/11-2014/15) mean peak count from WeBS core counts for within the Coquet to St Mary's MCZ is 475 birds, compared to a total of 2,671 birds for the area to the north of the site. If the estimated figure for the English wintering population of eider of around 12,000 individuals (*pers. comm.* Andy Musgrove) used by RSPB in their proposal for this site is used, then the figure for the Coquet to St Mary's MCZ represents 3.96% and the area to the figure for the area to the north of the site represents 22.26% of this non-breeding population. The figure for the Coquet to St Mary's MCZ also represents 0.86% and the figure for the area to the north of the site represents 4.86% of the Great Britain non-breeding population of common eider (excluding Shetland) of 55,000 individuals (Musgrove *et al.* 2013).

Common eider total peak winter 2015/16 count from NEWS for within the Coquet to St Mary's MCZ is 150

birds, compared to a total of 349 birds for the area to the north of the site. The figure for the Coquet to St Mary's MCZ represents 1.25% and 0.27% of the English non-breeding and GB non-breeding populations of common eider respectively. Whilst, the figure for the area to the north of the site represents 2.91% and 0.63% of the English and GB non-breeding populations of common eider respectively.

The above indicates the importance of the Coquet to St Mary's MCZ (as proposed by RSPB) to non-breeding common eider in the north-east of England and at an English scale and the continued importance of the area to the north of the site at an English and even GB scale.

Figures 1 and 2 show the WeBS and NEWS data per sector and these confirm this continued distribution along the coast within the Coquet to St Mary's MCZ and continuing further north along the coast up to Berwick-upon-Tweed, as well as the reduction in numbers to the south of the Coquet to St Mary's MCZ.

Ecological requirements, relevant for both seasons (breeding, non-breeding)

As noted in section 4.1.1, information has been gathered on common eider diving depths and is summarised in Table 6. The information suggests that whilst common eiders are capable of diving to depths of 30 m or more, the majority of dives occur in shallower waters. Figure 3 indicates that the whole of the Coquet to St Mary's MCZ (as proposed by RSPB) covers an area of shallow water of 30 m or less in depth, suggesting that it would be unlikely that significant numbers of common eider would occur further out to sea than the area covered by the at sea extent of the Coquet to St Mary's MCZ.

Assessment against Principle 3 Site size and delineation for option (b): Suggested larger amended site with northern extension ('Coquet to Berwick')

Breeding common eider

As shown above in the evidence for breeding common eider for the Coquet to St Mary's MCZ, Coquet Island is not the only location along the Northumberland coast to support nationally important numbers of breeding common eider. The Farne Islands (located approximately 30 kilometres north of Coquet Island) also support nationally important numbers of breeding common eider, with the most recent five year mean (2012-2016) for the site equalling 559 breeding pairs (see Table 2). This represents 2.4% of the Great Britain breeding population of common eider (excluding Shetland) of 23,000 pairs (Musgrove *et al*. 2013). These islands together with Coquet Island are the main breeding areas of common eiders on the north-east coast of England and these islands form the southern limit of regular breeding in the species on the western side of the North Sea (Coulson 2010). So the suggested larger amended site with northern extension ('Coquet to Berwick') covers the areas of sea around the two main breeding colonies for common eider off the Northumberland coast (Coquet Island and the Farne Islands).

As noted in section 4.1.2, the information in the Birds of Northumberland 2011-2015 reports and the MSc studies by Wilson (1990) and Graham (1975) covers areas located to the north of the Coquet to St Mary's MCZ that are located within the northern extension area ('Coquet to Berwick') of the suggested larger amended site. The Birds of Northumberland reports (2011-2015) notes that areas regularly used by common eider crèches are: Holy Island, Budle Bay, Cullernose Point, Seahouses and Beadnell and Howick. They also noted groups of 50 or more birds (adults) between June and August at many points along the coast in the area within the northern extension ('Coquet to Berwick') from between Lindisfarne to Berwick-upon-Tweed.

Wilson (1990) found that areas located within the northern extension area were used by feeding common eider ducklings from Coquet Island, with the second highest used area by ducklings recorded to be the area between Cullernose to Craster, which is north of the Coquet to St Mary's MCZ and this area also being one favoured by older ducklings. Wilson (1990) also notes (as Coulson *pers. comm*.) that previous work involving marking of ducklings from the Farnes showed that they only got as far south as Embleton (approximately 1.5 miles north of Dunstanburgh castle), which is located within the northern extension

area and indicates that ducklings from the Farne Islands also use areas within the extension.

As noted previously, no breeding areas to the south of Coquet Island have been recorded, so the suggested larger amended site with northern extension covers all known key breeding areas for common eider. So, the evidence suggests that the suggested larger amended site with northern extension covers areas of sea used by birds from both colonies (Farnes and Coquet) for essential maintenance activities will be covered by the suggested larger amended site with northern extension.

Non-breeding common eider

The evidence for non-breeding common eider for the Coquet to St Mary's MCZ indicates the distribution of non-breeding common eider along the Northumberland coast extends further north than the Coquet to St Mary's MCZ, with more birds recorded in this northern area (see Table 9 above). Therefore, for the suggested larger amended site within northern extension, the WeBS core count data for the most recent five years (2010/11-2014/15) and the winter 2015/16 NEWS survey data from sectors located along the Northumberland coast have again been re-categorised into the following area groups:

Sectors located within the suggested larger amended site with northern extension (i.e. those located within the Coquet to St Mary's MCZ boundary and those located to within the northern extension 'Coquet to Berwick');

- Sectors located the south of Coquet to St Mary's MCZ; and,
- Sectors covering the estuaries that are not included within the Coquet to St Mary's MCZ boundary, i.e. located to the west of the boundary (Coquet Estuary and Blyth Estuary). Although Coquet Estuary and Blyth Estuary were not included in the original Coquet to St. Mary's MCZ they have been included in the assessment as recent evidence and reports suggest these estuaries provide important habitats for non-breeding eiders and eider ducklings.

Both the WeBS core count data (five year means 2010/11-2014/15) and the winter 2015/16 NEWS data show the number of common eider in the non-breeding season recorded at the sites located to the south of the suggested larger amended site with northern extension are lower than within the site, indicating that the areas to the south of the site are of lower importance to common eiders in the north-east of England in the non-breeding season. These data also show that significant numbers of non-breeding common eider are recorded within the suggested larger amended site with northern extension (see Table 10 and Figure 9).

Common eider total five year (2010/11-2014/15) mean peak count from WeBS core counts for within the suggested larger amended site with northern extension is 3,146 birds. If the estimated figure for the English wintering population of eider of around 12,000 individuals (*pers. comm.* Andy Musgrove) used by RSPB in their proposal for this site is used, then this figure represents 26.22% of this non-breeding population. This figure for the suggested larger amended site with northern extension also represents 5.72% of the GB non-breeding population of common eider (excluding Shetland) of 55,000 individuals (Musgrove *et al.* 2013).

Common eider total peak winter 2015/16 count from NEWS for within the suggested larger amended site with northern extension is 499 birds, which represents 4.16% and 0.91% of the English non-breeding and GB non-breeding populations of common eider respectively.

The above indicates the importance of the suggested larger amended site with northern extension to non-breeding common eider in the north-east of England and at an English scale and even GB scale.

Figures 4 and 5 show the WeBS and NEWS data per sector and these confirm the distribution along the coast within the suggested larger amended site with northern extension, as well as the reduction in numbers to the south of the site. The northern boundary extension 'Coquet to Berwick' has been drawn

using the recent WeBS and NEWS data and follows a similar boundary as the proposed marine Northumberland Marine pSPA, which has been submitted to Defra to protect the marine waters for foraging seabirds.

Ecological requirements, relevant for both seasons (breeding, non-breeding)

As noted in section 4.1.2, information has been gathered on common eider diving depths and is summarised in Table 6. The information suggests that whilst common eiders are capable of diving to depths of 30 m or more, the majority of dives occur in shallower waters. Figure 6, indicates that as with the Coquet to St Mary's MCZ, the whole of the northern extension 'Coquet to Berwick' covers an area of shallow water of 30 m or less in depth, meaning that the whole of the suggested larger amended site covers shallow waters of 30 m or less in depth. This would suggest that it would be unlikely that significant numbers of common eider would occur further out to sea than the area covered by the at sea extent of the suggested larger amended site with northern extension.

Principle 3 Site size and delineation: Conclusion

The additional breeding colony data and the WeBS core count and winter 2015/16 NEWS count data, information on duckling feeding areas, and bathymetry, taken together provide a consistent evidence base for the presence of the feature within both the Coquet to St Mary's site (as proposed by RSPB) and the suggested amended larger site with northern extension ('Coquet to Berwick') at higher densities than the waters to the south of the sites. The bathymetry maps suggest that it is unlikely that higher densities of common eider would be found further out to sea than the seaward extent of the boundaries for either the Coquet to St Mary's MCZ site or the suggested larger amended site with northern extension ('Coquet to Berwick').

However, whilst the additional data suggest evidence that the Coquet to St Mary's MCZ as proposed by RSPB supports nationally (England) important numbers of non-breeding common eider (>1% of estimated English non-breeding population) and Coquet Island supports nationally important numbers of breeding common eider, there is a degree of uncertainty due to the numbers of common eider present to the north of the site both in the breeding and non-breeding seasons and hence uncertainty of the suitability of the northern boundary of the site. Taken together this suggests that size and delineation of the Coquet to St Mary's MCZ as proposed by RSPB does not encompass the full extent of the area of importance to breeding and non-breeding common eider on the Northumberland coast and suggests that the score for this principle can be re-assessed as **MODERATE** for the Coquet to St Mary's MCZ site as proposed by RSPB.

The same evidence sources have been used for the suggested larger amended site with northern extension ('Coquet to Berwick'). In the case of this site, the additional data presented confirm both breeding and non-breeding common eider are present within this suggested larger site at higher densities than the surrounding waters to the south and out to sea for this site. Taken together this provides confidence that the size and delineation of the suggested larger amended site with northern extension is appropriate in terms of its northern, southern and at sea boundaries. Based on this, the score for this principle has been assessed as **HIGH** for the suggested larger amended site with northern extension ('Coquet to Berwick').

In addition, the evidence suggests that the Coquet estuary which lies outside the existing MCZ (and of the suggested larger site with northern amendment) and only parts of this estuary fall with the various SSSIs, including the north bank of the outer estuary which appears well used by common eider. There might be merit in considering an MCZ extension into the Coquet Estuary as part of any revised proposal.

6.7.2.4 Appropriateness of Management

Table 99 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score	Potential score	Updated score (taking into account further evidence review, Feb 2017)
Common eider	**Not met**	**Moderate**	Coquet to St Mary's MCZ (as proposed by RSPB): **Moderate** Additional advice was obtained from local NIFCA, colony managers and the AONB which suggested fishing activity with regard to bycatch is not a management concern within the site. Recreational actives such as powerboating, sailing and kayaking occur within the MCZ and pose a threat to eider adults and ducklings through visual disturbance, above water noise and collision. These activities are a particular concern around Amble Marina which is located within close proximity to the main breeding site at Coquet Island. Suggested larger amended site with northern extension ('Coquet to Berwick'): **Moderate** Additional evidence indicates there is a wide range of different recreational activities concentrated around tourist 'hotspots' eg Farne Islands and Lindisfarne. Unregulated jet skis are known to occur throughout the site which is a cause for concern with regard to disturbance, collision and potential mortality of eider ducklings. Management is required to ensure recreational activities are managed throughout the site. Additional activities have been identified as a having a potential threat on the eider population and their supporting habitat, these are the oyster aquaculture operation and the construction/maintenance of harbour and port structures within 'Coquet to Berwick'. These activities may result in visual disturbance and loss of feeding and creching habitat.

Justification

Original assessment (Coquet to St Mary's)

There was good generic evidence in the third party proposal on disturbance issues in relation to common eider. However, no site-specific pressures information was given and there was no account of the activities which take place within the proposed site that might pose a risk to the well-being of the eider population. This lack of information meant that this principle was **NOT MET**.

Additional evidence gathered and revised assessment (summary of evidence for Coquet to St. Mary's and 'Coquet to Berwick')

Additional evidence has been gathered for the area of the Coquet to St Mary's MCZ as proposed (see section 4.4.1) and the suggested larger site 'Coquet to Berwick' (see section 4.4.2), to identify activities and pressures which may potentially have an adverse impact on breeding and wintering (non-breeding) common eider, and any existing management measures in place to address these impacts. This evidence has been obtained from:

- The local IFCA
- Colony managers, for breeding colony counts for common eider breeding colonies located along the Northumberland coast.
- NGOs, competent authorities.
- Stakeholders

Assessment against Principle 4 Appropriateness of Management for option (a): proposed Coquet to St Mary's MCZ

SSSI Condition

Coquet Island SSSI is located with Coquet to St. Mary's MCZ. The latest condition assessment (2016) assessed the site as 'Unfavourable Condition' due to the decline in breeding eider population. The cause for breeding eiders not meeting 'Favourable' condition status is not known however it is thought climate change may be a contributing factor and the eider population is moving further north to colder climates. Another factor for declining condition could be a result of the rank vegetation cover on Coquet Island which may not be providing a suitable nesting habitat. As the reason for declining condition is not clear it is important additional (anthropogenic) pressures in the marine environment are managed accordingly.

Fishing

The RSPB had identified bycatch from fishing as a potential activity having an adverse impact on the population of breeding and non-breeding common eiders. The fishing activity within the current MCZ boundary is monitored and managed by the Northumberland Inshore Fisheries & Conservation Authority. Under Article 6 there is a byelaw in place which prohibits the use of fish traps and trawling throughout the entire Berwickshire North and Northumberland Coast SAC. The main fishing activity within the MCZ is potting (lobster and crab), however, the NIFCA have confirmed there have been no reports of seabird bycatch with regard to this fishing activity.

Recreation

There are a number of recreational activities which occur within the current MCZ such as powerboating, sailing, jet skis and shore-based activities including fishing and dog walking; and therefore the associated disturbance to protected species is a concern. Many of these activities are limited to specific areas of the coastline and are not widespread throughout the site, for example, power boating and jet skiing occurs offshore at Amble due to the boat facility being located within Amble Marina. These activities also vary throughout the year with the bulk of the activities occurring throughout the summer months.

Coquet to St. Mary's MCZ is located within a multi-designated site where breeding and non-breeding birds are protected (ie Coquet Island SSSI), and therefore there are a number of existing Codes of Conduct (CoC) in place for the Northumberland coast. A voluntary CoC has been developed in partnership between the Berwickshire and North Northumberland European Marine Site Management Group (BNCC) and Natural England to cover recreational activities within the Northumberland coast. The AONB and the Northumberland County Council has also produced CoC's with regards to coasteering, dog walking and boating within the Northumberland coast. There may be a requirement to amend the existing CoC to cover all recreational activities which may cause disturbance to breeding and non-breeding eiders in order to help achieve a 'Favourable condition' Conservation Objective.

Natural England continues to support disturbance monitoring with regards to recreational impacts and to work with partners (such as Newcastle University) to help commission disturbance research projects.

Existing management of Coquet to St. Mary's MCZ

The Berwickshire and Northumberland Coast Marine Nature Partnership (formerly the Berwickshire and North Northumberland Coast European Marine Site Partnership) has agreed to encompass the new SPA under its management scheme remit should it be designated. Much of the listed work aligns very closely with the work of the partnership. The partnership and its dedicated project officer will gladly support the delivery of these tasks. The project officer already plans to develop management measures with partners and report on management actions, and coordinate the various monitoring effort across various partners such as Natural England, National Trust and RSPB. The officer can also help to develop a code of conduct based on disturbance findings.

Assessment for Principle 4 Appropriateness of Management for option (b): Suggested larger amended site with northern extension ('Coquet to Berwick')

Aquaculture

There is a large oyster operation located within Fenham Flat at Lindisfarne. This operation has been consented by Natural England, however, the operation is located directly on a large mussel bed and therefore the impacts to the feeding habitat of breeding and non-breeding eiders are unknown. Natural England has also developed a 'Bird Disturbance Monitoring' programme with the land owner to determine whether the activity is having an adverse impact on Lindisfarne SSSI/SPA bird species.

Port Development - Maintenance and Construction

There are future proposals for maintenance and restoration of pier and harbour structures within both the MCZ and suggested extension, though these tend to be fairly restricted in scale and carried out over a small time scale. The impacts on breeding and non-breeding eiders are therefore not thought to have an adverse effect on the population.

Recreation

There are a number of locations within the extended site where recreational activities occur. Seahouses harbour located inland from the Farne Islands is popular with tourists with regard to boat tours around the Farne Islands, as well as diving and sailing. These activities are managed under the current Code of Conduct. Unregulated jet skis are known to operate within Beadnell Harbour and around Holy Island (Lindisfarne) causing disturbance impacts and a potential risk of above water collision with seabirds including eiders. If the suggested extended area was included in the MCZ boundary it is thought that the current CoC's would be amended and extended to cover the entire MCZ boundary.

Principle 4 Appropriateness of Management - Conclusion

The evidence submitted by the RSPB on the current Coquet to St. Mary's MCZ provided generic data on recreational issues and fishing activities, however, no site-specific pressures or information was given and therefore there was a degree of uncertainty.

The additional evidence obtained on the activities which occur through the MCZ and suggested larger site 'Coquet to Berwick' has identified a range of recreational activities which have the potential to cause visual disturbance, collision and mortality in eider adults and ducklings in both sites. Amble Marina/Coquet estuary has been identified as an important creching site for eider ducklings, and the activity centre located at the marina (kayaking and powerboats) is a cause for concern with regard to potential disturbance and collision incidents with eider ducklings. Unregulated jet skis are known to operate throughout the site. There are a number of existing Codes of Conduct in place addressing different activities for the current MCZ boundary. However, there needs to be an 'overarching' Code of Conduct to address all recreational activities within MPA sites, especially with regard to impacts breeding eider around Amble Marina. This management approach should help achieve Favourable condition for the feature and enable the Conservation Objectives to be met. The score for this principle can therefore

be re-assessed as **MODERATE** for the Coquet to St. Mary's MCZ as proposed by the RSPB.

The same evidence sources have been used for the suggested larger amended site with northern extension ('Coquet to Berwick'). In the case of this site, additional activities have been identified as having a potential threat to breeding and non-breeding common eiders. The suggested larger site includes additional areas which are popular with tourists, especially during the summer months; these are Farne Islands, Beadnell Bay, Seahouses Harbour and Lindisfarne. A range of additional recreational activities occur at these locations such as diving, kayaking and boat tours around Farne Islands and Lindisfarne. Unregulated jet ski activity occurs throughout the site which can cause visual disturbance, displacement and potential mortality in eider ducklings. Appropriate management is required to address all the recreational activities throughout the extended site. As mentioned above, an appropriate Code of Conduct would be required to cover all the recreational activities which take place throughout the suggested extended site.

Additional activities were identified in the suggested wider site; such as construction in ports and harbours at Seahouses Harbour and Blyth estuary. There is also an oyster aquaculture operation located at Lindisfarne. However, the impacts of these activities on breeding and non-breeding common eiders are not known and would require further investigation. Based on this, the score for this principle has been assessed as **MODERATE** for the suggested larger amended site with a northern extension ('Coquet to Berwick').

In addition there may be merit in including the Coquet estuary in the extended site to address impacts from recreation activities in Amble Marina.

The evidence held by, or available to, Natural England on activities (pressures and sensitivities) and management is considered to: i) constitute a comprehensive account of the range of activities which take place within the proposed MCZ, or have an influence within it, that may have an adverse impact on the status of the species proposed for designation, ii) demonstrate some of the levels at which some of the activities occur, iii) describe any existing management measures in place within the MCZ, iv) show that there are ongoing activities in the area, or other identified threats which are likely to give rise to pressures to which the species may be highly or moderately sensitive, and may have the potential to impact the conservation status of the species at the population or sub-population level, v) consider if existing wider measures may not be sufficient to address any threats posed to the species within the third-party proposed MCZ boundary. In addition, possible management options (appropriate for providing MCZ protection) have been identified that may reduce the effect of current or future damaging activities on the third-party proposed species.

All of this is re-considered to merit a score of **MODERATE** in regard to Principle 4 Appropriateness of Management.General Management Approach

Table 100 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Main issue(s) in relation to this GMA
Common eider	Recover to favourable condition	Recreation

Justification

The assessment of a General Management Approach has concluded a 'Recover to favourable condition' status for common eider (breeding and non-breeding) for both the proposed (and existing) Coquet to St. Mary's MCZ and suggested northern extension 'Coquet to Berwick'.

A 'Recover' assessment has been concluded based on the current SSSI condition assessment for

breeding common eider on Coquet Island SSSI, which achieves an assessment of 'Unfavourable Recovering' condition, due to a population decline over the last five years. The following activities have been identified as potentially having a negative impact on the breeding and non-breeding population of common eider and therefore appropriate management would be required to ensure the conservation objectives are met.

6.7.2.5 Proposed GMA for option (a): proposed Coquet to St. Mary's MCZ

Recreation

A 'Recover' status was assessed for 'visual disturbance' and 'above water noise' for Recreation due to pressure interacting with the features and resulting in a 'High vulnerability'. Although there are existing Code of Conducts in place within the MCZ to help manage the disturbance impacts from recreational activities, unregulated activities such as jet ski's has been identified as causing visual disturbance and have the potential to result in collision and mortality. This activity is likely to increase in the summer months and would need to be managed around the sensitive breeding sites at the Farne Islands and Coquet Island and important creching sites.

Activities that may require further investigation

Although climate change may be a contributing factor to the decline in breeding Eiders along the Northumberland coast there are a number of potential activities identified as potential having an adverse impact on the eider population in the future and may need further investigation to assess if they are contributing to declining condition. These are:

- Aquaculture

There has been a proposal in the past (2012) to operate a large mussel farm (on ropes) within Coquet Estuary. This planning proposal has not (to date) developed further. Coquet estuary has been identified as holding large numbers of eider ducklings and therefore this operation could potentially affect the feeding habitat of eider ducklings and eider adults.

- Maintenance within ports and harbours

There are a number of ports and harbours located within the current MCZ where ongoing maintenance of harbour structures occurs. The relative risk from any associated pressures would depend on the time of year, location, proximity of the activity to the feature (in space and time). This activity at current levels does not appear to be having a negative impact on breeding and non-breeding common eiders, but assessments would need to be made to confirm this.

6.7.2.6 Proposed GMA for option (b): Suggested larger amended site with northern extension ('Coquet to Berwick')

A 'Recover' assessment has also been concluded for the suggested extended northern boundary with 'Recreation' being the main activity which is potentially having a negative impact on the breeding and non-breeding common eider population.

Recreation

The northern extension includes Seahouses, Farne Islands, Beadnell and Lindisfarne which are regarded as 'hotspots' for recreational activity such as power boats, jet skis and diving and vessel movements around the Farne Islands. Although there are existing Code of Conducts in place to cover these activities, the Code of Conduct may need amending to ensure it covers the entire site and impacts to common eider are considered.

Activities that may require further investigation

The activities identified below are possibly having an adverse impact on the eider population and may need investigating further to assess if they are contributing to declining condition.

- Aquaculture

There is an oyster operation location on Fenham Flats (Lindisfarne) which is located directly on a large mussel bed. This activity has been consented by Natural England, however, the potential disturbance and impact to the feeding habitat of common eiders is not known and may have to be investigated further.

- Maintenance and construction within ports and harbours

There are a number of ports and harbours located within the suggested northern extension where ongoing maintenance of harbour structures occurs. Seahouses Harbour and Blyth Estuary both have proposals to develop harbour and docks in the future. The risk of this pressure would depend on time of year, location, proximity of the activity to the feature (in space and time). This activity at current levels does not appear to be having a negative impact on breeding and non-breeding common eiders, but assessments would need to be made to confirm this.

Consideration of supporting habitats

The GMA advice given in this document is derived from analysis of potential direct impacts on the species proposed for protection. Were the site to be designated however, there may need to be further consideration given to ensuring that the key supporting habitats for the species are maintained in a suitable state to support the feature in question. Table 14 lists all of the marine habitats listed in Natural England's marine evidence geodatabase as being present in the third-party proposed MCZ and which are considered to potentially be important for supporting the proposed species. If the site were designated, Natural England would provide conservation advice on the contribution and status of key supporting habitats within the site.

Table 101 List of benthic habitat sub-features which are potential supporting habitats for common eider and are recorded as being present within the boundaries of the proposed MCZ within Natural England's marine evidence geodatabase.

Supporting habitats	**Code**
Circalittoral rock	A4
Infralittoral rock	A3
Intertidal coarse sediment	A2.1
Intertidal mixed sediments	A2.4
Intertidal mud	A2.3
Intertidal rock	A1
Intertidal sand and muddy sand	A2.2
NB: Aggregated in GI - Coastal sand dunes	*Coastal sand dunes*
NB: Aggregated in GI - Saltmarsh	*A2.5*
Submerged or partially submerged sea caves	H8330
Subtidal coarse sediment	A5.1

Subtidal mixed sediments	A5.4
Subtidal mud	A5.3
Subtidal sand	A5.2

6.8 Hartland to Tintagel third-party proposed highly mobile species MCZ

Contents

Background

Hartland Point to Tintagel was designated as an MCZ in January 2016. The addition of a new feature (common guillemot) is proposed by the RSPB along with a change to parts of the seaward boundary to accommodate a generic one kilometre seaward extension "buffer" around two existing coastal SSSIs in which the feature breeds. The SSSI citations for Tintagel cliffs SSSI and Boscastle to Widemouth SSSI both make reference to common guillemot breeding in the site. The conservation aim of this third-party proposal in the case of common guillemot would be to provide a 'generic maintenance extension' to the colony protected on land through the Tintagel Cliffs SSSI, and also to the common guillemots that nest within the neighbouring Boscastle to Widemouth SSSI, so that the same populations would also receive protection through the MCZ from direct impacts whilst at sea engaged in 'active' maintenance behaviours close to their colony.

Generic maintenance extensions have been put in place to protect breeding common guillemots (and other species) at the two largest common guillemot colonies in England in which numbers of the species merit their status as a feature of a Special Protection Area. Application of the same approach at this site within an MCZ, in conjunction with third-party proposals to do the same at four other common guillemot colonies in England, would see the same approach applied to all five of the next most important breeding common guillemot colonies in England. This would make a significant contribution to delivery of a representative and replicated suite of sites that would afford protection to this species at sea in the breeding season in England. This third-party proposal meets the JNCC guidance on seaward extensions to seabird colonies supporting auks (McSorley *et al.* 2003).

6.8.1 Assessment against selection criteria

6.8.1.1 Ecological significance

Table 102 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	Low (in terms of site specific evidence). Moderate (in terms of generic evidence)	Moderate (based on marked increase in the size and significance of this colony in the last 2 decades and application of generic evidence re ecological significance of	**High** Seabird 2000 census data indicates that Tintagel Cliffs was the 10th most important Common guillemot colony in England at that time. More recent count data from the Tintagel colony (plus data from Boscastle) in comparison with more recent count data

		maintenance extensions to birds at a given colony)	from other English colonies (where available) show that this colony has increased in importance and is now the 7th (or 6th if Flamborough and Filey considered as one) most important site in England. Work by JNCC has clearly demonstrated the persistent use by breeding auks of waters within one kilometre of their colonies for conducting critical "active maintenance behaviour" and that this is a consistent pattern across colonies.

Justification

Common guillemot

Original assessment

This third-party proposal was to form a one kilometre 'generic maintenance extension' extending offshore around two existing coastal SSSIs in which the feature nests, in order to afford site-based protection within the sea area considered most likely to support the maintenance activities of the feature.

The Tintagel Cliffs colony is an important site (it is a SSSI) and has been for some time. However, the SSSI citation makes no mention of common guillemot and no historical information regarding this species at this colony was given in the third-party proposal. No information was provided in regard of the colony at Boscastle to Widemouth SSSI which also influences the proposed boundary changes to the MCZ. There was some limited site-specific distribution data from 2 years but that was an insufficient basis on which to determine the ecological significance of the area proposed and its full extent (hence the score of **LOW**).

The argument in favour of the ecological significance of this area was based on expert judgement which has seen 'generic maintenance extensions' of this type applied to many SPA seabird colonies around the UK, as a matter of best practice. That approach has an empirical evidence base, based on research conducted by JNCC and published in various JNCC reports and referenced in the third-party proposal. This can be considered a high quality data source (albeit not site-specific) in regard to the ecological significance of maintenance extensions for the birds at a given colony. When considering ecological significance in a wider context, the relative importance of the numbers of birds at the colony must be considered. Comparison of recent abundance data with other sites (Table 1) shows the breeding colonies at Tintagel Cliffs and Boscastle to Widmouth SSSIs to be the 7th and 16th most important in England for common guillemot respectively. The site is the 4th most important for common guillemot within the Regional MCZ Project Area.

The increase in population size during the last 15 years (488%) and the rise in the rank of the colony in terms of national importance suggested a revised potential score of **MODERATE**.

Additional evidence gathered and revised assessment

A review of seabird colony count data (see Annex 6 in the Advice Overview document) reveals that based on the national Seabird 2000 census data, the number of common guillemots at the Tintagel Cliffs SSSI colony at that time (326 individuals) made this site the 10th largest common guillemot colony in England, or 8th largest site not afforded protection as an SPA in England. Since Seabird 2000, numbers of common

guillemot have increased at Tintagel Cliffs SSSI (latest count in 2015 being 1,903) but have also increased at many other sites. Based on more recent count data at colonies, where these are available, Tintagel Cliffs SSSI now holds the 7th largest common guillemot colony in England (or 6th largest considering that colonies at Filey are now incorporated into the larger Flamborough & Filey Coast pSPA) (see Annex 6 in the Advice Overview document).

A review of seabird colony count data (see Annex 6 in the Advice Overview document) reveals that based on the national Seabird 2000 census data, the number of common guillemots at the Boscastle to Widemouth SSSI colony at that time (75 individuals) made this site the 17th largest common guillemot colony in England, or 15th largest site not afforded protection as an SPA in England. Since Seabird 2000, numbers of common guillemot have increased at Boscastle to Widemouth Bay SSSI (latest count in 2013 being 100) but have also increased at many other sites. Based on more recent count data at colonies, where these are available, Boscastle to Widemouth SSSI now holds the 16th largest common guillemot colony in England (or 14th largest considering that colonies at Filey are now incorporated into the larger Flamborough & Filey Coast pSPA) (Annex 6 in the Advice Overview document).

Combining the most recent counts of common guillemot from the two SSSIs to which this MCZ third-party proposal is linked yields a total of 2,003 – the 7th largest breeding aggregation of this species in England. This latest population estimate signifies an increase of more than 400% in the combined size of these colonies since the time of Seabird 2000.

Maintenance extensions have been proposed within the Flamborough and Filey Coast pSPA and for the Farne Islands colony within the surrounding Northumberland Marine pSPA. Thus, the ecological significance of providing protection to breeding common guillemots by way of generic maintenance extensions has been acknowledged at the two largest common guillemot colonies in England. The third-party proposal to do so at the Tintagel Cliffs and Boscastle to Widemouth SSSIs within the Hartland Point to Tintagel MCZ would similarly be of considerable ecological significance to the birds at these colonies, and of wider ecological significance to the species in England given that, aside from the SPAs already afforded protection in this way, together these colonies make up the 4th largest aggregation of breeding common guillemots in England.

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 in the Advice Overview document. In summary, McSorley *et al.* (2003) present the results of analyses of repeated boat-based transect surveys conducted in 2001 around six seabird colonies. During these surveys the locations of approximately 17,000 common guillemots and 1,400 razorbills engaged in active maintenance behaviours were mapped. The density of these birds was analysed as a function of increasing distance from the colonies and revealed a strikingly consistent pattern of elevated densities within one kilometre of each colony in comparison to much reduced densities beyond that distance (McSorley *et al.* 2003, and see Annex 5 in the Advice Overview document). This evidence presented by McSorley *et al.* (2003) is considered to: i) constitute a significant body of reliable, empirically-based evidence supporting the conclusion that these areas of water have clear ecological significance to the life-histories of the species for designation, ii) provide evidence that is based on at least one high quality source of data and iii) make a convincing case that for auks, these waters make a significant contribution to the life cycle of the species due to their role in providing supporting habitats or processes.

Thus, it is considered that the provision of protection of waters within a one kilometre buffer area around the common guillemot colonies at Tintagel Cliffs and Boscastle to Widemouth SSSIs via the Hartland Point to Tintagel MCZ will make a contribution to both the representivity and replication of sites within the MPA network. This reflects both the size and growth of the combined colonies in an English context, and their position in the south-west of England. They are, on one hand, far from the only two English colonies where such measures are nearer to being implemented (Flamborough and Filey Coast pSPA and Northumberland Marine pSPA), but on the other hand are near several other common guillemot colonies

in south-west England where such MCZ third-party proposals are being considered. All of this is re-considered to merit a score of **HIGH** in regard to Principle 1 Ecological Significance.

6.8.1.2 Persistence

Table 103 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	Low (site specific), High (generic)	High	**High** A review of historical data confirmed the persistence of the presence of common guillemot at the main source colony (Tintagel Cliffs) since at least the 1960s with a general increasing trend in numbers through the 1980s and 1990s. Seabird 2000 census data indicates that this colony was the 10th most important common guillemot colony in England at that time. More recent count data from the Tintagel colony (plus data from Boscastle) in comparison with more recent count data from other English colonies (where available) show that this colony has increased in importance and is now the 7th (or 6th if Flamborough and Filey are considered as one) most important site in England. Work by JNCC has clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.

Justification

Common guillemot

Original assessment

The only site specific information provided in terms of the persistent presence of numbers of birds likely to be supported was that the Tintagel Cliffs SSSI was designated in 1988 with various seabird species including razorbill and puffin; however the SSSI citation makes no specific mention of common guillemot. Boscastle to Widemouth SSSI was notified in 1990 and the citation states that common guillemot were breeding regularly within the site. Additional information was provided that at Tintagel SSSI in 2015 there were 1816 common guillemot (and this has increased markedly since 2000). There was one map of at-sea sightings in 2011 and 2012. However, these were from two years only, and omit part of the proposed

area. Furthermore no map data and no colony data were given for Boscastle to Widemouth SSSI which determines half of the proposed additional area. Hence on the basis of site-specific information, the score regarding persistent occurrence of high densities was **LOW.**

In regard of the Tintagel Cliffs SSSI colony Natural England is aware of additional information demonstrating the persistence and recent growth of the population of guillemots at this colony (see other comments below). This enhanced the site-specific information in respect of this colony size but not that of the Boscastle to Widemouth SSSI or of the persistent use of the sea area proposed. So the score remained unchanged.

However, if one considers that the principle of maintenance extensions applies to SSSIs as it has been applied to SPAs, then one might consider the confidence in that generic evidence base to be **HIGH** because that analysis of empirical data indicated that sea areas within one kilometre of seabird colonies will in general support persistently relatively high levels of usage by auks for conducting maintenance behaviours. This can be considered one high quality data source (albeit not site-specific).

Additional evidence gathered and revised assessment

A compilation of all historical seabird count data has confirmed the long term persistent presence of common guillemot at the Tintagel Cliffs SSSI (Table 3).

Table 104 Summary of counts of common guillemot at the Tintagel Cliffs colony from 1960s to present day

Year	Count (individuals)	Source
1962	"hundreds"	Cornwall Bird report (cited in English Seabird Monitoring Project South West 2006-2009)
1967	184	Survey after Torrey Canyon disaster
1969-1970	205	Operation Seafarer – national seabird census
1981	120	Cornwall Bird report (1981) (cited in English Seabird Monitoring Project South West 2006-2009)
1985	170	Cornwall Bird Watching and Preservation Society
1989	117	Cornwall Bird Watching and Preservation Society
1990	179	Cornwall Bird report (1990) (cited in English Seabird Monitoring Project South West 2006-2009)
1991	82	Cornwall Bird Watching and Preservation Society
1992	180	Cornwall Bird Watching and Preservation Society
1999	309	Cornwall Bird Watching and Preservation Society
2009	1,015	Cornwall Bird Watching and Preservation Society
2013	223	Cornwall Bird Watching and Preservation Society
2015	1,903	Cornwall Bird Watching and Preservation Society

Clearly, this colony has supported significant numbers of breeding common guillemot over (at least) the last five to six decades and appears to support an exponential increase in numbers during the last decade. The sum of the four most recent counts at this site exceed the sum of all those in previous years.

In comparison with the colony at Tintagel Cliffs, there is less information regarding the numbers of common guillemot at the Boscastle to Widemouth SSSI. However, a compilation of historical seabird count data has confirmed the long term persistent presence of common guillemot at this colony too (Table 4).

Table 105 Summary of counts of Common guillemot at the Boscastle to Widemouth colony from 1980s to present day

Year	Count (individuals)	Source
1990	"present"	SSSI citation
2000	75	Seabird Monitoring Programme
2013	100	Cornwall Bird Watching and Preservation Society

Clearly, this colony has also supported the persistent presence of breeding common guillemot over several decades.

At the date of the last national seabird census (Seabird 2000), the total number of common guillemot across both Tintagel Cliffs and Boscastle to Widemouth was 401, sufficient to constitute the 9th largest aggregation in England. Nearly two decades later, the total number across both colonies has increased to 2,003, meaning that this stretch of the Cornish coast now supports the 7th largest aggregation of this species in England.

It is considered that these count data constitute a significant body of reliable, empirically-based evidence to support the conclusion that the area supports the persistent presence at higher densities of the species proposed as a protected feature of an MCZ than the surrounding waters in the wider context of much of the remainder of the south-west of England and indeed the rest of England (more local scale considerations are discussed below). The count data are derived from more than one high quality source of data. The underlying data are considered high quality including: SSSI citation figures, results of two national seabird censuses (Operation Seafarer and Seabird 2000), and other count data provided by the Cornwall Bird Watching and Preservation Society. The data have been collected over an adequate period of time, and will have been appropriately collected and yield outputs that have low levels of uncertainty regarding the persistent presence of significant numbers of the feature on this stretch of coastline.

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 in the Advice Overview document. As noted above, this study provides the empirical survey data and analysis demonstrating the consistent within-species and across-colonies occurrence of persistently higher densities of auks engaged in active maintenance behaviour in waters within one kilometre of their breeding colony than further offshore. This evidence presented by McSorley *et al.* (2003) is considered to: i) constitute a significant body of reliable, empirically-based evidence to support the conclusion that the area of sea within one kilometre of a guillemot colony is likely to have persistent presence at higher densities of the species than the surrounding waters and ii) provide one high quality source of data with large and representative sample sizes, collected over an adequate period of time and analysed according to best practice that yields outputs that have low levels of uncertainty.

Thus, this information, together with the fixed location of what is, across the two SSSIs, the 7th largest aggregation of breeding common guillemot in England, provides a compelling case for the persistent presence at higher densities of common guillemots during the breeding season within the proposed one kilometre buffer around the Tintagel Cliffs and Boscastle to Widemouth SSSIs (to be included within the Hartland Point to Tintagel MCZ) than in other waters in the immediate vicinity, regionally across south-west England, and indeed in comparison to waters around most of the rest of England. This suggests that the score for this principle can be re-assessed as **HIGH.**

6.8.1.3 Site Size and delineation

Table 106 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot (*Uria aalge*)	Low (site specific). High (generic) (though Ecological Network Guidance (ENG) principles re boundary setting not applied)	High	**High** Work by JNCC has clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.

Justification

Common guillemot

Original assessment

The third-party proposal was for a one kilometre buffer applied for common guillemot colonies within two SSSIs. Tintagel cliffs SSSI protects common guillemot under the notified feature 'Assemblage of breeding birds'. The citation for Boscastle to Widemouth SSSI highlights presence of breeding individuals within the site. This would extend the existing MCZ further offshore in two sections. The map provided of sightings was no basis to delineate a boundary on its own: few sightings; two years only and only partial coverage of the area proposed. Furthermore, the boundary as proposed, while following a one kilometre limit off the coast, did not follow ENG principles in using straight lines to do so. This means the score was, at best, **LOW**.

However, the proposed boundary did follow the recommendations of reports published by JNCC regarding the extent of generic maintenance extensions for auks, i.e. one kilometre; and referred to in the third-party proposal. This can be considered one high quality data source (albeit not site-specific), such that one might score this as **HIGH** (noting that the boundary does need tweaking to use straight lines rather than curves).

Additional evidence gathered and revised assessment

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 in the Advice Overview document. As described above, this study provides the empirical survey data and analysis demonstrating the consistent within species and across colonies occurrence of persistently higher densities of auks engaged in active maintenance behaviour in waters within one kilometre of their breeding colony than further offshore. This evidence presented by McSorley *et al*. (2003) is considered to: i) constitute a strong evidence base to demonstrate that the size and shape of the area included within the proposed MCZ boundary is appropriate to that required to ensure the viability of the site; ii) provide a significant body of reliable, recent, empirically-based evidence on which to determine the location of the proposed MCZ boundary, iii) be based on underlying data that are considered to have good quality with large and representative sample sizes, appropriately collected and analysed according to best practice and to yield boundaries that have low levels of uncertainty in their construction.

It is proposed that the seaward boundary to the one kilometre buffer presented in RSPB's proposal

should be amended slightly in one respect. It is proposed here to define the parts of the amended boundary that lie outside the existing MCZ boundary by a series of straight lines between nodes rather than a series of arcs as illustrated in the RSPB's proposal. This amendment brings the setting of the seaward boundary more in line with the guidelines regarding boundary setting for highly mobile species MCZs outlined in JNCC and Natural England (2016) and also with the recommendations set out in McSorley *et al.* (2003).

In the light of the above, the score for this principle can be re-assessed as **HIGH.**

6.8.1.4 Appropriateness of Management

Table 107 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot (*Uria aalge*)	Not met	Moderate	**Moderate** Evidence for appropriateness of management has been gathered using Natural England's Site Activity Inventory, GIS database and Vulnerability Assessment. Activities are listed for which the species is moderately to highly sensitive, and may have the potential to impact the conservation status of the species. Site specific management has been considered however there is currently no site specific management in place.

Justification

Common guillemot

Original assessment

The third-party proposal stated that there are no specific threats to common guillemot in the area and merely stated that bycatch and recreation need monitoring and that an MPA designation would allow any threats to be managed as appropriate. No credible evidence was presented that shows there are ongoing activities (or not). This principle was scored as **NOT MET**.

Natural England's GIS database, Site Activity Inventory and Vulnerability Assessment indicated that several activities are known to occur within the area proposed that could impact the features (see below). Documentation regarding the existing MCZ was considered as potentially providing additional valuable information regarding activities in the area. Further consideration of this information suggested that a re-assessment of the score for this principle from **NOT MET** to **MODERATE** (as a potential score) may be appropriate.

Additional evidence gathered and revised assessment

Further evidence has been provided which demonstrates ongoing activities within or adjacent to the proposed boundary that have the potential to impact the proposed species. The following activities generate pressures to which the species is highly or moderately sensitive, and may have the potential to impact the conservation status of the species:

- FISHING: pelagic fishing or fishing activities which do not interact with the seabed (removal of non-target species)
- COMMERCIAL SHIPPING: vessel movements (visual disturbance; above water noise)
- RECREATION: powerboating or sailing with an engine (visual disturbance; above water noise)
- RECREATION: sailing without an engine (visual disturbance; above water noise)
- RECREATION: non-motorised watercraft (visual disturbance; above water noise)

Common guillemot are susceptible to bycatch and Natural England has GI Fishermap (Natural England 2012b) data suggesting that pelagic fishing does occur within/adjacent to some areas of the proposed boundary. There is currently no known site specific management of this fishing activity in place.

Common guillemot are susceptible to visual and noise disturbance generated by the movement of both commercial and recreational crafts including non-motorised water craft. These activities are known to occur throughout the site; however there is currently no management in place.

The evidence held by, or available to, Natural England on activities (pressures and sensitivities) and management is considered to: i) constitute a comprehensive account of the range of activities which take place within the proposed MCZ, or have an influence within it, that may have an adverse impact on the status of the species proposed for designation, ii) demonstrate some of the levels at which some of the activities occur, iii) describe any existing management measures in place within the MCZ, iv) show that there are ongoing activities in the area, or other identified threats which are likely to give rise to pressures to which the species may be highly or moderately sensitive, and may have the potential to impact the conservation status of the species at the population or sub-population level, v) consider if existing wider measures may not be sufficient to address any threats posed to the species within the third-party proposed MCZ boundary. In addition, possible management options (appropriate for providing MCZ protection) have been identified that may reduce the effect of current or future damaging activities on the third-party proposed species.

All of this is re-considered to merit a score of **MODERATE** in regard to Principle 4 Appropriateness of Management.

6.8.2 General Management Approach

Table 108 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Main issue(s) in relation to this GMA
Common guillemot	Maintain in favourable condition	Activities occurring within the site that generate pressures to which the feature is moderately to highly sensitive are deemed to be occurring at relatively low levels and/or require a marine licence and therefore are not likely to have a significant impact on the proposed feature.

Justification

Common guillemot

Following a full Vulnerability Assessment the proposed feature, common guillemot, has been given a GMA of 'Maintain in favourable condition'. The proposed site is a relatively quiet stretch of coastline and

the activities that generate pressures to which the species is highly or moderately sensitive are not currently considered to have a significant impact on the proposed feature.

Common guillemot are susceptible to bycatch and Natural England has GI Fishermap (Natural England 2012b) data suggesting that pelagic fishing does occur within/adjacent to some areas of the proposed boundary. However this is occurring at relatively low levels and not currently considered to significantly impact on the feature. Common guillemot are susceptible to visual and noise disturbance generated by the movement of both commercial and recreational crafts including non-motorised water craft. These activities are known to occur throughout the site, however at current levels, these activities are not considered to significantly impact on the feature.

A formal Condition Assessment has not been completed specifically for this species within Tintagel Cliffs SSSI or Boscastle to Widemouth SSSI. The individual count data of guillemot shows an increase in numbers within Tintagel Cliffs SSSI, from 184 individuals in 1967 to 1903 individuals in 2015 (see Table 3). Although there are few count surveys within the Boscastle to Widemouth SSSI area of the third-party proposal, the counts do show an increase from 75 individuals in 2000 to 100 individuals in 2013 (see Table 4). This increase in population size provides evidence that this species population is in favourable condition and supports the GMA of 'maintain in favourable condition' concluded from the Vulnerability Assessment.

The GMA advice given in this document is derived from analysis of potential direct impacts on the species proposed for protection. This third-party proposal was submitted with the aim of providing, if designated, protection within an MCZ of a limited sea area adjacent to SSSI colonies, in recognition of these areas being of greatest importance for birds engaging in critical active maintenance behaviours, rather than foraging *per se*. Therefore, the focus would be on protection of the population from direct impacts via e.g. disturbance, displacement and direct mortality, as opposed to any particular protection of supporting habitats.

6.9 Lundy third-party proposed highly mobile species MCZ

Contents

6.9.1 Background

This third-party proposal was submitted by RSPB with the aim of protecting Manx shearwater, Common guillemot and Razorbill. Lundy Island was notified as a SSSI in 1987 for reasons including: its important breeding populations of sea and coastal birds, its importance as a staging post for migrating birds, and its importance as a research area for fauna and flora (SSSI notification). Manx shearwater, puffin, guillemot, razorbill and kittiwake are features of the Lundy SSSI.

RSPB proposed a four kilometre 'generic maintenance extension' to protect three of the bird species (as listed above) that are notified within the Lundy Island SSSI. This generic maintenance extension aims to afford the birds protection outside of the existing SSSI.

6.9.2 Assessment against selection criteria

6.9.2.1 Ecological significance

Table 109 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score	Potential score	Updated score (taking into account further evidence review
Common guillemot	**Moderate**	**Moderate**	**High** (based on re-evaluation of relative numbers of birds breeding within Lundy SSSI in national context)
Razorbill	**High**	**High**	**High**
Manx Shearwater	**High**	**High**	**High**

Justification

Common guillemot

Original assessment

This third-party proposal was to form a four kilometre 'generic maintenance extension' extending offshore around the existing coastal SSSI in which the birds nest, in order to afford site-based protection within the sea area considered most likely to support maintenance activities of these species.

Evidence was provided that the SSSI is a nationally important site and regionally very important and has been for some time. The assessment of the ecological significance of the proposed MCZ, when considered in a national context, differed between each of the proposed features, in line with the relative importance of the numbers of each species nesting in the Lundy SSSI. Thus the scoring against the ecological significance principle was assessed as **MODERATE** for Common guillemot.

References were made to site specific and generic evidence regarding the ecological significance of sea areas adjacent to colonies for the proposed features of the site (for maintenance activities).There was FAME and STAR modelling data for guillemots 'at sea distribution' at site.

The data used for Common guillemot (FAME & STAR) indicated the importance of areas that, while being significantly larger than the area being proposed, do include it at their centre. This evidence suggesting the usage of these sea areas was moderated by the relative numbers of these species within the SSSI, which led to an assessment of the proposal for Common guillemot against the ecological significance principle of **MODERATE**.

The argument presented in the third-party proposal in favour of the ecological significance of this area was also based on expert judgement which has seen 'generic' maintenance extensions of this type applied to many SPA seabird colonies around the UK, as a matter of best practice. That approach has an empirical evidence base, based on research conducted by JNCC and published in various JNCC reports and referenced in the third-party proposal. This can be considered a high quality data source (albeit not site-specific) in regard of the ecological significance of maintenance extensions to the birds at a given colony. However, when considering ecological significance in a national context, the relative importance of the numbers of birds at the colony must be considered and that led to the assessments given here.

Additional evidence gathered and revised assessment

A review of seabird colony count data (see Annex 6 in the Project Overview document) reveals that, based on the national Seabird 2000 census data, the number of guillemots at the Lundy SSSI colony at that time (2,348 individuals) made this site the fourth largest guillemot colony in England, or second largest colony not afforded protection as an SPA in England. Since Seabird 2000, numbers of common guillemot have increased (4,114 individuals in 2013) in common with many other sites. Based on more recent count data at colonies, where these are available, Lundy SSSI remains the fourth largest colony in England.

Maintenance extensions have been proposed within the Flamborough & Filey Coast pSPA and for the Farne Islands colony within the surrounding Northumberland Marine pSPA. Thus, the ecological significance of providing protection to breeding guillemots by way of generic maintenance extensions has been acknowledged at the two largest guillemot colonies in England. The third-party proposal to do so at the Lundy SSSI within the Lundy MCZ would similarly be of considerable ecological significance to the birds at this colony, and of wider ecological significance to the species in England given that, aside from the SPAs already afforded protection in this way, this colony is the second largest guillemot colony in England.

A review of the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies (McSorley *et al*. 2003) has been conducted (Annex 5 in the Project Overview document). In summary, McSorley *et al*. (2003) is considered to: i) constitute a significant body of reliable, empirically-based evidence supporting the conclusion that these areas of water have clear ecological significance to the life-histories of the species for designation; ii) provide evidence that is based on at least one high quality source of data; and iii) make a convincing case that for auks, these

waters make a significant contribution to the life cycle of the species due to their role in providing supporting habitats or processes.

Thus, it is considered that the provision of protection of waters within a one kilometre buffer[19] area around the guillemot colony at Lundy SSSI via the Lundy MCZ will, by virtue of the size of the colony in an English context and its position in the south-west of England (on the one hand being far removed from the only two English colonies where such measures are nearer to being implemented (Flamborough & Filey Coast and Northumberland Marine pSPAs) but on the other hand near several other guillemot colonies in south-west England where such MCZ third-party proposals are being considered), make a contribution to both the representivity and replication of sites within the MPA network. All of this is re-considered to merit a score of **HIGH** for Ecological Significance.

Razorbill

Original assessment

This third-party proposal was to form a four kilometre 'generic maintenance extension' extending offshore around the existing coastal SSSI in which the birds nest in order to afford site-based protection within the sea area considered most likely to support maintenance activities of these species.

Evidence was provided that the SSSI is a nationally important site and regionally very important and has been for some time. The assessment of the ecological significance of the proposed MCZ, when considered in a national context, differed between each of the proposed features, in line with the relative importance of the numbers of each species nesting in the Lundy SSSI. Thus the ecological significance of the proposal was assessed as **HIGH** for razorbill.

References were made to site specific and generic evidence regarding the ecological significance of sea areas adjacent to colonies for the proposed features of the site (for maintenance activities).There is FAME and STAR modelling data for Razorbill for 'at sea distribution' at site.

The data used for Razorbill (FAME & STAR) indicated the importance of areas that, while being significantly larger than the area being proposed, do include it at their centre. This evidence suggesting the usage of these sea areas by these two species is moderated by the relative numbers of these species within the SSSI led to an assessment that the ecological significance for Razorbill is **HIGH**.

The argument presented in the third-party proposal in favour of the ecological significance of this area is also based on expert judgement which has seen 'generic' maintenance extensions of this type applied to many SPA seabird colonies around the UK, as a matter of best practice. That approach has an empirical evidence base, based on research conducted by JNCC and published in various JNCC reports and is referenced in the third-party proposal. This can be considered a high quality data source (albeit not site-specific) in regard of the ecological significance of maintenance extensions to the birds at a given colony. However, when considering ecological significance in a national context, the relative importance of the numbers of birds at the colony must be considered and that led to the assessments given here.

Additional evidence gathered and revised assessment

A review of seabird colony count data (see Annex 6 in the Project Overview document) reveals that based on the national Seabird 2000 census data, the number of razorbills at the Lundy SSSI colony at that time (950 individuals) made this site the second largest razorbill colony in England, behind only

[19] Actually four kilometres at Lundy as the generic buffer for Manx shearwater encompasses the one kilometre buffer required by auks.

Flamborough Head & Bempton Cliffs SPA in England. Since Seabird 2000, numbers of razorbills have increased (1,324 individuals in 2013) in common with many other sites. Based on more recent count data at colonies, where these are available, Lundy SSSI remains the second largest colony in England.

Maintenance extensions have been proposed within the Flamborough & Filey Coast pSPA and for the Farne Islands colony within the surrounding Northumberland Marine pSPA. Thus, the ecological significance of providing protection to breeding guillemots by way of generic maintenance extensions has been acknowledged at the two largest guillemot colonies in England. The third-party proposal to do so at the Lundy SSSI within the Lundy MCZ would similarly be of considerable ecological significance to the birds at this colony, and of wider ecological significance to the species in England given that, aside from the SPAs already afforded protection in this way, this colony is the second largest guillemot colony in England.

A review of the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies (McSorley *et al.* 2003) has been conducted (Annex 5 in Project Overview document). In summary, McSorley *et al*. (2003) is considered to: i) constitute a significant body of reliable, empirically-based evidence supporting the conclusion that these areas of water have clear ecological significance to the life-histories of the species for designation; ii) provide evidence that is based on at least one high quality source of data; and iii) make a convincing case that for auks, these waters make a significant contribution to the life cycle of the species due to their role in providing supporting habitats or processes.

Thus, it is considered that the provision of protection of waters within a one kilometre buffer[1] area around the guillemot colony at Lundy SSSI via the Lundy MCZ will, by virtue of the size of the colony in an English context and its position in the south-west of England (on the one hand being far removed from the only two English colonies where such measures are nearer to being implemented (Flamborough & Filey Coast and Northumberland Marine pSPAs) but on the other hand near several other guillemot colonies in south-west England where such MCZ third-party proposals are being considered), make a contribution to both the representivity and replication of sites within the MPA network. All of this is re-considered to merit a score of **HIGH** for Ecological Significance.

Manx shearwater

Original assessment

This third-party proposal was to form a four kilometre 'generic maintenance extension' extending offshore around the existing coastal SSSI in which the birds nest in order to afford site-based protection within the sea area considered most likely to support maintenance activities of these species.

Evidence was provided that the SSSI is a nationally important site and regionally very important and has been for some time. The assessment of the ecological significance of the proposed MCZ, when considered in a national context, differed between each of the proposed features, in line with the relative importance of the numbers of each species nesting in the Lundy SSSI. Thus the ecological significance was assessed as **HIGH** for Manx shearwater (Lundy being the largest colony in England).

References were made to site specific and generic evidence regarding the ecological significance of sea areas adjacent to colonies for the proposed features of the site (for maintenance activities). Freeman *et al.* (2012) estimated occupation polygons of usage by Manx shearwater.

The 2012 data (Manx shearwater at sea distribution) is site specific based on tracking data and showed the proposed area does include the area most frequently used by the species. This data, combined with the colony data confirmed the score of **HIGH** for the ecological significance for this species and also supported the generic four kilometre extension proposed by JNCC.

The argument presented in the third-party proposal in favour of the ecological significance of this area was also based on expert judgement which has seen 'generic' maintenance extensions of this type applied to many SPA seabird colonies around the UK, as a matter of best practice. That approach has an empirical evidence base, based on research conducted by JNCC and published in various JNCC reports and referenced in the third-party proposal. This can be considered a high quality data source (albeit not site-specific) in regard of the ecological significance of maintenance extensions to the birds at a given colony. However, when considering ecological significance in a national context, the relative importance of the numbers of birds at the colony must be considered and that led to the assessments given here.

Additional evidence gathered and revised assessment

A review of seabird colony count data (see Annex 6 in the Project Overview document) reveals that based on the national Seabird 2000 census data, the number of Manx shearwaters at the Lundy SSSI colony at that time (166 Apparently Occupied Burrows (AOBs), akin to pairs) made this site the second largest of the two sites supporting the species in England. Since Seabird 2000, rat eradication at Lundy has allowed the breeding population to rise to 3,451 AOB (SMP data, 2013), meaning it is now the most abundant colony in England.

Maintenance extensions have been proposed within SPAs and pSPAs elsewhere within the UK breeding range. Thus, the ecological significance of providing protection to breeding Manx shearwaters by way of generic maintenance extensions has been acknowledged. The third-party proposal to do so at the Lundy SSSI / MCZ would similarly be of considerable ecological significance to the birds at this colony, and of wider ecological significance to the species in England given that it is, by some margin, the largest colony in England.

A review of the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected Manx shearwater colonies (McSorley *et al.* 2008) has been conducted. This review is presented in Annex 5 in the Project Overview document. In summary, the evidence presented by McSorley *et al*. (2008) is considered to: i) constitute a significant body of reliable, empirically-based evidence supporting the conclusion that these areas of water have clear ecological significance to the life-histories of the species for designation, ii) provide evidence that is based on at least one high quality source of data and iii) make a convincing case that for Manx shearwaters, these waters make a significant contribution to the life cycle of the species due to their role in providing supporting habitats or processes.

Thus, it is considered that the provision of protection of waters within a four kilometre buffer area around the Manx shearwater colony at Lundy SSSI via the Lundy MCZ will, by virtue of the size of the colony in an English context and its position in the south-west of England (situated approximately mid-way between the smaller colony within the Isles of Scilly SSSIs / SPA and much larger colony within the Skokholm & Skomer SPA in Wales) make a contribution to both the representivity and replication of sites within the MPA network. All of this is re-considered to merit a score of **HIGH** for Ecological Significance.

6.9.2.2 Presence and Persistence

Table 110 Summary of scoring for Principle 2 Presence and Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	**High**	**High**	**High**
Razorbill	**High**	**High**	**High**
Manx shearwater	**High**	**High**	**High**

Justification

Common guillemot

Original assessment

There was evidence presented of the long-term presence of Common guillemot in the adjacent SSSI and modelled data showed the at-sea distribution (FAME & STAR).

Common guillemot were included when the SSSI was notified in 1987 and recent evidence was given for population sizes (guillemot data 1986-2013). All populations were shown to be increasing (after rat eradication work). Productivity data showed a decrease for guillemots. This data suggested a score of **HIGH** against the presence and persistence principle for this species.

However the modelled data (FAME & STAR) predicted a larger area extending beyond the third party-proposed area, where the species are predicted to persistently spend significantly greater time than elsewhere. This supported the assessed significance of the proposed area although not the actual boundary to it. This data, combined with the colony data, suggested a score of **HIGH** against the ecological persistence principle.

If one considers that the principle of maintenance extensions applies to SSSIs as it has been applied to SPAs, then one might consider the confidence in that generic evidence base to be **HIGH,** because analysis of empirical data indicated that sea areas within one kilometre of seabird colonies will, in general, support persistently relatively high levels of usage by auks. This can be considered a high quality data source (albeit not site-specific) meriting a **HIGH** score for persistence.

Additional evidence gathered and revised assessment

A review of the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies (McSorley *et al*. 2003) has been conducted. This study provides the empirical survey data and analysis that demonstrates the consistent within-species and across-colonies occurrence of persistently higher densities of auks engaged in active maintenance behaviour in waters within one kilometre of their breeding colony than further offshore. The review of this report is presented in Annex 5 in the Advice Overview document. In summary, the evidence presented by McSorley *et al*. (2003) is considered to :i) constitute a significant body of reliable, empirically-based evidence to support the conclusion that the area of sea within one kilometre of a guillemot colony is likely to have persistent presence at higher densities of the species than the surrounding waters and ii) provide one high quality source of data with large and representative sample sizes, collected over an adequate

period of time and analysed according to best practice that yields outputs that have low levels of uncertainty.

Thus, this information, together with the fixed location of what is the fourth largest common guillemot colony in England, provides a compelling case for the persistent presence at higher densities of guillemots during the breeding season within the proposed one kilometre buffer around the Lundy SSSI (to be included within the Lundy MCZ) than in other waters immediately local to Lundy, regionally across south-west England and indeed in comparison to waters around most of the rest of England. This suggests that the score for this principle can be re-assessed as **HIGH.**

Razorbill

Original assessment

There was evidence of the long-term presence of Razorbills in the adjacent SSSI and modelled data showed the at-sea distribution (FAME & STAR).

Razorbills were included when the SSSI was notified in 1987 and recent evidence was given for population sizes (razorbill data 1986-2013). All populations were shown to be increasing (after rat eradication). Productivity data are not available for razorbills. This data suggested a score of **HIGH** against the presence and persistence principle for this species.

However the modelled data (FAME & STAR) predicted a larger area extending beyond the proposed area where the species are predicted to persistently spend significantly greater time than elsewhere. This supported the assessed significance of the proposed area although not the actual boundary to it. This data combined with the colony data suggested a score of **HIGH** for persistence.

If one considers that the principle of maintenance extensions applies to SSSIs as it has been applied to SPAs, then one might consider the confidence in that generic evidence base to be **HIGH,** because analysis of empirical data indicated that sea areas within one kilometre of seabird colonies will, in general, support persistently relatively high levels of usage by auks. This can be considered a high quality data source (albeit not site-specific) meriting a **HIGH** score for persistence.

Additional evidence gathered and revised assessment

A review of the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies (McSorley *et al*. 2003) has been conducted. This study provides the empirical survey data and analysis demonstrating the consistent within-species and across-colonies occurrence of persistently higher densities of auks engaged in active maintenance behaviour in waters within one kilometre of their breeding colony than further offshore. The review of this report is presented in Annex 5 in the Advice Overview document. In summary, the evidence presented by McSorley *et al*. (2003) is considered to: i) constitute a significant body of reliable, empirically-based evidence to support the conclusion that the area of sea within one kilometre of a razorbill colony is likely to have persistent presence at higher densities of the species than the surrounding waters and ii) provide one high quality source of data with large and representative sample sizes, collected over an adequate period of time and analysed according to best practice that yields outputs that have low levels of uncertainty.

Thus, this information, together with the fixed location of what is the second largest razorbill colony in England, provides a compelling case for the persistent presence, at higher densities, of razorbills during the breeding season within the proposed one kilometre buffer around the Lundy SSSI (to be included within the Lundy MCZ) than in other waters immediately local to Lundy, regionally across south-west England and indeed in comparison to waters around most of the rest of England. This suggests that the score for this principle can be re-assessed as **HIGH.**

Manx shearwater

Original assessment

There was evidence of the long-term presence of Manx shearwaters in the adjacent SSSI and modelled data showed the at sea distribution (Freeman *et al*. 2012).

Manx shearwaters were included when the SSSI was notified in 1987 and recent evidence was given for population sizes (Manx shearwater data 2001-2013). All populations were shown to be increasing (after rat eradication). Productivity data were not available. This data suggested a score of **HIGH** against the presence and persistence principle for this species.

However the site specific tracking data for Manx shearwater (Freeman *et al*. 2012) did confirm higher levels of density within 4+ kilometres of the colony. This data combined with the colony data suggested a **HIGH** confidence in persistence.

If one considers that the principle of maintenance extensions applies to SSSIs as it has been applied to SPAs, then one might consider the confidence in that generic evidence base to be **HIGH,** because analysis of empirical data indicated that sea areas within four kilometres of Manx shearwater colonies will in general support persistently (relatively) high levels of usage by Manx shearwaters for conducting maintenance behaviours. This can be considered a high quality data source (albeit not site-specific) meriting a **HIGH** score for persistence.

Additional evidence gathered and revised assessment

A review of the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected Manx shearwater colonies (McSorley *et al*. 2008) has been conducted. This study provides the empirical survey data and analysis demonstrating the consistent within-species and across-colonies occurrence of persistently higher densities of Manx shearwaters engaged in active maintenance behaviour (rafting) in waters within four kilometres of their breeding colony than further offshore. Manx shearwater ecology, and specifically the formation of evening rafts of birds, determines the extent of the boundary required, which is larger than the one kilometre required for different maintenance behaviours by guillemots and razorbills. The review of this report is presented in Annex 5 in the Advice Overview document. The corroborative information from Freeman *et al*. (2012) indicates that the majority of tracked Manx shearwaters foraging trips were close to the island, further supporting the conclusions of McSorley *et al*. (2008) that the four kilometre boundary is especially crucial for several key behaviours, though some foraging also occurs beyond this limit. In summary, the evidence presented by McSorley *et al*. (2008) is considered to: i) constitute a significant body of reliable, empirically-based evidence to support the conclusion that the area of sea within four kilometres of a Manx shearwater colony is likely to have persistent presence (at higher densities) of the species than the surrounding waters and ii) provide one high quality source of data with large and representative sample sizes, collected over an adequate period of time and analysed according to best practice that yields outputs that have low levels of uncertainty.

Thus, this information, together with the fixed location of what is the largest Manx shearwater colony in England, provides a compelling case for the persistent presence at higher densities of Manx shearwaters during the breeding season within the proposed four kilometre buffer around the Lundy SSSI (to be included within the Lundy MCZ) than in other waters immediately local to Lundy, regionally across south-west England and indeed in comparison to most (if not all) waters around the rest of England. This suggests that the score for this principle can be re-assessed as **HIGH.**

6.9.2.3 Site size and delineation

Table 111 Summary of scoring for Principle 3 Site size and Delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	Moderate	High	**High** as generic maintenance extension resulting from review of JNCC evidence
Razorbill	Moderate	High	**High** as generic maintenance extension resulting from review of JNCC evidence
Manx shearwater	Moderate	High	**High** as generic maintenance extension resulting from review of JNCC evidence

Justification

Common guillemot

1 *Original assessment*

See assessment for Manx shearwater (below), the species with the largest required maintenance extension (four kilometres cf. one kilometre for auks) and thus the species determining the size and shape of the proposed boundary.

Additional evidence gathered and revised assessment

See assessment for Manx shearwater (below), the species with the largest required maintenance extension (four kilometres cf. one kilometre for auks) and thus the species determining the size and shape of the proposed boundary.

Razorbill

Original assessment

See assessment for Manx shearwater (below), the species with the largest required maintenance extension (four kilometres cf. one kilometre for auks) and thus the species determining the size and shape of the proposed boundary.

Additional evidence gathered and revised assessment

See assessment for Manx shearwater (below), the species with the largest required maintenance extension (four kilometres cf. one kilometre for auks) and thus the species determining the size and shape of the proposed boundary.

Manx shearwater

Original assessment

The third-party proposal was for a four kilometre extension following JNCC-endorsed generic guidance for Manx shearwater.

There were modelled site-specific survey data provided to support the proposed area (for Manx shearwater, Freeman *et al*. 2012), however data would be considered **MODERATE** due to moderate sample size (16). Also, modelled data for guillemot and razorbill showed areas considerably larger than that proposed where species spend significantly greater time and so this data was not considered to

justify the four kilometre boundary. It is reasonable to say that the site-specific data had not been used to define the site boundary but did suggest there may be some basis to conclude that the generic boundary is too small.

The proposed boundary measures four kilometres from the SSSI seaward boundary, however this is not in line with Ecological Network Guidance (not a simple straight line boundary). However, the rationale behind the size of the extension remains sound and therefore it merits a score of **MODERATE** (size and shape most likely will maintain integrity of features).

Furthermore, the proposed boundary does follow the recommendations of reports published by JNCC regarding the extent of generic maintenance extensions for Manx shearwaters i.e. four kilometres and referred to in the third-party proposal. This can be considered one high quality data source (albeit not site-specific), such that one might potentially score this as **HIGH**.

Additional evidence gathered and revised assessment

The review of the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected Manx shearwater colonies (McSorley *et al*. 2008) discussed in earlier sections is also relevant to Principle 3. In light of this review, the score for this principle can be re-assessed as **HIGH**.

6.9.2.4 Appropriateness of Management

Table 112 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Common guillemot	**Low**	**Moderate**	**Moderate**
Razorbill	**Low**	**Moderate**	**Moderate**
Manx shearwater	**Low**	**Moderate**	**Moderate**

Justification

Common guillemot, razorbill, Manx shearwater

Further evidence has been provided which demonstrates ongoing activities within or adjacent to the proposed boundary, that have the potential to impact the proposed species features. The following activities generate pressures to which the species is highly or moderately sensitive, and may have the potential to impact the conservation status of the species.

- COMMERCIAL SHIPPING: vessel movements (Visual disturbance, Above water noise)
- FISHING: diving (Visual disturbance)
- RECREATION: Powerboating or sailing with an engine: launching and recovery, participation, mooring and/or anchoring (Visual disturbance, Above water noise)
- RECREATION: sailing without an engine (Visual disturbance, Above water noise)

- RECREATION: non-motorised watercraft (Visual disturbance, Above water noise)

Common guillemot, razorbill and Manx shearwater are susceptible to visual and noise disturbance generated by the movement of both commercial and recreational crafts including non-motorised water craft and visual disturbance from divers. These activities are known to occur throughout the site. There is an island code of conduct which manages boating activities and diving and snorkelling within the existing MCZ.

The evidence held by, or available to, Natural England on activities (pressures and sensitivities) and management is considered to: i) constitute a comprehensive account of the range of activities which take place within the third-party proposed MCZ, or have an influence within it, that may have an adverse impact on the status of the species proposed for designation, ii) demonstrate some of the levels at which some of the activities occur, iii) describe any existing management measures in place within the MCZ, iv) show that there are ongoing activities in the area, or other identified threats which are likely to give rise to pressures to which the species may be highly or moderately sensitive, and may have the potential to impact the conservation status of the species at the population or sub-population level, v) consider if existing wider measures may not be sufficient to address any threats posed to the species within the third-party proposed MCZ boundary. In addition, possible management options (appropriate for providing MCZ protection) have been identified that may reduce the effect of current or future damaging activities on the third-party proposed species.

Based on the comprehensive account provided of site-specific activities and current management measures, the score for this principal can be re-assessed as **MODERATE.**

6.9.3 General Management Approach

Table 113 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Activities that have influenced the GMA
Common guillemot	Maintain in favourable condition	A Maintain GMA has been proposed due to SSSI condition assessment of 'favourable condition' for the same population of birds. For further information on activities/pressures which may be of concern in the future if impact increases please see below.
Razorbill	Maintain in favourable condition	A Maintain GMA has been proposed due to SSSI condition assessment of 'favourable condition' for the same population of birds. For further information on activities/pressures which may be of concern in the future if impact increases please see below.
Manx shearwater	Maintain in favourable condition	A Maintain GMA has been proposed due to SSSI condition assessment of 'favourable condition' for the same population of birds. For further information on activities/pressures which may be of concern in the future if impact increases please see below.

Justification

Common guillemot

There is direct condition evidence from Lundy SSSI condition assessment which confirms that this feature is in favourable condition. A GMA of Maintain is advised using this direct condition evidence, and as a result a vulnerability assessment is not required. The draft MCZ and SSSI designation refers to the same

population of birds. The SSSI condition assessment for common guillemot was carried out in 2015 which showed that the feature is in favourable condition. The condition assessment is based on the 2013 population size of 4114 individuals being greater than 2096 individuals, the population size at designation.

Razorbill

There is direct condition evidence from Lundy SSSI condition assessment which confirms that this feature is in favourable condition. A GMA of Maintain is advised using this direct condition evidence, and as a result a vulnerability assessment is not required. The draft MCZ and SSSI designation refers to the same population of birds. The SSSI condition assessment for razorbill was carried out in 2015 which showed that the feature is in favourable condition. The condition assessment is based on the 2013 population size of 1324 individuals being greater than 761 individuals the population size at notification.

Manx shearwater

There is direct condition evidence from Lundy SSSI condition assessment which confirms that this feature is in favourable condition. A GMA of Maintain is advised using this direct condition evidence, and as a result a vulnerability assessment is not required. The draft MCZ and SSSI designation refers to the same population of birds. The SSSI condition assessment for Manx shearwater was carried out in 2015 which showed that the feature is in favourable condition. The condition assessment is based on the 2013 population size of 3451 apparently occupied burrows being greater than 297 apparently occupied burrows in 2001 when the population baseline was established.

In summary, all three species populations have increased and although they are susceptible to visual and noise disturbance generated by the movement of commercial shipping and recreational boating (with and without an engine); and visual disturbance from diving activity occurring within the proposed area and which may potentially impact the conservation status of the species, we conclude that these activities are not currently having an adverse impact on the population. There is an island code of conduct which manages boating activities and diving and snorkelling within the existing MCZ. However, if the intensity of these activities increased to a level where the species were being impacted than additional management measures may be required.

The GMA advice given in this document is derived from analysis of potential direct impacts on the species proposed for protection. This third-party proposal was submitted with the aim of providing, if designated, protection within an MCZ of a limited sea area adjacent to SSSI colonies, in recognition of these areas being of greatest importance for birds engaging in critical active maintenance behaviours, rather than foraging *per se*. Therefore, the focus would be on protection of the population from direct impacts via e.g. disturbance, displacement and direct mortality, as opposed to any particular protection of supporting habitats.

6.10 Studland third-party proposed highly mobile species MCZ

Contents

6.10.1 Background

This third-party proposal was submitted by the RSPB for the purpose of adding black-necked grebe as a new feature of the Regional Project recommended Studland Bay rMCZ.

The black-necked grebe is named in the 2001 SPA review (Stroud *et al.* 2001) as one of the species for which there are no aggregations of European importance within the UK and for which no SPAs have been identified in the UK. The relative scarcity of the species in the UK when considered in a European context means that even the most important sites in the UK do not hold numbers that exceed the high threshold required for the species to qualify as a feature of an SPA in its own right and that any site in the UK would add relatively little to any pan-European network of sites such as the Natura 2000 network. The third SPA review (Stroud *et al.* 2016) did not consider this species and deferred to the ongoing marine SPA sufficiency review which is yet to be completed. Various aspects of the ecology of black-necked grebe in the non-breeding season suggest that, in comparison with many other 'marine' species, it is relatively well suited to site-based protection. Thus, within a UK or indeed English context the lack of any site-based protection for this species to date via the Natura 2000 network means that inclusion of this site within a national suite of MCZs with black-necked grebe as a feature, in conjunction with other sites proposed for this species, would make a significant contribution to delivery of a representative and replicated suite of sites that would afford protection to this species at sea in the winter in England.

6.10.2 Assessment against selection criteria

6.10.2.1 Ecological significance

Table 114 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**High**	**High**	**High** More recent count data have confirmed the regular and continuing presence of the species in numbers that confirm the site's position as the second most important in England and the UK.

Justification

Black-necked grebe

Original assessment

Count data were provided for the area of 'Studland Bay' over a long period, 1997/8 – 2011/12, with figures available for each winter from 2004-05 – 2011-12, and anecdotally before that. The Torbay submission included more recent data – WeBS counts to 20114/15, which showed this site (Studland) to be the second most important in the south-west region; mean peak count over last reported five years being 50, with highest numbers in January. Two sources of data were mentioned: WeBS counts and county records, though these are not necessarily entirely independent and use the same approach. Evidence was for wintering records only, though no information on months of usage/seasonal variations was provided – but presumably could be determined from records. However, count data by season combined with an understanding of overall population level (alluded to here in terms of percentage), provided good evidence of the ecological significance of the site for this species (See section 6.6 Carrick Roads for further details on overall populations of black-necked grebe).Considered in the context of the new national WeBS picture then the resulting score was **HIGH**. It was noted that more recent WeBS counts from 2015/16 should be available and may confirm if the reduction in peak numbers seen at Studland in 2013/14 (29) and 2014/15 (29) has continued.

No other sites are designated for this species within the network at present though Falmouth Bay to St Austell Bay pSPA should provide a good degree of proxy protection.

Additional evidence gathered and revised assessment

The black-necked grebe has a very wide geographic range both during the breeding season and the non-breeding season. It is fully migratory and spends the non-breeding season in different areas to those in which it breeds. Within the UK, there is a very small breeding population which breeds on small, shallow freshwater bodies such as lakes and lochs with lush fringing vegetation and dispersed submergent vegetation. The birds disperse from their breeding grounds in late summer and undergo a protracted movement, mainly at night, throughout the autumn to staging grounds and then to their wintering quarters. In the UK, the non-breeding population, which includes many individuals that do not breed in the UK, has a mainly coastal distribution, favouring shallow, inshore waters, bays and estuaries etc. Black-necked grebes are extremely inefficient fliers and are virtually flightless during the winter period. Accordingly, their movements are relatively restricted once they have arrived on their wintering grounds. The birds can remain within their restricted wintering quarters until March and so rely on the availability of safe and undisturbed feeding and roosting areas for almost half of every year in order to survive the non-breeding season and to do so in good enough body condition to complete their arduous return spring migration to the breeding grounds. Thus, shallow inshore waters, such as those proposed for inclusion within this MCZ, are of critical importance to the well-being and survival of the birds that return to them each winter.

Green (2004) reviewed the historical reports of sightings of black-necked grebes in Dorset. It is clear from this review that black-necked grebes have occurred persistently in the area of Studland Bay/Poole Harbour for a very long time, this being known as the main wintering area for the species in the county since the 1950s (Green 2004).

Original and additional count data have been obtained from two of the local observers who have contributed many of the counts published in the WeBS online database. Some of the peak annual counts published on the WeBS online database are derived directly from the data provided by these observers, but in some years, eg 2014/15, that is not the case. The local observers have also provided their count data from the most recent two winters which are not yet available on the WeBS database. Table 2 summarises the information available from WeBS online database over the most recent ten seasons for which information is available in that database, and presents alongside the peak and average counts derived independently by each of these two local observers in each year.

Table 115 Summary of all records of sightings of black-necked grebe on the sea at Studland since 2005/2006

The second and third columns contain the annual peak counts included on the WeBS online database either restricted to core WeBS counts (second col) or including supplementary counts (third col). The fourth-sixth columns provide a summary of the peak and mean number of individuals (and number of surveys) recorded by S. Smith from the main beaches at Studland i.e. Knoll Beach and Middle Beach. The seventh-ninth columns provide a summary of the peak and mean number of individuals (and number of surveys) recorded by S. Morrison in the main roost sites off the main beaches at Studland i.e. Knoll Beach and Middle Beach. Counts in bold in the fourth and seventh columns indicate counts from local observers that either exceed that recorded on WeBS or are not yet available through WeBS.

Season	WeBS (peak count excluding supplementary counts)	WeBS (peak count including supplementary counts)	Count data provided by S. Smith (Studland Bay beaches only)			Count data provided by S. Morrison (Studland roost only)		
			peak	mean	n counts	peak	mean	n counts
2005/06[20]	-	21	11	11.0	1			
2006/07	-	20	7	7.0	1			
2007/08	-	23	19	7.8	13			
2008/09	-	37	25	12.1	32			
2009/10	-	38	38	8.7	31			
2010/11	9	80	75	23.2	20	80	47.8	21
2011/12	32	58	38	19.0	12	58	41.3	9
2012/13	27	56	48	18.4	57			
2013/14	29	29	29	15.0	13			
2014/15	(15)	29	27	11.7	45	**44**	23.7	7
2015/16	-	-	**20**	9.2	34			
2016/17[21]	-	-	***35***	*32.0*	*2*			

The provision of this additional information has verified the peak numbers recorded on the WeBS database in several of the most recent winter seasons. From the most recent winters' counts it would appear that peak numbers were lower in 2015/16 than in the preceding winters, but the very limited count data from the current winter suggests peak numbers have not continued to decline, and have bounced back to figures seen in 2011/2012 and in years prior to the peak year of 2010/2011. Peak winter counts in the 20s-30s seen in the most recent years are typical of those seen in the 1950s and higher than those throughout the 1960s-1990s (Green 2004).

This dataset, with the verification provided by the local observers, and the provision of the data from the two most recent winters, confirms the continued presence of the species in the site in the most recent winters and yields a provisional five year mean peak count (2012/13 – 2016/17) of 33.8. This maintains the site's current rank order (ie second) in the WeBS online ranking of all sites supporting this species in England (and across the UK as a whole). With the current winter of 2016/17 yielding a provisional peak count of 35, there is no compelling evidence that the peak numbers recorded at this site are in any long-term decline.

Examination of all of the individual counts provided by S. Smith covering years from 1999-2016 reveals that black-necked grebes are recorded in the site in seven months of the year (October-April). Peak numbers can occur in any of the months of winter ie November (four years), December (five years) and

[20] In 2005/2006 Footprint Ecology conducted a series of 29 standardised surveys covering Shell Bay and Studland Bay (Liley *et al.* 2006). These yielded a peak count of 14 individuals and an average of 7.7 individuals

[21] Peak and mean counts for 2016/17 are provisional as based only on counts up to December 2016

January (seven years). The site supports the species over a considerable part of the year and critically throughout the core winter months.

Local knowledge of this site makes clear that the waters around Studland are not used solely for feeding during daylight hours but are equally, or even more, important as a roost site in which black-necked grebes aggregate in the hours of darkness. Morrison (2015) conducted surveys of the wader and waterfowl roosts in and around Poole Harbour in the winter of 2014/15. Surveys of roost sites of divers, seaduck and grebes were made at dawn and dusk, and identified three roost sites for black-necked grebes (Figure 1). One of these was inside Poole Harbour (roost B in Figure 1) and the other two (roosts C and D in Figure 1) were inside the bounds of the amended boundary of the MCZ proposed here (Morrison 2015).

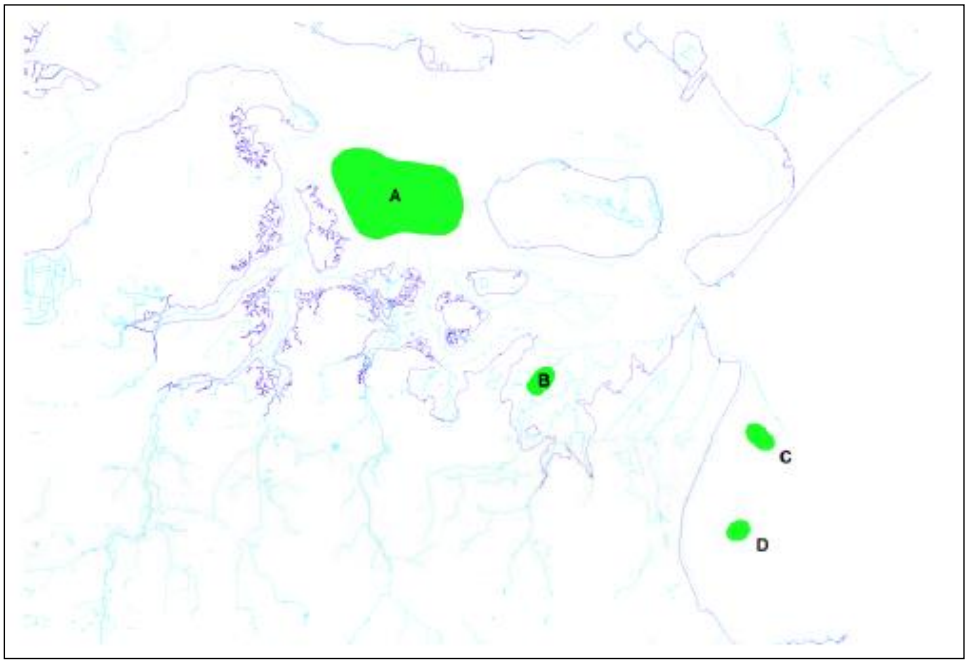

Figure 1 Distribution of seafowl roosts in Poole harbour and Studland Bay during the winter 2014/15. A – Round Island, B – Brand's Bay, C – Studland Bay north, D – Studland Bay south. Source: Morrison (2015). Black-necked grebes not recorded at Roost A.

Both S. Morrison and S. Smith have confirmed that numbers of black-necked grebes recorded at these roosts always exceed the numbers that can be recorded during the day when the birds are more dispersed and less easy to locate and count. Thus, the areas of water inside the proposed MCZ support the feature throughout the winter months and provide both feeding grounds and roosting sites. The site makes a significant contribution to the life cycle of the species due to its role in providing supporting habitats and processes. Liley *et al.* (2006) concluded that for black-necked grebe, the Studland area is the principal wintering location.

There is no question regarding the reliability of these data sources or any issue regarding the age of the data. The site clearly consistently provides supporting habitats or processes for the species, and in conjunction with the third-party proposals for Carrick Roads and Torbay, provides good replication of sites for the species in the south-west of England. In the absence of any other site-based protection for this species in the UK, and given the importance of this site in an English and UK context, ecological significance is scored as **HIGH**.

6.10.2.2 Persistence

Table 116 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**High**	**High**	**High** More recent count data have confirmed the regular and continuing presence of the species in numbers that confirm the site's position as the second most important in England and across the UK as a whole. Examination of local count records and surveys confirm the persistent presence of greater numbers of the feature inside the site than outside it.

Justification

Black-necked grebe

Original assessment

There was good evidence to show long term wintering usage. However evidence of higher densities in this area was based on inference rather than wider records/effort based reporting which showed they do not occur elsewhere. Evidence was provided that the numbers of birds in Studland Bay have increased steadily over the decade 2004/5 - 2014/15 with a peak being reached in 2010/11. Other evidence presented in the Torbay submission suggested this site is the second most important wintering area in the south-west of England based on WeBs counts. When also considered in the context of the new national WeBS picture the resulting score was **HIGH**.

Additional evidence gathered and revised assessment

The WeBS online database reveals that in addition to Studland Bay, there are three other locations on the Dorset/Hampshire coast that support significant numbers of black-necked grebes ie Fleet and Wey, Langstone Harbour and Poole Harbour (2010/11- 2014/15 mean peak counts of 22, 16 and 13 individuals respectively). These are the 4th, 5th and 6th most important sites listed on WeBS Online (Fal Complex being the most important and Studland being the 2nd most important). Clearly these are important sites for black-necked grebe but they do not consistently support the presence of such high numbers as does Studland (2010/11-2014/15 mean peak count of 50 individuals WeBS online). Studland is the most important of these sites in the Dorset/Hampshire region.

The proposed MCZ lies immediately outside the entrance to Poole Harbour. Black-necked grebes occur both outside the harbour entrance in the waters within the proposed MCZ and inside Poole Harbour. These areas are counted separately under WeBS and appear as separate sites on the WeBS online database. Based on that database Studland Bay supports considerably more birds than does Poole Harbour. This is confirmed in the detailed count data provided by a local observer (S. Smith). Table 4 presents a summary of the count data provided by this local observer in which separate counts are provided for three key areas: Brands Bay (inside Poole Harbour), and Shell Bay and Studland Bay (both outside the harbour and inside the suggested MCZ boundary).

Table 117 Summary statistics of all individual records of sightings of black-necked grebes ascribed to one of the three principal survey areas within the database provided by S. Smith.

Sightings only from 2007/2008 onwards as prior to then no consistent records were available for Brands Bay or Shell Bay. Count data from 2016/17 are given in italics as these are provisional as they do not yet include any counts from 2017.

season	Brands Bay			Shell Bay			Studland Bay		
	peak	mean	n counts	peak	mean	n counts	peak	mean	n counts
2007/08	6	3.5	2	3	3.0	1	19	7.8	13
2008/09	5	4.0	2	4	4.0	1	25	12.1	32
2009/10	9	3.1	9	2	1.7	3	38	8.7	31
2010/11	14	6.8	5	-	-	-	75	23.2	20
2011/12	9	4.0	7	5	2.3	3	38	19.0	12
2012/13	18	6.7	29	4	2.6	18	48	18.4	57
2013/14	25	7.1	7	3	2.5	2	29	15.0	13
2014/15	15	4.5	19	6	3.3	12	27	11.7	45
2015/16	24	7.9	26	2	1.1	7	20	9.2	34
2016/17	*4*	*4.0*	*1*	-	-	-	*35*	*32.0*	*2*
mean peak count	**12.9**			**3.6**			**35.4**		

The mean peak count across years since 2007/08 (since when all three areas have been recorded repeatedly and separately) in Brands Bay, Shell Bay and Studland Bay is 12.9, 3.6 and 35.4 respectively. It is worth noting that the relatively low numbers reported for Shell Bay may not reflect the true importance of this area for feeding birds as:

i) there is evidence that numbers here can be suppressed by human activity on the beach (Liley *et al.* 2006) and,
ii) birds tend not to roost in Shell Bay so any count coinciding with roost counts at Brands Bay or Studland beaches will generally include the birds that would have fed in Shell Bay at other times of day (subject to the level of human activity) in roost counts in these other places.

Adding together the counts for Shell Bay and Studland Bay, these being the areas within the MCZ boundary as suggested here, the mean peak of 39 is three times larger than that recorded in Brands Bay. It would appear that the sea areas outside the harbour mouth and inside the proposed MCZ support significantly greater numbers of black-necked grebes than the nearby waters inside the harbour. Further information in support of this conclusion is provided by the surveys in 2005/2006 by Footprint Ecology (Liley *et al.* 2006) and in 2014/15 by Morrison (2015).

As part of their survey programme, Liley *et al.* (2006) conducted two coordinated counts of the numbers of birds inside Poole Harbour and throughout the open sea in Poole Bay. These surveys involved a combination of simultaneous shore based observations and boat-based surveys. Observers were stationed all along the coast of Poole Bay from Old Harry rocks in the west (near the southern end of the proposed MCZ) to Hengistbury Head in the east. At the same time a boat conducted transect surveys across the offshore areas of Poole Bay. The seaward limit of these boat-based surveys was defined by a direct line between Old Harry and Hengistbury Head. On both occasions (December 2015 and February 2016) no black-necked grebes were recorded inside Poole Harbour while 22 and 11 birds were recorded outside in Poole Bay. Liley *et al* (2006) noted that '*these birds were mostly within Shell Bay and Studland Bay, but did include one individual feeding at the base of Old Harry'*. There was one other individual bird not in either Shell Bay or Studland Bay (Liley *pers. comm*.). Liley *et al*. (2006) concluded that 'for species such as the black-necked grebe the Studland area is the principal wintering location'.

Morrison (2015) reported a maximum number of 15 black-necked grebes at the roost site in Brands Bay inside Poole Harbour in comparison with 2 at Studland Bay (north) and 44 at Studland Bay (south) (46 combined). Like the records provided by S. Smith, these records yield a ratio of approximately 3:1 in terms of the numbers of birds reported at roosts outside the harbour (and inside the proposed MCZ) compared with numbers inside the harbour.

As noted above, the two boat-based surveys of the wider Poole Bay reported by Liley *et al.* (2006) found just two black-necked grebes that were not within either Shell Bay or Studland Bay. It would appear from this that black-necked grebe usage of waters in Poole Bay beyond the proposed MCZ boundary is very limited. This survey work supports anecdotal information provided by S. Smith. His database of 464 records of black-necked grebes includes just one record of four black-necked grebes sighted off Flag Head Chine i.e. to the east of Poole Harbour entrance. Similarly, S. Smith notes that "*I have never seen them off east and south of Old Harry so do not believe they feed out there*". Another local observer noted that despite much searching over the waters to the north east of Studland i.e. the shallow waters over Hook Sands outside the entrance to Poole Harbour, he had not recorded any birds feeding over this area (S. Morrison, *pers. comm.*). It is fair to say that survey effort out with the focal survey areas of Brands Bay, Shell Bay and Studland Bay has been relatively limited in comparison to that in these areas. However, the evidence that is available suggests that black-necked grebes occur in far lower numbers and far less persistently in these other areas than they do in these core areas and that, as noted above, within these core areas, the areas within the proposed MCZ boundary persistently support significantly greater densities than the areas inside Poole Harbour.

Taken altogether, this additional evidence is considered to constitute a significant body of reliable, empirically based evidence that supports the conclusions that the area of the MCZ as suggested here supports the persistent presence of black-necked grebe at higher densities than the surrounding waters both locally, regionally and nationally. The evidence is derived from more than one independent source: counts provided independently by S. Smith and S. Morrison, and evidence from systematic surveys by Liley *et al.* (2006) and Morrison (2015). The data are considered to be of high quality, with multiple counts in each of every year since at least 2007/2008. This suggests that the score for this principle can be confirmed as **HIGH.**

6.10.2.3 Site size and delineation

Table 118 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**Not met**	**Moderate**	**High** Examination of detailed local sightings records and the results of bespoke surveys both suggest a minor boundary revision would incorporate all of the most important areas for this feature on the open sea outside Poole Harbour.

Justification

Black-necked grebe

Original assessment

No information was provided on this principle – for example showing local distribution within the bay or even count locations. However, it is questionable to what extent this is needed for addition of a feature to an existing site without any boundary change. Natural England is aware of a report (2006) by Footprint Ecology regarding black-necked grebe numbers and distribution in Studland Bay. This report, while not provided in the third-party proposal, provides valuable information on distribution which indicates that the proposed boundary, while holding many sightings, excludes a concentration of others in the bay immediately to the north-west of point A shown on the site map provided. A score of **NOT MET** was therefore concluded. However, it was acknowledged that consideration of this evidence, together with more recent sightings data that are likely to be available (D. Liley *pers. comm*.) could increase confidence in boundary assessment (to e.g. **MODERATE**), especially if considered together with bathymetry / habitat mapping.

Additional evidence gathered and revised assessment

Liley *et al.* (2006) conducted a series of 29 standardised shore-based counts of black-necked grebes and other waterbirds at Studland throughout the winter of 2005/2006. This involved use of three vantage points that together allowed the whole of the area inside the boundary of the proposed MCZ, as well as areas around it, to be surveyed. The location of each bird on the water was mapped onto base maps that showed the many numerous fixed marker buoys along the shipping channel and markers along the Training Bank. These provided useful markers for both distance from the observer and precise bearing. A sighting compass was used as necessary. The resultant map of sightings data is shown in Figure 2.

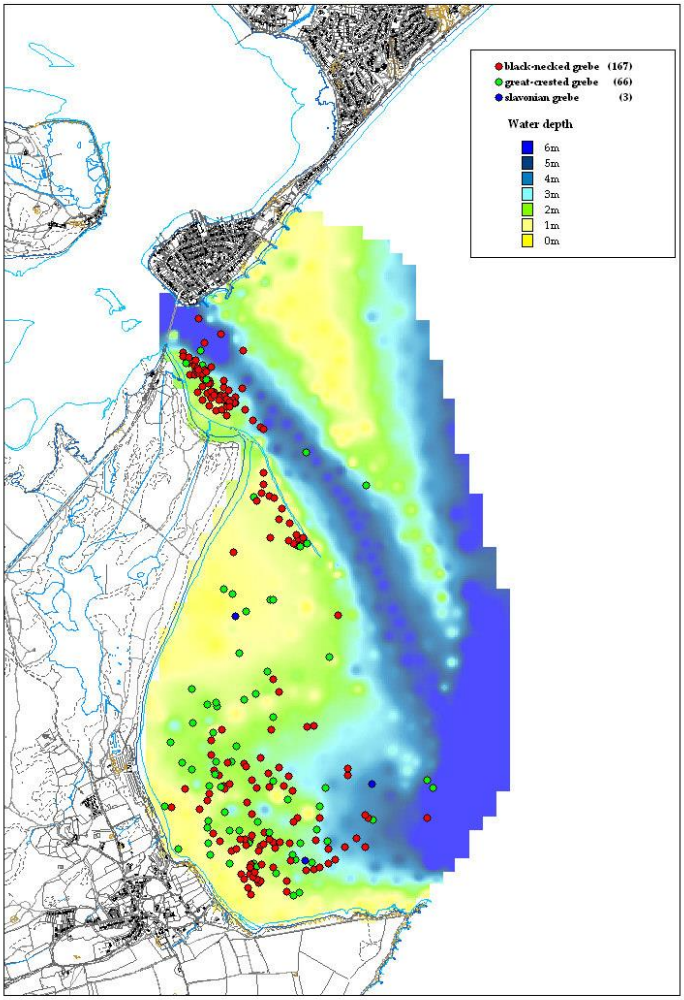

Figure 2 Grebe records (all records from the 29 standardised counts) ©Crown Copyright. All rights reserved, English Nature 100017954 (2006). Source: Liley et al. (2006). Black-necked grebe sightings are indicated by the red dots.

Black-necked grebes in particular showed a markedly clumped distribution, with records from Shell Bay, the Training Bank and the southern corner of Studland Bay. All of the sightings from the latter two of these areas fall inside the existing proposed MCZ boundary. However, the aggregation of sightings in Shell Bay lies to the north and outside of the boundary of the existing proposed MCZ. It is proposed here that to capture most of those sightings, this additional area be included within a revised boundary to the proposed MCZ.

Liley *et al.* (2016) found a negative correlation between the numbers of black-necked grebes recorded in Shell Bay and in Studland Bay at the same time and suggested that this indicated that birds move between the two areas. Liley *et al.* (2006) also found a negative association between the numbers of birds in Shell Bay and the number of people on the beach and speculated that high levels of human activity on the beach at Shell Bay leads to birds being displaced and moving to Studland Bay.

The surveys by Liley *et al.* (2006) were conducted at various times of day but were predominantly daytime counts (only one incidental dusk count is mentioned). It is known that black-necked grebes aggregate together at communal roosting sites on the water at dusk from which they disperse towards dawn (Morrison 2015; S. Morrison and S. Smith *pers. comm*.). In the winter of 2014/2015, Morrison (2015) conducted 20 visits to locate and survey seafowl roosts within and outside Poole harbour. A total of four roosts were located (Figure 1). Black necked grebes were not recorded at roost A inside the harbour (Figure 1) but were found at the three other roosts. Peak numbers summed across roosts C and D (46) were three times greater than that recorded inside the harbour at roost B. Morrison (2015) noted that Studland Bay south (Roost D Figure 1) is the main roost for black-necked grebe within the Poole Harbour complex.

Local observers very rarely record black-necked grebes in flight in winter and it is therefore generally considered that birds must move around mainly by swimming. The degree to which they do so and to which birds seen inside and outside Poole Harbour are linked is uncertain. Sightings of birds moving through the harbour mouth are very rare. However, S. Morrison (*pers. comm*.) considers that birds feeding in Brand's Bay and Shell Bay tend to roost in Brand's Bay with birds from Shell Bay moving into Brand's Bay towards dusk to attend the roost there. However, S. Smith (*pers. comm*.) assumes that birds which feed in Shell Bay roost further south in Studland Bay as he has often seen birds swimming into the roost from the direction of the harbour mouth.

It is known that the relative sizes of the populations recorded inside Poole Harbour and outside varies during the winter. The main factor driving that variation appears to be weather with strong easterly winds tending to be associated with choppy sea conditions, lower numbers of birds sighted outside the harbour entrance and an increase in numbers recorded inside. The reduced numbers recorded outside may simply reflect poorer observation conditions (rough seas) but the increase in numbers inside Poole Harbour does suggest a movement by the birds. This idea is supported by observations that numbers inside the harbour tend to eventually reduce again.

It is fair to say that the degree of interchange between waters inside the harbour and outside the harbour due to black necked grebes moving between feeding and roosting areas, and depending on prevailing weather conditions, is not known with any certainty. However, the evidence is clear that more individuals are consistently recorded in the waters outside the entrance to Poole Harbour than inside it during daytime counts and in particular during the dawn/dusk roost counts.

Shell Bay and Studland Bay constitute the most significant feeding and roosting areas for black-necked grebe in this locality and there is information indicative of regular interchange of birds between these two bays. With the inclusion of Shell Bay in the revised MCZ boundary suggested here, the site boundary will encompass all of the known areas of importance to this species outside the mouth of Poole Harbour (Figure 3). Next in importance to these areas proposed for inclusion within the MCZ are the waters inside

the mouth of Poole Harbour (Figure 3). However, given: i) the relatively lower importance of these waters to black-necked grebe, ii) the fact that all of the waters inside the entrance to Poole Harbour are now included within the revised Poole Harbour pSPA boundary (Natural England 2015) and iii) that the pSPA supports an internationally important waterbird assemblage that includes various diving birds including Slavonian grebe (*Podiceps auritus*), it is considered unnecessary to include these waters within the suggested MCZ boundary. Black-necked grebe inside Poole Harbour pSPA will already enjoy a degree of protection by proxy, unlike those outside the harbour mouth which it is now proposed to protect via this MCZ.

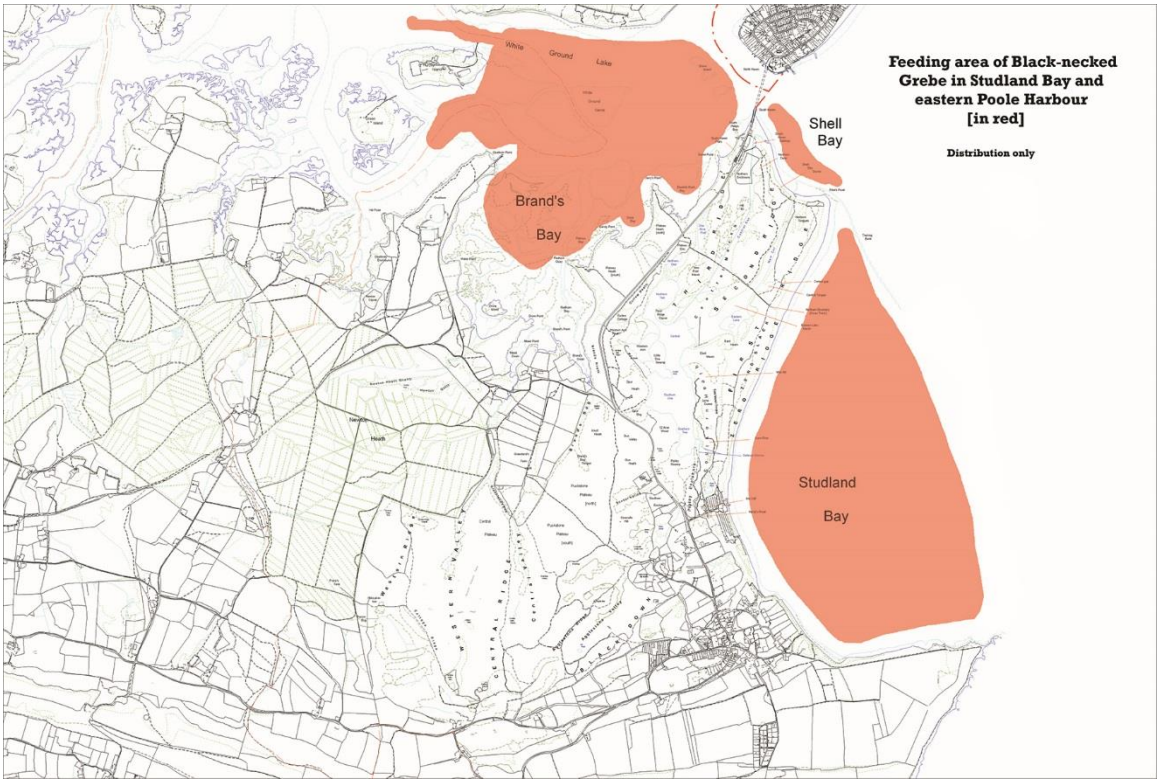

Figure 3 Map depicting the principal feeding areas of black-necked grebes in Studland Bay, Shell Bay and within Poole Harbour. Map provided by S. Morrison.

Liley *et al. (2006)* noted that the clusters of sightings of black-necked grebes in Studland Bay and around the Training Bank coincide very closely with the distribution of eel grass (*Zostera spp.*). A map of the known location on eelgrass beds in the area confirms this observation (Figure 4).

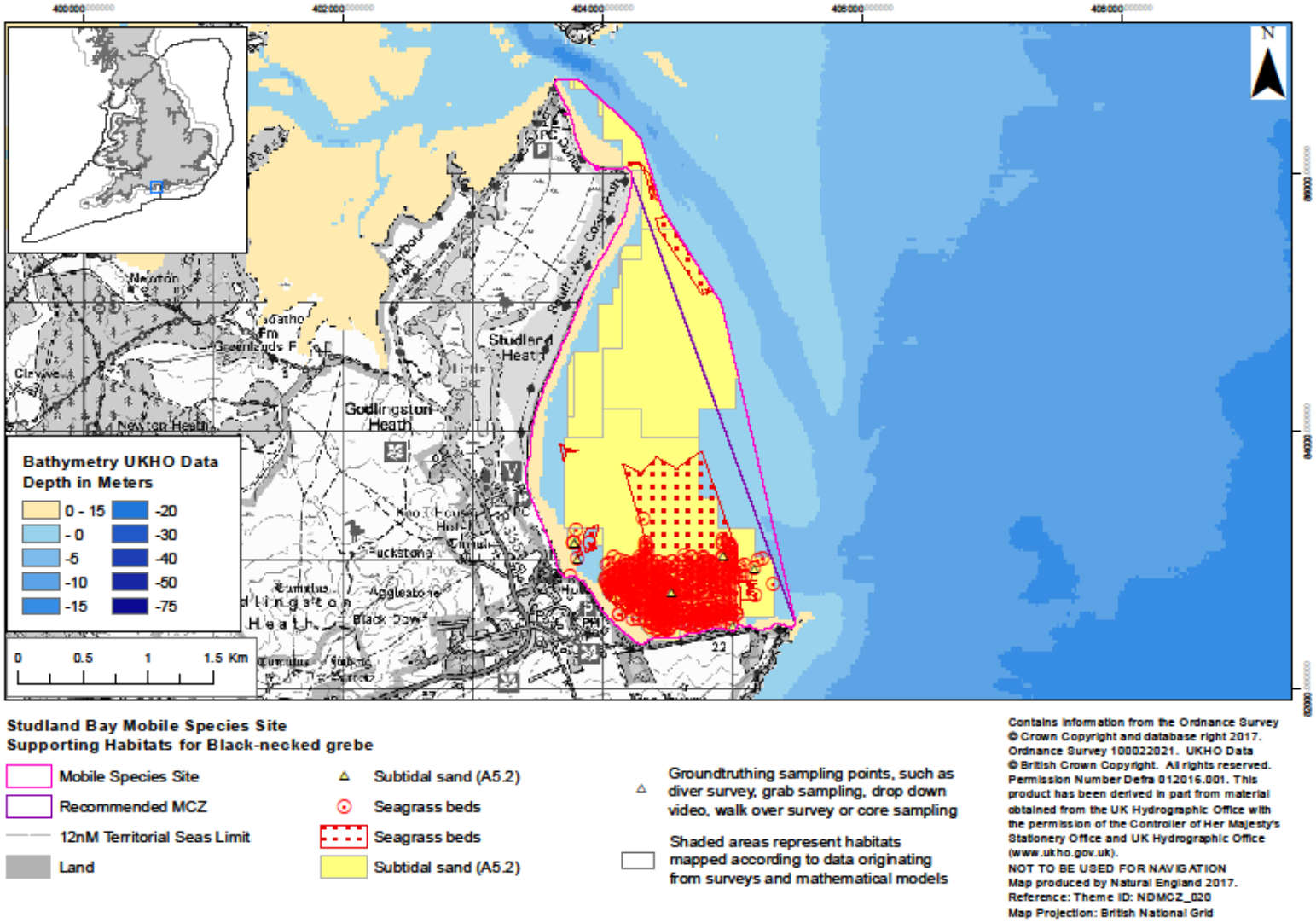

Figure 4 The distribution of known locations of seagrass beds and of subtidal sand within the area of the proposed MCZ. Source of habitat data: Natural England Marine Evidence geodatabase.

However, as noted by Liley *et al.* (2006) the sightings in Shell Bay do not coincide with a known area of eelgrass and suggests that the feeding habitat in this area must be different – perhaps subtidal sand (Figure 4).

Examination of the bathymetry of this region provides further supporting information that the MCZ boundary as proposed here now includes all of the relatively shallow waters that lie between the deep water shipping channel to/from Poole Harbour and the shoreline (Figures 2 and 4).

The additional bird sightings information, the information on supporting habitats and bathymetry taken together provide a strong evidence base that demonstrates that the size and shape of the area included within the boundary of the MCZ as proposed here, i.e. with the inclusion of the area of Shell Bay, is appropriate to ensure the viability of the site for this feature. The empirically-based evidence is considered to be reliable and recent, based on good quality sightings data gathered over numerous years from more than one independent source and is considered to justify that the score for this principle can be re-assessed as **HIGH.**

6.10.2.4 Appropriateness of Management

Table 119 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review
Black-necked grebe	**Not met**	**Moderate**	**Moderate** Although the Liley *et al.* (2006) study provides a detailed insight into some of the activities occurring in the area that may disturb the feature. Further fisheries information has been verbally relayed by SIFCA in Dec 2016.

Justification

Black-necked grebe

Original assessment

The third-party proposal provided very little discussion of activities within the bay during the relevant wintering period. Proposed management suggested: 'Monitoring and reactive management e.g. managing pollution risks, bycatch and recreational disturbance'. This lack of information merited a score of **NOT MET**.

However, this third-party proposal may justify a 'Low' if information relevant to it (but contained within the Carrick Roads) third-party proposal is considered in relation to species sensitivity to activities.

Furthermore, the report by Footprint Ecology (Liley *et al*. 2006) presents analysis of data from Studland which suggests negative effects of the number of people on the beach on the distribution of black-necked grebes (even in winter). Consideration of this site-specific information, with any additional information on activities already documented within the existing MCZ proposal, may merit a score of **MODERATE.**

Additional evidence gathered and revised assessment

In addition to the evidence in the original third-party proposal and its assessment, further evidence has been provided which demonstrates ongoing activities within or adjacent to the proposed boundary that

have the potential to impact the proposed species. The following activity generates pressures to which the species is highly or moderately sensitive, and may have the potential to impact the conservation status of the species:

- FISHING: Anchored nets/lines (Removal of non-target species)

Black-necked grebe are susceptible to bycatch from netting. Information from Southern IFCA (SIFCA 2016d *pers. comm*.) identified that anchored nets and pelagic netting do occur within the site; however the only pelagic netting is ring-netting for mullet and bass. This fishery relies on vessels being on the net at all times to which grebes are likely to respond to by swimming away from the disturbance and thus not get caught in nets. Anchored set nets do occur in the site albeit at low levels, and could catch swimming birds.

Liley *et al*. (2006) considered boat use and visitor numbers on the shore that occur in the winter in and around the area where the birds are found, in relation to disturbance. This study concluded that there was no evidence that these activities were impacting the overwintering black-necked grebe population through disturbance from vessel movements (which were largely restricted to the deeper waters of the shipping channel) and activities on the shore (eg dog walking). However they do have the potential to cause disturbance to the birds and it would seem sensible to consider reviewing the impacts these activities are having in the future.

The evidence held by, or available to, Natural England on activities (pressures and sensitivities) and management is considered to:

i) constitute a comprehensive account of the range of activities which take place within the proposed MCZ, or have an influence within it, that may have an adverse impact on the status of the species proposed for designation,
ii) demonstrate some of the levels at which some of the activities occur,
iii) describe any existing management measures in place within the MCZ,
iv) show that there are ongoing activities in the area, or other identified threats which are likely to give rise to pressures to which the species may be highly or moderately sensitive, and may have the potential to impact the conservation status of the species at the population or sub-population level,
v) consider if existing wider measures may not be sufficient to address any threats posed to the species within the third-party proposed MCZ boundary.

In addition, possible management options (appropriate for providing MCZ protection) have been identified that may reduce the effect of current or future damaging activities on the third-party proposed species.

Based on the comprehensive account provided of site specific activities and current management measures the score for this principal can be re-assessed as **MODERATE.**

6.10.3 General Management Approach

Table 120 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Activities that have influenced the GMA
Black-necked grebe	Recover to favourable condition	Black-necked grebe are exposed to a small range of activities but only anchored nets is considered to be potentially impacting grebe numbers.

Justification

A Recover GMA is being advised due to the low levels of set gill nets that are used in the site (SIFCA 2016d *pers. comm*.). It is acknowledged that interactions between this fishery and the overwintering population of black-necked grebe are likely to be very limited. However, given the small numbers of birds present (30-50), even one or two individuals being caught as bycatch could represent a significant amount of the population. WeBS data suggests that similar maximum counts have been recorded in recent years, suggesting that the population is relatively stable but it is possible bycatch (even of only a couple of birds) could be suppressing the population.

It is recognised that black-necked grebe are susceptible to disturbance. Activities causing disturbance to grebes have been considered and a study (Liley *et al.* 2006) noted that in response to disturbance grebe tend to swim away from the source of disturbance and redistribute to other areas within the site. Liley *et al.* (2006) concluded that there was no cause for concern at 'current' levels of exposure to disturbance, either from land or sea. Therefore, especially considering the perceived non-lethal effects of disturbance, the population is not considered to be vulnerable to the current levels of these activities so they have not contributed to the Recover GMA.

Consideration of supporting habitats

The GMA advice given in this document is focussed on identification of those activities that are considered to be causing or likely to cause the conservation status of the proposed bird features of the MCZ to be adversely affected. Furthermore, the focus has been entirely on those activities that are causing or could cause such adverse impacts by exerting pressures to which the proposed bird features are considered to be moderately or highly sensitive to direct impacts such as disturbance, displacement or death. This assessment does not, therefore, take account of the potential for the activities highlighted, or other activities, to have indirect impacts on the well-being of the proposed bird features via impacts on their supporting habitats.

Table 8 lists all of the marine sub-features which are listed in Natural England's marine evidence geodatabase as being present in the MCZ and considered to be likely to provide supporting habitat for the birds. It is assumed to be likely that many or most of the activities which could lead to damage or loss of these supporting habitats would be ship-based and therefore also have the potential to cause direct impacts on the birds via eg disturbance, displacement or death. The majority of activities that may already be having, or have the potential to have, significant indirect impacts on the birds via direct impacts on their supporting habitats should therefore already have been identified in this advice. There remains the possibility, however, that a full assessment of the full range of activities to which each of these potential supporting habitats is itself considered to be moderately or highly sensitive would generate a further suite of activities not considered in the GMA advice provided in this document.

Table 121 List of benthic habitat sub-features which are potential supporting habitats for black-necked grebes and are recorded as being present within the boundaries of the proposed MCZ within Natural England's marine evidence geodatabase.

Italic font denotes those for which Natural England staff who are familiar with the site have low confidence regarding their presence in any significant amount.

Subfeature Common Name (Supporting habitat)	SPA Subfeature code (GI)
subtidal macrophyte dominated sediment	A5.5
Infralittoral rock	A3

Intertidal coarse sediment	A2.1
Intertidal mixed sediments	*A2.4*
Intertidal mud	*A2.3*
Intertidal rock	A1
Intertidal sand and muddy sand	A2.2
Subtidal coarse sediment	*A5.1*
Subtidal mixed sediments	*A5.4*
Subtidal sand	A5.2
Subtidal sand	A5.2
Subtidal seagrass beds	A5.53
Subtidal seagrass beds	A5.53

6.11 Torbay third-party proposed highly mobile species MCZ

Contents

6.11.1 Background

This third-party proposal was submitted by the RSPB for the purpose of adding a seaward extension 'buffer' around the existing common guillemot colony at the Berry Head to Sharkham Point SSSI and the addition of common guillemot and black-necked grebe as new features of the existing Torbay MCZ.

The conservation aim of this third-party proposal in the case of common guillemot would be to provide a 'generic' maintenance extension to the colony protected on land through the Berry Head to Sharkham Point SSSI, so that the same population would also receive protection through the MCZ from direct impacts whilst at sea engaged in 'active' maintenance behaviours (i.e. preening, bathing, displaying, socialising etc.) close to their colony. Generic maintenance extensions have been put in place to protect breeding common guillemots (and other species) at the two largest guillemot colonies in England in which numbers of the species merit their status as a feature of a Special Protection Area (SPA). Application of the same approach at this site within an MCZ, in conjunction with third-party proposals to do the same at four other common guillemot colonies in England, would see the same approach applied to all five of the next most important breeding common guillemot colonies in England. This would make a significant contribution to delivery of a representative and replicated suite of sites that would afford protection to this species at sea in the breeding season in England. This third-party proposal meets the JNCC guidance on seaward extensions to seabird colonies supporting auks (McSorley *et al.* 2003; Annex 5 in the Advice Overview document).

The black-necked grebe is named in the 2001 SPA review (Stroud *et al.* 2001) as one of the species for which there are no aggregations of European importance within the UK and for which no SPAs have been identified in the UK. The relative scarcity of the species in the UK when considered in a European context means that even the most important sites in the UK do not hold numbers that exceed the high threshold required for the species to qualify as a feature of an SPA in its own right and that any site in the UK would add relatively little to any pan-European network of sites such as the Natura 2000 network. The 3rd SPA review (Stroud *et al.* 2016) did not consider this species and deferred to the ongoing marine SPA sufficiency review which is yet to be completed. Various aspects of the ecology of black-necked grebe in the non-breeding season suggest that, in comparison with many other "marine" species, it is relatively well suited to site-based protection. Thus, within a UK or indeed English context, the lack of any site-based protection for this species to date via the Natura 2000 network means that inclusion of this site within a national suite of MCZs with black-necked grebe as a feature, in conjunction with other sites proposed for this species, would make a significant contribution to delivery of a representative and replicated suite of sites that would afford protection to this species at sea in the winter in England.

6.11.2 Assessment against selection criteria

6.11.2.1 Ecological significance

Table 122 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**Moderate** (at best)	**Moderate** (at best) (Could be consolidated by provision of additional, more recent count data).	**High** More recent count data have confirmed the regular and continuing presence of the species in numbers that confirm the site's position as the 7th most important wintering site for the species in England and the UK.
Common guillemot	**Moderate** (in terms of site-specific evidence)	**Moderate** (in terms of site-specific evidence). This score would not be increased by application of generic evidence re ecological significance of maintenance extensions as score is influenced by the numbers of birds at this site	**High** Seabird 2000 census data indicates that this colony was the 7th most important guillemot colony in England at that time. More recent count data, where available, suggest this colony continues to be the 8th (or 7th if Flamborough and Filey considered as one) most important site in England. Work by JNCC has clearly demonstrated the persistent use by breeding auks of waters within one kilometre of their colonies for conducting critical 'active maintenance behaviour' and that this is a consistent pattern across colonies

Justification

Black-necked grebe

Original assessment

The SPA review in 2001 specifically mentioned black-necked grebe as being one of a few species for which no SPAs were selected on the grounds that 'there are no known concentrations of European importance for these grebe species'. Accordingly this species is not a named feature of any SPA. Thus, in terms of site-based protection for this species, there is no network of existing sites. Therefore, there can be no doubt that any site that is known to persistently support significant numbers of black-necked grebe would make a significant contribution to the adequacy of the (to date) non-existent network of sites for this species. However, the evidence that this site supports such numbers on a persistent basis and makes a significant contribution to supporting the life cycle of the feature was not compelling (only 6

winters in the last 20 have yielded count data). It was therefore not certain that the site is of clear ecological significance to the life-history of the species. Additional years' count data, if available, might consolidate the assessment score of **MODERATE**.

Additional evidence gathered and revised assessment

The black-necked grebe has a very wide geographic range both during the breeding season and the non-breeding season. It is fully migratory and spends the non-breeding season in different areas to those in which it breeds. Within the UK, there is a very small breeding population which breeds on small, shallow freshwater bodies such as lakes and lochs with lush fringing vegetation and dispersed submergent vegetation. The birds disperse from their breeding grounds in late summer and undergo a protracted movement, mainly at night, throughout the autumn to staging grounds and then to their wintering quarters. In the UK, the non-breeding population, which includes many individuals that do not breed in the UK, has a mainly coastal distribution, favouring shallow, inshore waters, bays and estuaries etc. Black-necked grebes are extremely inefficient fliers and are virtually flightless during the winter period. Accordingly, their movements are relatively restricted once they have arrived on their wintering grounds. The birds can remain within their restricted wintering quarters until March and so rely on the availability of safe and undisturbed feeding and roosting areas for almost half of every year in order to survive the non-breeding season and to do so in good enough body condition to complete their arduous return spring migration to the breeding grounds. Thus, shallow inshore waters, such as those proposed for inclusion within this MCZ, are of critical importance to the well-being and survival of the birds that return to them each winter.

Records of black-necked grebe sightings throughout Devon over the last seven winters have been obtained from the county bird records database. This database contains 521 records, the vast majority of which come from Torbay (222 records) and the Exe Estuary/Dawlish (212 records). There are 12 other principal locations in Devon, none of which hold anywhere near those numbers of records (Table 2). Torbay is one of the two most important sites for this species in Devon. Furthermore, over all records in this database, Torbay has the greatest average count per entry ie 3.57 birds compared to 2.53 at Start Bay, 1.33 at Kingsbridge and 1.24 at the Exe/Dawlish. In this respect also, Torbay is the most important site for the species in Devon.

Table 123 Summary of all records of sightings of black-necked grebe between 2011 and 2016 held in database provided by the Devon Bird Watching and Preservation Society.

Parent site (as listed in database)	Number of records	Mean count (individuals)	Peak count (individuals)
Exe estuary and Dawlish	212	1.24	3
Kingsbridge	6	1.33	3
N W Coast	1	1	1
Prawle area	1	1	1
Seaton Bay	7	1	1
South Huish Area	5	1	1
Start Bay	55	2.53	7
Tamar estuary complex	2	1	1

Parent site (as listed in database)	Number of records	Mean count (individuals)	Peak count (individuals)
Taw/Torridge estuary	3	1	1
Teign Area	1	2	2
Teign estuary and Teignmouth	2	2	2
Thurlstone Area	2	1	1
Torbay	222	3.57	20
West Devon	2	1	1

This dataset has provided count data for Torbay in each of the last six winters prior to the current winter ie 2010-11 to 2015-16 (Table 3). These data provide evidence of the continued presence of the species in the site in the most recent winters and a five year mean peak count of 9.8. This maintains the site's current rank order (ie 7th) in the WeBS online ranking of all sites supporting this species in England (and across the UK as a whole).

Table 124 Summary of the most recently available six years of winter records of black-necked grebe in Torbay. Source: records provided by the Devon Bird Watching and Preservation Society

Season	Number of records	Average count (individuals)	Peak count (individuals)
2010-11	34	4.91	20
2011-12	51	4.00	10
2012-13	41	3.00	11
2013-14	29	2.52	11
2014-15	40	3.40	9
2015-16	27	3.31	8

There is no question regarding the reliability of this data source or any issue regarding the age of the data. The site clearly consistently provides supporting habitats or processes for the species and in conjunction with the third-party proposals for Studland and Carrick Roads, provides good replication of sites for the species in the south-west of England. In the absence of any other site-based protection for this species in the UK, and the importance of this site in an English and UK context, ecological significance can be re-assessed as **HIGH**.

The recent steady decline in average and peak numbers in recent years (Table 2) from a highpoint in 2010/11has no clear explanation. There is speculation that this may be connected to changes to the management of scallop dredging within Torbay (M. Langman pers. comm.). The short-term nature of the decline should not be considered as evidence of declining ecological significance.

Common guillemot

Original assessment

Site-specific evidence was provided that the Berry Head colony is an important site (it is a SSSI) and has been for some time (at least since 1986). Numbers of common guillemot on the site have been increasing steadily since 1986 reflecting the generally positive population trend for this species across England. The colony counts represent a significant body of empirically-based site-specific evidence that this site is amongst the larger guillemot colonies in the south west region. However, at least 3 other SSSI colonies in this region support greater numbers of this species (as indicated in other third-party proposals), and so the overall assessment of ecological significance of this site at this wider scale, and nationally is scored

as **MODERATE**.

In terms of the evidence regarding the ecological significance of the waters proposed as part of the amendment to the MCZ boundary, the evidence provided was based on two pieces of work.

First, there were the outputs of statistical models based on analysis of seabird tracking data. The models are generic and not based on any site-specific tracking data from Berry Head, and next to no information was provided regarding the nature and validation of the model (and hence the confidence we can have in it). Nonetheless, it generates, as expected, a distribution map which indicates that half of the time spent by common guillemot at sea is spent in a sea area immediately around the colony, with decreasing amounts of time spent further away. However, while this indicates the high ecological significance of waters around colonies to the birds of that colony, it provides no evidence in support of the particularly high ecological significance of the waters within the boundary at one kilometre offshore in comparison with that outside the boundary.

This lack of any site-specific information regarding the ecological significance of the waters within the boundary merited a score of **LOW**. In combination with the colony count data the overall assessment of ecological significance based on site specific data may be considered **MODERATE**.

The argument in favour of the ecological significance of the proposed area of waters to be included within the MCZ is largely based on the second strand of evidence i.e. expert judgement which has seen 'generic' maintenance extensions of this type applied to many SPA seabird colonies around the UK, as a matter of best practice. That approach has a reliable, empirical evidence base, based on research conducted by JNCC and published in various JNCC reports and referenced in the third-party proposal. This can be considered a high quality data source (albeit not site-specific) in regard of the ecological significance of maintenance extensions to the birds at a given colony. However, when considering ecological significance in a wider context, the relative importance of the numbers of birds at the colony must be considered and that led to the assessment given here.

Additional evidence gathered and revised assessment

A review of seabird colony count data (see Annex 6 in the Advice Overview document) reveals that based on the national Seabird 2000 census data, the number of guillemots at the Berry Head to Sharkham Point SSSI colony at that time (711 individuals) made this site the seventh largest guillemot colony in England, or fifth largest site not afforded protection as an SPA in England. Since Seabird 2000, numbers of Common guillemot have increased at Berry Head to Sharkham Point SSSI (latest count in 2016 being 1,224) but have also increased at many other sites. Based on more recent count data at colonies, where these are available, Berry Head to Sharkham Point SSSI now holds the 8th largest guillemot colony in England (or seventh largest considering that colonies at Filey are now incorporated into the larger Flamborough & Filey Coast pSPA).

Maintenance extensions have been proposed within the Flamborough and Filey Coast pSPA and for the Farne Islands colony within the surrounding Northumberland Marine pSPA. Thus, the ecological significance of providing protection to breeding common guillemots by way of generic maintenance extensions has been acknowledged at the two largest common guillemot colonies in England. The third-party proposal to do so at the Berry Head to Sharkham Point SSSI within the Torbay MCZ would similarly be of considerable ecological significance to the birds at this colony, and of wider ecological significance to the species in England given that, aside from the SPAs already afforded protection in this way, this colony is fifth largest common guillemot colony in England.

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 of the Advice Overview document. In summary, McSorley *et al.* (2003) present the results of

analyses of repeated boat-based transect surveys conducted in 2001 around six seabird colonies. During these surveys the locations of approximately 17,000 common guillemots and 1,400 razorbills engaged in active maintenance behaviours were mapped. The density of these birds was analysed as a function of increasing distance from the colonies and revealed a strikingly consistent pattern of elevated densities within one kilometre of each colony in comparison to much reduced densities beyond that distance (McSorley *et al.* 2003, and see Annex 5 in the Advice Overview document). This evidence presented by McSorley *et al*. (2003) is considered to: i) constitute a significant body of reliable, empirically-based evidence supporting the conclusion that these areas of water have clear ecological significance to the life-histories of the species for designation, ii) provide evidence that is based on at least one high quality source of data and iii) make a convincing case that for auks, these waters make a significant contribution to the life cycle of the species due to their role in providing supporting habitats or processes.

Thus, it is considered that the provision of protection of waters within a one kilometre buffer area around the common guillemot colony at Berry Head to Sharkham point SSSI via the Torbay MCZ will make a contribution to both the representivity and replication of sites within the MPA network. This reflects both the size of the colony in an English context, and its position in the south-west of England. It is on one hand far from the only two English colonies where such measures are nearer to being implemented (Flamborough & Filey Coast and Northumberland Marine pSPAs), but on the other hand is near several other common guillemot colonies in south-west England where such MCZ third-party proposals are being considered. All of this is re-considered to merit a score of **HIGH** in regard to Principle 1 Ecological Significance.

6.11.2.2 Persistence

Table 125 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	Moderate	Moderate	**High** Historical records from 1970s – 1990s confirm species' persistent presence in Torbay. More recent count data have confirmed the regular and continuing presence of the species in numbers that confirm the site's position as the seventh most important in England and across the UK as a whole. Examination of sightings records throughout Devon confirm that numbers of records from Torbay far exceed those from all other sites in Devon with the sole exception of the Exe/Dawlish.
Common guillemot	Moderate (in terms of site-specific evidence), High (in terms of generic information underpinning the third-party	High	**High** Seabird 2000 census data indicates that this colony was the seventh most important guillemot colony in England at that time. More recent count data, where available, suggest this colony continues to be the eighth (or seventh if Flamborough and Filey considered as one) most

	proposal)		important site in England. Work by JNCC has clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.

Justification

Black-necked grebe

Original assessment

The evidence regarding persistent use of the site was largely based on WeBS data, supported by other records (PANACHE and local records). In combination these data sources yield population counts in 6 years of the last 20. Four of these years have been within the last six years. However, no data were presented for the two most recent winters or winters between 2004 and 2010. Thus, while there was some evidence that the area supports persistent presence of the feature at higher densities than surrounding waters (Torbay is listed as the seventh most important site for the species in the online WeBS database), the lack of consistent evidence to this effect left the issue open to some degree of question.

Additional evidence gathered and revised assessment

A review of two historical reports (Lock & Robins 1994; Slade 1996) has provided evidence that Torbay has supported the persistent presence of black-necked grebes at similar levels to those seen today since the 1970s. A review of existing data on inshore waterbird distribution in south-west England, spanning the period 1979 – 1991, was originally undertaken by the RSPB (Lock & Robins 1994). This reported a peak count of black-necked grebe over these years of 14 individuals and a mean count of 7 individuals. Following this, Slade (1996) conducted systematic surveys in the winter of 1994/95 of the areas identified, as well as some 'control areas'. Slade (1996) reports a peak count of 9 black-necked grebes in Torbay and an average total count of 4.4 individuals in that winter in Torbay.

A review of the additional black-necked grebe records provided by the Devon Birdwatching and Preservation Society confirm that of all sites in Devon where the species has been recorded in winter, Torbay is the most important both in terms of numbers of sightings recorded and the average and peak numbers recorded in each of the last several winters (Table 2). This additional information has confirmed the relative importance of the MCZ within a wider county context and clearly indicates the persistent presence of the species at higher densities than on the remainder of the coastline of Devon. This fact sits alongside the relative importance of the site in the national context, as apparent from the WeBS online database http://app.bto.org/webs-reporting.

Furthermore, examination of the place names and/or national grid references given for each of the 222 records linked to Torbay reveals that all bar five records relate to locations that lie inside the existing MCZ boundary, confirming the RSPB's assertion. The exceptions are sightings at Brixham Harbour (two records each of two birds) Mansands (one record of one bird) and Torquay Harbour (two records each of one bird). Some 11 records which, based on the use of coarse-scale grid references, appear when mapped to lie above Mean High Water and so outside the MCZ boundary, clearly were made inside the boundary on the basis of the place names associated with them in the database. This significantly improves our confidence that the MCZ captures the vast majority of sightings in and around Torbay.

Taken altogether, this additional evidence confirms the persistent presence of the feature at higher densities than the surrounding waters at a local, county and indeed national scale. This suggests that the score for this principle can be re-assessed as **HIGH.**

Common guillemot

Original assessment

There was good reliable evidence of the long-term presence of this feature in the adjacent SSSI. Common guillemot was present when notified in 1986 and reliable evidence is given regarding the growing population size of the species at the adjacent SSSI (1986-2012). This could merit **HIGH** confidence of persistence at higher densities. However, this information is not direct evidence of persistent usage of sea areas within the boundary at higher densities than surrounding waters over that period. In terms of the evidence regarding the persistent presence of common guillemot in the waters proposed as part of the amendment to the MCZ boundary being at higher density than areas outside the boundary, the evidence provided was based on two pieces of work.

First, there were the outputs of statistical models based on analysis of seabird tracking data. The models are generic and not based on any site-specific tracking data from Berry Head, and next to no information was provided regarding the nature and validation of the model (and hence the confidence we could have in it). Nonetheless, it generates, as expected, a distribution map which indicates that half of the time spent by common guillemot at sea is spent in an area immediately around the colony, with decreasing amounts of time spent further away. However, while this indicates the persistent presence at higher density of birds closer to their colony than further away, it provided no evidence in support of there being particularly high densities in the waters within the boundary at one kilometre offshore in comparison to that outside the boundary. This combined with the site-specific colony counts led in combination to a score of **MODERATE.**

The case for there being persistent elevated densities within the proposed area of waters to be included within the MCZ was largely based on the second strand of evidence ie expert judgement which has seen 'generic' maintenance extensions of this type applied to many SPA seabird colonies around the UK, as a matter of best practice. That approach has a reliable, empirical evidence base, based on research conducted by JNCC and published in various JNCC reports and referenced in the third-party proposal. This can be considered one high quality data source (albeit not site-specific) which would lead to an assessment of **HIGH** confidence in the occurrence of persistently high densities inside the boundary.

Additional evidence gathered and revised assessment

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 in the Advice Overview document. As noted above, this study provides the empirical survey data and analysis demonstrating the consistent within species and across colonies occurrence of persistently higher densities of auks engaged in active maintenance behaviour in waters within one kilometre of their breeding colony than further offshore. This evidence presented by McSorley *et al*. (2003) is considered to: i) constitute a significant body of reliable, empirically-based evidence to support the conclusion that the area of sea within one kilometre of a guillemot colony is likely to have persistent presence at higher densities of the species than the surrounding waters and ii) provide one high quality source of data with large and representative sample sizes, collected over an adequate period of time and analysed according to best practice that yields outputs that have low levels of uncertainty.

Thus, this information, together with the fixed location of what is the seventh largest common guillemot colony in England, provides a compelling case for the persistent presence at higher densities of guillemots during the breeding season within the proposed one kilometre buffer around the Berry Head to

Sharkham Point SSSI (to be included within the Torbay MCZ) than in other waters immediately local within Torbay, regionally across south-west England and indeed in comparison to waters around most of the rest of England. This suggests that the score for this principle can be re-assessed as **HIGH.**

6.11.2.3 Site size and delineation

Table 126 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**Not met**	**Not met**	**High** Examination of the place names and/or national grid references given for the 222 sightings listed in the Devon County Bird records database that relate to Torbay reveal that all bar five of these sightings, based either on the place names given and/or grid references provided, lie within Torbay MCZ.
Common guillemot	**Low** (site specific). **High** (generic) (though ENG principles re boundary setting not strictly applied)	**High**	**High**. Work by JNCC has clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.

Justification

Black-necked grebe

Original assessment

The third-party proposal asserted that all sightings of black-necked grebe are within the boundary of the current MCZ. However, unlike the third-party proposal for Carrick Roads, no spatial data were presented to support that assertion. The evidence was therefore insufficient to allow any conclusion to be reached that the size and shape of the area included within the existing MCZ boundary was appropriate. Therefore led to a score of **NOT MET.**

Additional evidence gathered and revised assessment

Examination of the specific place names associated with all records in the database provided by Devon Birdwatching and Preservation Society that are linked to Torbay reveals that every location name bar three (Brixham Harbour, Mansands and Torquay Harbour) refer to places that lie inside the existing MCZ boundary, confirming the RSPB's assertion. Together, these three locations account for just 5 of the 222 records ascribed to Torbay. A map of the locations of all records associated with Torbay in that database, and with grid references associated with them, confirms that the vast majority of these specific locations fall within the existing MCZ too (Figure 1). Some 11 of these records which, based on the use of coarse-scale grid references appear, when mapped, to lie above Mean High Water and so outside the MCZ boundary (Figure1), clearly were made inside the boundary on the basis of the place names associated

with them in the database.

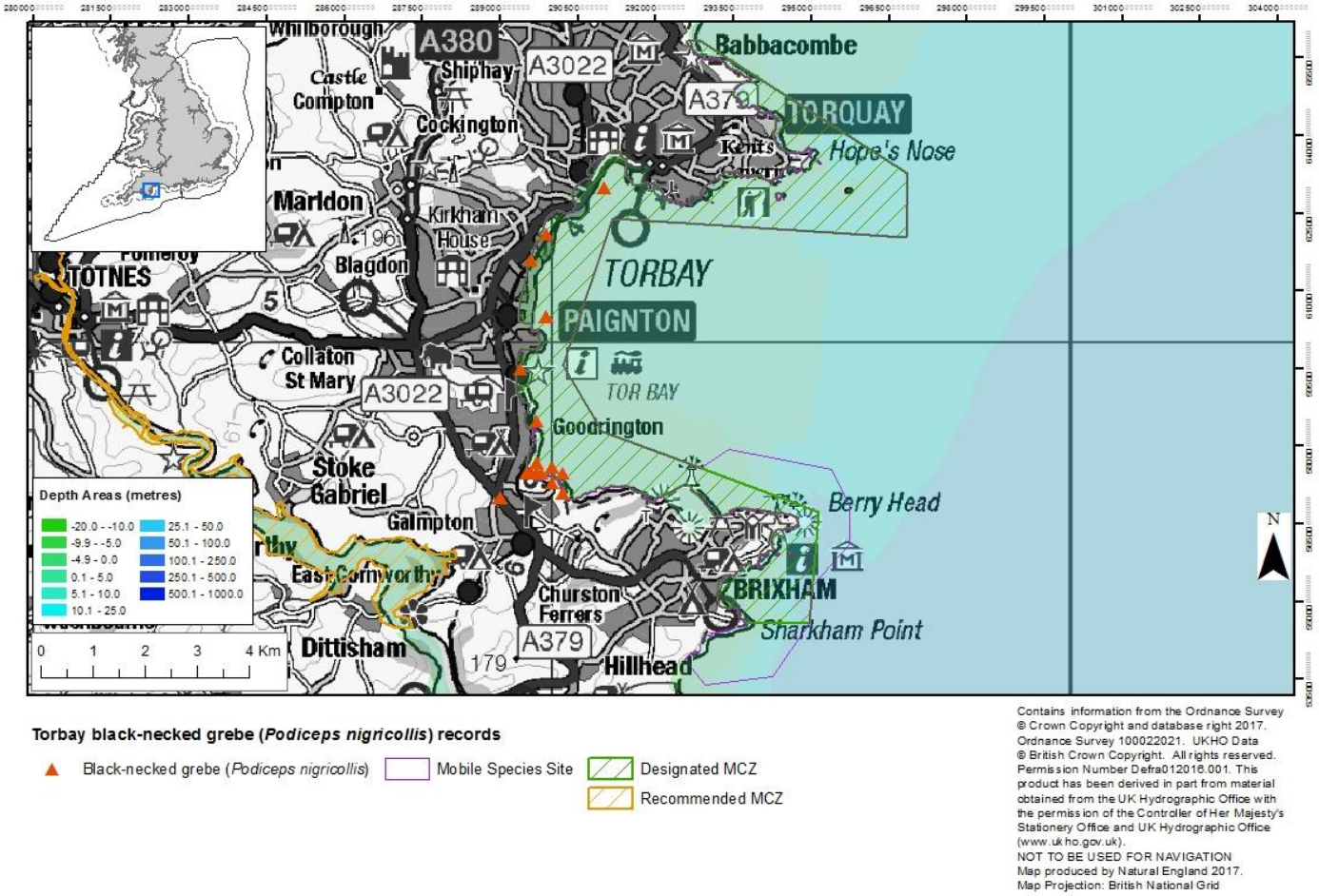

Figure 1 Location of each record of black-necked grebe since 2011 within the database provided by the Devon Birdwatching and Preservation Society, associated with Torbay, and with a national Ordnance Survey grid reference. Green hatched area depicts the boundary of the existing Torbay MCZ. Note that some of the grid references were only to four figures, including the most northern of those mapped here. This location relates to two sightings of birds recorded as being in Torquay harbour (and hence outside the MCZ boundary) although the location of the dot shown here (outside Torquay harbour and hence inside the MCZ boundary) reflects the use of the coarse scale grid reference provided with these two particular records. Conversely, some other dots such as that in the extreme south-west, which appear to lie well in-land, reflects the use of coarse-scale grid references in the database while the associated place names e.g. Broadsands clearly indicate the sightings were made within the marine environment inside the MCZ.

Furthermore, Mike Langman, who has provided many of the sightings within the County Records database has provided the following information on the distribution of the species "*The grebes used to prefer the Preston/Paignton/Goodrington area and always fairly close to the shore approx. 600-700 metres max distance, rarely do they seem to venture into deeper water. The underlying substrate here is sand with apparently some thinly distributed seagrass (*Zostera marina*). However in recent years the better counts have pretty much all been from the Broadsands area…. The substrate is more mixed here with denser Seagrass beds, rocky outcrops and headlands surrounded by a sandy perhaps even silty bottom."* A map of the known location of seagrass beds in the area confirms that almost all mapped sightings shown in Figure 1, occur over seagrass beds (Figure 2). Examination of the bathymetry of this region provides further supporting information that the MCZ encompasses an area of shallow water within the embayment (Figure 2).

Taken together, the additional bird sightings information, the information on supporting habitats, bathymetry and the existence of the headlands to the north and south of the bay, provide a consistent evidence base that the MCZ encompasses a shallow and relatively sheltered embayment containing suitable supporting habitats for black-necked grebes which predominantly occur close inshore within the embayment. This provides confidence that the size and delineation of the existing MCZ is appropriate to ensure the viability of the site for this feature. The evidence base is considered to be reliable and recent, based on good quality sightings data gathered over numerous years and is considered to justify that the score for this principle can be re-assessed as **HIGH.**

Common guillemot

Original assessment

All the points made above in relation to Principle 2 (Persistence) regarding the nature of the site specific and generic evidence in support of the boundary lying at one kilometre offshore apply here too. Thus confidence in site-specific information regarding the precise boundary location was **LOW** whereas confidence in the empirically-based but generic evidence regarding the boundary was **HIGH**. Note that the proposed boundary does not strictly adhere to ENG principles and could be redrawn to use fewer straight lines (although that would make it somewhat larger).

Additional evidence gathered and revised assessment

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 in the Advice Overview document. As described above, this study provides the empirical survey data and analysis demonstrating the consistent within species and across colonies occurrence of persistently higher densities of auks engaged in active maintenance behaviour in waters within one kilometre of their breeding colony than further offshore. This evidence presented by McSorley *et al.* (2003) is considered to: i) constitute a strong evidence base to demonstrate that the size and shape of the area included within the proposed MCZ boundary is appropriate to that required to ensure the viability of the site; ii) provide a significant body of reliable, recent, empirically-based evidence on which to determine the location of the proposed MCZ boundary, iii) be based on underlying data that are considered to have good quality with large and representative sample sizes, appropriately collected and analysed according to best practice and to yield boundaries that have low levels of uncertainty in their construction.

There is also some additional site-specific evidence regarding the distribution of rafting common guillemots near this colony (Hughes *et al*. in prep.). This study was conducted over three years (2013-2015) with several hundred hours of observations being made in the months of May-July of each year. The study sought to record the distribution of birds on the sea around the colony and the frequency and nature of anthropogenic activities that might disturb the birds and to record their responses to such stimuli. The study found that the frequency of sightings of rafting common guillemots was highest closest to the colony and declined with distance out to 500 m from the colony. Nonetheless, rafting birds were recorded at this distance and it is highly likely that rafting common guillemots also occurred beyond 500 m from the colony as that was approximately the limit of the survey area within which the study focussed its recording of the locations of rafting birds.

It is proposed here that the seaward boundary to the one kilometre buffer presented in RSPB's proposal should be amended slightly in two respects. Firstly, to exclude the area within the one kilometre buffer around the colony that overlaps with Brixham harbour. This reflects the exclusion of Brixham harbour from the original MCZ boundary coupled with the fact that this area is highly unlikely to support either of the 2 additional features being considered here: common guillemot are considered very unlikely to enter an operational commercial harbour to engage in maintenance activities, and the Devon Birdwatching and

Preservation Society's database reveals that of 222 records of black-necked grebes in Torbay only 2 (each of 2 individuals) occurred inside Brixham harbour. Secondly, it is proposed here to define the remainder of the seaward boundary around Berry Head by a series of straight lines between nodes rather than a series of arcs. The latter amendment brings the setting of the seaward boundary more in line with the guidelines regarding boundary setting for highly mobile species MCZs outlined in JNCC and Natural England (2016) and also with the recommendations set out in McSorley *et al.* (2003).

In the light of the above, the score for this principle can be re-assessed as **HIGH.**

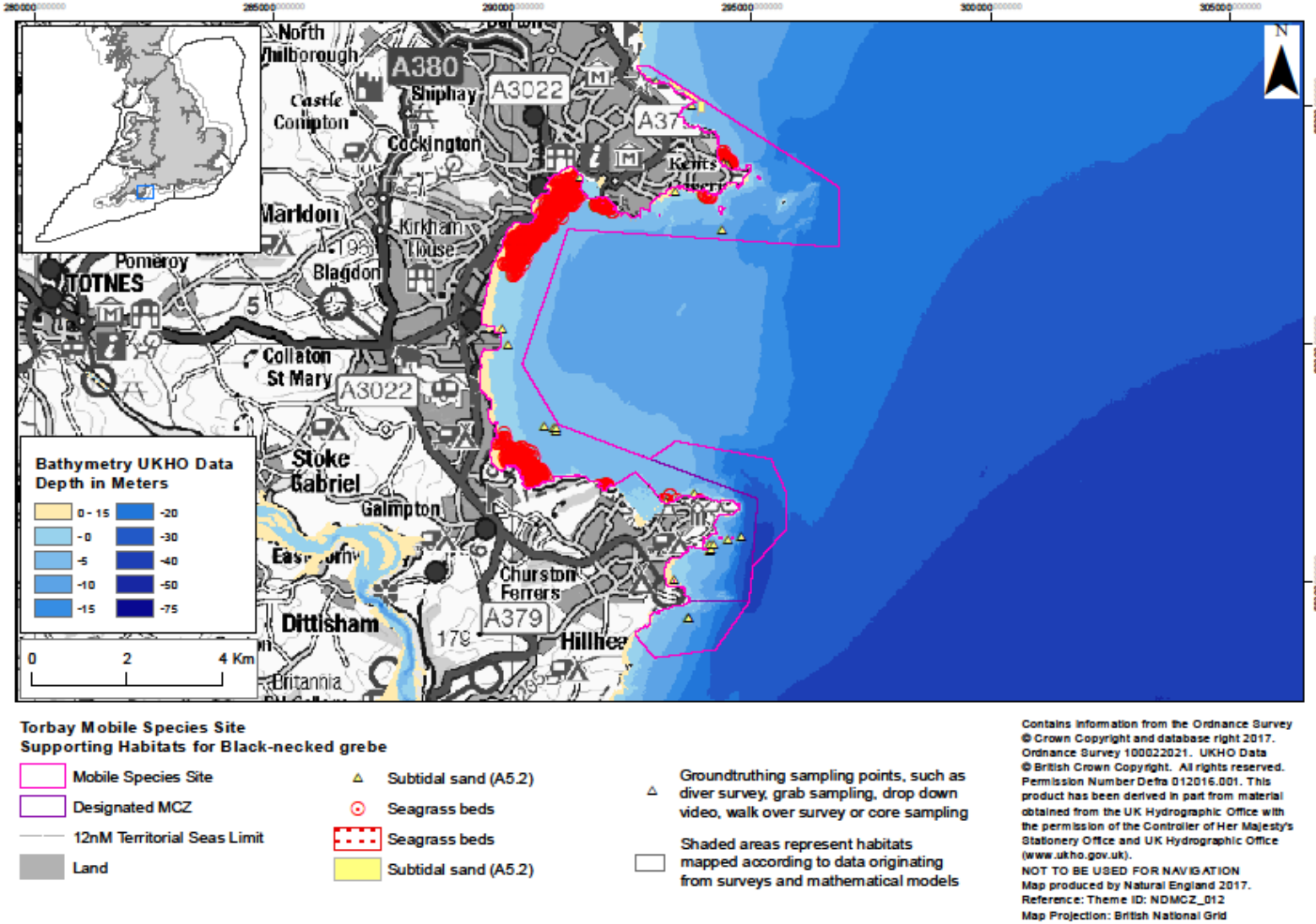

Figure 2 The distribution of known locations of seagrass beds within the Torbay area (red dotted polygons) alongside the bathymetry contours around the whole of Torbay

6.11.2.4 Appropriateness of Management

Table 127 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Black-necked grebe	**Low**	**Low**	**Moderate**
Common guillemot	**Moderate**	**Moderate**	**Moderate**

Justification

Black-necked grebe

Original assessment

The third-party proposal asserted that black-necked grebe is 'likely to be threatened' by disturbance and 'has been known to be threatened' by bycatch in the area. However, little or no direct evidence of the occurrence of the activities leading to these threats was provided. There was little or no information on the levels at which these activities occur. There was evidence that netting takes place in the general area and that a voluntary code of conduct to avoid the risk of bycatch of scarce wintering diving birds (such as black-necked grebe) is in place already. This could only be considered to be at best a superficial account of the range of activities which take place within the proposed MCZ. It was stated that enshrining this voluntary agreement into local legislation would provide greater certainty. Thus, possible management options had been identified but it was not clear if indeed these would reduce any damaging effects over and above the existing voluntary code. Nonetheless, such management options are appropriate for MCZ based protection.

Natural England reviewed its GIS evidence and this identified a number of activities which occur (2009-2013) within the proposed site boundary. However, given the nature of that information it was not clear whether further consideration of this information would allow an increase in the score for Principle 4 (Appropriateness of Management) for black-necked grebe. This led to a score of **LOW**.

Additional evidence gathered and revised assessment

In addition to the evidence in the original third-party proposal and its assessment, further evidence has been provided which demonstrates ongoing activities within or adjacent to the proposed boundary that have the potential to impact the species. The following activities generate pressures to which the species is highly or moderately sensitive, and may have the potential to impact the conservation status of the species:

- FISHING: Anchored nets/lines (removal of non-target species)
- FISHING: Pelagic fishing (or fishing activities that do not interact with sea bed) (removal of non-target species)

Black-necked grebe are susceptible to bycatch from anchored nets and pelagic fishing. Data from Devon Birdwatching and Preservation Society (2011-2015) show that black-necked grebe have been recorded in Torbay between the start of November and the end of March and that they have been seen close to the

shore off the beaches between Torquay harbour and Elberry Cove. Devon and Severn IFCA's 2016 report 'Fishing Activities Currently Occurring in the Lyme Bay & Torbay SCI[22]' (Site of Community importance) states that gill, trammel and entangling nets occur in the area. Netting targets a number of different species including Dover sole, rays, cod, plaice, bass, ling, saithe, pollock, and cuttlefish. Low levels of drift netting may also occur within the site. As noted in our original assessment there is a voluntary code of conduct in place with six netting fishermen whereby static cuttle gear or fixed nets are not set before dusk and are hauled before dawn between 1st November - 1st April, which is when the birds are present. This code of conduct is in place between Roundham Head and Fishcombe Point (M. Langman 2016, pers. comm.). However, this only covers part of the area where the birds have been recorded. Birds have also been recorded north of Roundham Head up to Torquay Harbour and netting may still occur in these areas. The existence of the voluntary code of conduct suggests that bycatch has been an issue for overwintering birds in the past. We are not aware that any assessment of the effectiveness of the code of conduct has been conducted at this stage. There is no current known management of pelagic fishing in the site. Due to the small number of birds present in this site even a small amount of bycatch would mean that the pressure benchmark (increase above the natural annual mortality of the site's population) would be reached and the conservation status of the species could be impacted.

There are a variety of recreational activities such as dog walking that occur in the winter in and around the area where the birds are found. Although there is currently no evidence that these activities are impacting the population of black-necked grebes, they do have the potential to cause disturbance to the birds and it would seem sensible to consider reviewing the impacts these activities are having in the future.

The evidence held by, or available to, Natural England on activities (pressures and sensitivities) and management is considered to: i) constitute a comprehensive account of the range of activities which take place within the proposed MCZ, or have an influence within it, that may have an adverse impact on the status of the species proposed for designation, ii) demonstrate some of the levels at which some of the activities occur, iii) describe any existing management measures in place within the MCZ, iv) show that there are ongoing activities in the area, or other identified threats which are likely to give rise to pressures to which the species may be highly or moderately sensitive, and may have the potential to impact the conservation status of the species at the population or sub-population level, v) consider if existing wider measures may not be sufficient to address any threats posed to the species within the third-party proposed MCZ boundary. In addition, possible management options (appropriate for providing MCZ protection) have been identified that may reduce the effect of current or future damaging activities on the third-party proposed species.

Based on the comprehensive account provided above of site specific activities and current management measures the score for this principal can be re-assessed as **MODERATE.**

Common guillemot

Original assessment

The third-party proposal provided evidence that fishing occurs in the general area and that certain fishing restrictions are in place within certain parts of the existing MCZ. Natural England is aware that in the

[22] Sites of Community Importance (SCIs) are sites that have been adopted by the European Commission but not yet formally designated by the government of each country.

Lyme Bay and Torbay SAC, Devon & Severn IFCA have a mobile fishing byelaw, potting byelaw and diving byelaw.

The third-party proposal referred to the Berry Head (Area of Special Protection) Order 1988 which affords protection to the guillemot colony, including from disturbance while they are breeding, by preventing access to the water immediately adjacent to the colony between March and July (see other comments below). It stated that this area is small relative to the MCZ third-party proposal and has not been enforced. Thus, there is a case that additional protection afforded by a more extensive MCZ would help to manage such disturbance over a more appropriate area.

The third-party proposal also referred to a site-specific study of disturbance to the colony caused by vessel movements close to the colony and suggested management recommendations including speed restrictions, codes of conduct and buffer zones. The evidence in regard to levels of activity and where and when they occur was not exhaustive though and the detail provided did not merit a score of high. However, an account was given of the activities to which the species is sensitive and of existing management measures (fishing restrictions) and possible management measures (disturbance mitigation measures) all of which would be appropriate for MCZ-based protection. That was considered to merit a score of **MODERATE**.

Additional evidence gathered and revised assessment

In addition to the evidence in the original third-party proposal and its assessment, further evidence has been provided which demonstrates ongoing activities within or adjacent to the proposed boundary that have the potential to impact the species. The following activities generate pressures to which the species is highly or moderately sensitive, and may have the potential to impact the conservation status of the species:

- FISHING: Anchored nets/lines (Removal of non-target species)
- FISHING: Pelagic fishing (or fishing activities that do not interact with sea bed) (Removal of non-target species)
- FISHING: Diving (Visual disturbance)
- COMMERCIAL SHIPPING (operation): Vessel movements (Above water noise, Visual disturbance)
- RECREATION: Powerboating or sailing with an engine: launching and recovery, participation (Visual disturbance, Above water noise)
- RECREATION: Non-motorised water craft (e.g. kayaks, windsurfing, dinghies) (Visual disturbance, Above water noise)
- RECREATION: Sailing without an engine: launching and recovery, participation (Visual disturbance, Above water noise)

Common guillemots are susceptible to bycatch. Low levels of anchored netting are known to occur to the south of Berry Head (Devon & Severn IFCA 2015). Devon & Severn IFCA (2016, pers. comm.) confirmed that there is at least one netter in the area around Berry Head who follows the voluntary code of conduct for netting in Torbay. Under the voluntary code of conduct fixed nets are not set before dusk and are hauled before dawn between 1st November and 1st April, between Roundham Head and Fishcombe Point (M. Langman 2016, pers. comm.). This is outside the area that has been proposed for common guillemot. Some pelagic fishing is known to occur within the site, and this is likely to be at a higher intensity to the north of Berry Head (Natural England 2012b; Vanstaen & Breen 2014). Low levels of drift netting are known to occur within the Lyme Bay to Torbay SCI (Devon & Severn IFCA 2015) although it is not certain

if this occurs within the area proposed for common guillemot.

There are low levels of commercial diving in Torbay (Devon & Severn IFCA 2015) and the area is also popular for recreational diving. This occurs off Sharkham Point, around the Mew Stone and Cod Rock which are close to the guillemot colony and around Brixham harbour and Shoalstone Point (SeaTorbay 2013). Devon and Severn IFCA have a Diving Permit byelaw in place which requires all commercial and recreational divers who remove crab, lobster, or scallops to have a permit. SeaTorbay have also published a Diving Code of Conduct.

Common guillemot are susceptible to visual and noise disturbance generated by the movement of both commercial and recreational crafts including non-motorised water craft. The area inshore of a line between the Mew Stone and Berry Head is designated as a Special Area of Protection which prevents access by mariners between 25th March and 31st July. However the Torbay Coastal Zone Management Plan 2013 – 2018 (SeaTorbay 2013) has identified a lack of enforcement with regards to this order. SeaTorbay have published codes of conduct for sail sports, paddle sports and powercraft highlighting this order. However, a recent study investigating anthropogenic disturbance to the guillemot colony at Berry Head (Hughes *et al*. in prep.) found that fishing boats, motor boats, sailing boats, canoes, paddleboards and jetskis all entered the waters around the colony (between the Mew Stone and Berry Head and out to 500 m) when the birds were present. The area surveyed includes the whole of the Special Area of Protection.

The evidence held by, or available to, Natural England on activities (pressures and sensitivities) and management is considered to: i) constitute a comprehensive account of the range of activities which take place within the proposed MCZ, or have an influence within it, that may have an adverse impact on the status of the species proposed for designation, ii) demonstrate some of the levels at which some of the activities occur, iii) describe any existing management measures in place within the MCZ, iv) show that there are ongoing activities in the area, or other identified threats which are likely to give rise to pressures to which the species may be highly or moderately sensitive, and may have the potential to impact the conservation status of the species at the population or sub-population level, v) consider if existing wider measures may not be sufficient to address any threats posed to the species within the third-party proposed MCZ boundary. In addition, possible management options (appropriate for providing MCZ protection) have been identified that may reduce the effect of current or future damaging activities on the third-party proposed species.

Based on the comprehensive account provided above of site specific activities and current management measures the score for this principal remains as **MODERATE.**

6.11.3 General Management Approach

Table 128 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Activities that have influenced the GMA
Black-necked grebe	Recover to favourable condition	Bycatch or removal of non-target species caused by fixed nets and pelagic nets has the potential to be causing an impact on the population in the site and may require some sort of management if the third-party proposal goes forward for this feature. For more information see below.
Common guillemot	Maintain in favourable condition	A Maintain GMA has been proposed due to a SSSI condition assessment of 'favourable condition' for the same population of birds. For further information on activities/pressures which may

		be of concern in the future if impact increases please see below.

Justification

Black-necked grebe

A Recover GMA has been proposed due to the potential for bycatch from fixed netting and pelagic netting which are known to occur in the site. Devon and Severn IFCA's 2016 report 'Fishing Activities Currently Occurring in the Lyme Bay & Torbay SCI' states that gill, trammel and entangling nets occur in the area. Netting targets a number of different species including Dover sole, rays, cod, plaice, bass, ling, saithe, pollock, and cuttlefish. Low levels of drift netting may also occur within the site. Black-necked grebe overwinter in Torbay. Devon Birdwatching and Preservation Society data (2011-2015) show that black-necked grebe have been recorded in Torbay between the start of November and the end of March and that they have been seen close to the shore off the beaches between Torquay harbour and Elberry Cove. A voluntary code of conduct is in place with six netting fishermen whereby static cuttle gear or fixed nets are not set before dusk and are hauled before dawn between 1st November and 1st April, which is when the birds are present. This code of conduct is in place between Roundham Head and Fishcombe Point (M. Langman 2016, pers. comm.). However, this only covers part of the area where the birds have been recorded. Birds have also been recorded north of Roundham Head up to Torquay Harbour and therefore netting may still occur in these areas. The existence of the voluntary code of conduct suggests that bycatch has been an issue for overwintering birds in the past. We are not aware that any assessment of the effectiveness of the code of conduct has been conducted at this stage. There is no current known management of pelagic netting in the site. Due to the small number of birds present in this site even a small amount of bycatch would mean that the pressure benchmark (increase above the natural annual mortality of the site's population) would be reached and the conservation status of the species could be impacted.

Common guillemot

There is direct condition evidence from Berry Head to Sharkham Point SSSI condition assessment which confirms that this feature is in favourable condition. A GMA of Maintain is advised using this direct condition evidence, and as a result a vulnerability assessment is not required (as a proxy of condition). The draft MCZ and SSSI designation refers to the same population of birds. The SSSI condition assessment for common guillemot was carried out in 2009 and shows that the feature is in favourable condition. The population count in spring 2009 was 1,440 individuals. There was no loss to the extent of the cliffs on which the birds breed, and as the population had increased and was occupying approximately the same extent of cliff as previously there was no decline in density. Recent population counts show that the population has stayed relatively stable with 1,350 individuals recorded in 2013,1,480 in 2014 and 1,255 in 2015 (TCCT 2017). The latest population count in June 2016 recorded 1,224 individuals (TCCT 2017). The site is located on Berry Head National Nature Reserve. There has been no loss of cliff habitat and therefore density will have also remained relatively stable. As a result the SSSI feature common guillemot is still regarded to be in favourable condition and therefore the proposed GMA for this feature is Maintain.

Although the population is currently considered to be in favourable condition and therefore to have a GMA of Maintain, there are a variety of activities which occur in the area around the colony that have the potential to impact the conservation status of the species in the future due to the sensitivity of the birds to bycatch, visual disturbance and noise disturbance associated with these activities. As such future monitoring of these activities would seem sensible. These activities are: fixed netting; pelagic netting; diving (commercial & recreational); commercial vessel movements; recreational vessel movements (both with and without engines) and non-motorised water craft such as kayaks and stand up paddleboards.

Low levels of anchored netting are known to occur to the south of Berry Head (Devon & Severn IFCA 2015). Devon & Severn IFCA (2016, pers. comm.) confirmed that there is at least one netter in the area around Berry Head who follows the voluntary code of conduct for netting in Torbay. Under the voluntary code of conduct fixed nets are not set before dusk and are hauled before dawn between 1st November and 1st April, between Roundham Head and Fishcombe Point (M. Langman 2016, pers. comm.). However, this is outside the area that has been proposed for common guillemot. Some pelagic fishing is known to occur within the site, and this is likely to be at a higher intensity to the north of Berry Head (Natural England 2012b; Vanstaen & Breen 2014). Low levels of drift netting are known to occur within the Lyme Bay to Torbay SCI (Devon & Severn IFCA 2015) although it is not certain if this occurs within the area proposed for common guillemot.

There are low levels of commercial diving in Torbay (Devon & Severn IFCA 2015) and the area is also a popular area for recreational diving. This occurs off Sharkham Point, around the Mew Stone and Cod Rock which are close to the guillemot colony, and around Brixham harbour and Shoalstone Point (SeaTorbay 2013). Devon and Severn IFCA have a Diving Permit byelaw in place which requires all commercial and recreational divers who remove crab, lobster, or scallops to have a permit. SeaTorbay have also published a Diving Code of Conduct.

Common guillemot are susceptible to visual and noise disturbance generated by the movement of both commercial and recreational crafts including non-motorised water craft. The area inshore of a line between the Mew Stone and Berry Head is designated as a Special Area of Protection which prevents access by mariners between 25th March and 31st July. However the Torbay Coastal Zone Management Plan 2013 – 2018 (SeaTorbay 2013) has identified a lack of enforcement with regards to this order. SeaTorbay have published codes of conduct for sail sports, paddle sports and powercraft highlighting this order. However, a recent study investigating anthropogenic disturbance to the guillemot colony at Berry Head (Hughes *et al*. in prep.) found that fishing boats, motor boats, sailing boats, canoes, paddleboards and jetskis all entered the waters around the colony (between the Mew Stone and Berry Head and out to 500 m) when the birds were present. The area surveyed includes the whole of the Special Area of Protection.

Consideration of supporting habitats

The GMA advice given in this document is focussed on identification of those activities that are considered to be causing or likely to cause the conservation status of the proposed bird features of the MCZ to be adversely affected. Furthermore, the focus has been entirely on those activities that are causing or could cause such adverse impacts by exerting pressures to which the proposed bird features are considered to be moderately or highly sensitive to direct impacts such as disturbance, displacement or death. This assessment does not, therefore, take account of the potential for the activities highlighted, or other activities, to have indirect impacts on the well-being of the proposed bird features via impacts on their supporting habitats.

Table 8 lists all of the marine sub-features which are listed in Natural England's marine evidence geodatabase as being present in the MCZ and are considered to be likely to provide supporting habitat for black-necked grebes and common guillemot. It is assumed to be likely that many or most of the activities which could lead to damage or loss of these supporting habitats would be ship-based and therefore also have the potential to cause direct impacts on the birds via eg disturbance, displacement or death. The majority of activities that may already be having, or have the potential to have, significant indirect impacts on the birds via direct impacts on their supporting habitats should therefore already have been identified in this advice. There remains the possibility, however, that a full assessment of the full range of activities to which each of these potential supporting habitats is itself considered to be moderately or highly sensitive would generate a further suite of activities not considered in the GMA advice provided in this document.

Table 129 List of habitat sub-features which are potential supporting habitats for black-necked grebe and common guillemot and are recorded as being present within the boundaries of the proposed MCZ within Natural England's marine evidence geodatabase.

Italic font denotes those in which Natural England staff who are familiar with the site have low confidence regarding their presence in any significant amount within the site boundary.

Subfeature Common Name (Supporting habitat)	**SPA Subfeature code (GI)**
Circalittoral rock	A4
Infralittoral rock	A3
Intertidal mixed sediments	A2.4
Intertidal mud	*A2.3*
Intertidal rock	A1
Subtidal mixed sediments	A5.4
Subtidal mud	A5.3
Subtidal sand	A5.2
Vegetated sea cliffs of the Atlantic and Baltic coasts	*H1230*
Intertidal sand and muddy sand	A2.2
Seagrass beds	A5.53
Subtidal coarse sediment	A5.1

6.12 Cumbria Coast third-party proposed highly mobile species MCZ

Contents

6.12.1 Background

This third-party proposal was submitted by the RSPB with the aim of protecting nesting seabirds at St. Bees Head whilst they use the sea surface for maintenance behaviour. Cumbria Coast was designated as an MCZ in 2013 for the Broad Scale Habitats (BSH) features of intertidal biogenic reefs, intertidal sand and muddy sand, high energy intertidal rock and moderate energy infralittoral rock; and the Habitat Features of Conservation Importance (HOCI) honeycomb worm (*Sabellaria alveolata*) reefs, intertidal underboulder communities and peat and clay exposures. St. Bees Head SSSI overlaps the MCZ in the intertidal zone and is notified for, among other features, the seabird colony and the cliffs that support it. The conservation aim of this third-party proposal, in the case of common guillemot and razorbill, would be to provide a 'generic maintenance extension' to the colonies protected on land through the St. Bees Head SSSI, so that the same populations would also receive protection through the MCZ from direct impacts whilst at sea engaged in 'active' maintenance behaviours close to their colony. Generic maintenance extensions have been put in place to protect breeding common guillemots and razorbills (and other species) at two of the largest seabird colonies in England at which numbers of one or both species merit their status as a feature of a Special Protection Area. Application of the same approach at this site within an MCZ, in conjunction with third-party proposals to do the same at four other common guillemot, and two other razorbill, colonies in England, would see the same approach applied to all five of the next most important breeding common guillemot colonies in England, and three of five next most important razorbill colonies. This would make a significant contribution to delivery of a representative and replicated suite of sites that would afford protection to this species at sea in the breeding season in England. This third-party proposal meets the JNCC guidance on seaward extensions to seabird colonies supporting auks (McSorley *et al.* 2003, Annex 5 in the Advice Overview document).

RSPB proposed a two kilometre extension to the site (drawn from the SSSI seaward boundary) due to the presence of northern fulmar at the colony. There is an existing one kilometre seaward extension to the site boundary around St. Bees Head, which was included in the original site boundary due to the Irish Sea Conservation Zones recommendation to include black guillemot, which breed in part of the site, as a feature. Whilst black guillemot was not designated in the site in 2013, the site boundary does include the one kilometre extension. For common guillemot and razorbill, a one kilometre extension is recommended.

6.12.2 Assessment against selection criteria

6.12.2.1 Ecological significance

Table 130 Summary of scoring for Principle 1 Ecological Significance

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Razorbill	**Moderate** This score would not be increased by application of generic evidence re ecological significance of maintenance extensions as scores are largely driven by the numbers of birds at this site.	**Moderate**	**High** Seabird 2000 census data indicated that this colony was the third most important colony in England. More recent data indicates a site decline and it is now the 10th largest colony. However, the colony remains: the only one in the English Irish Sea for this species, the 8th largest colony in all England if one considers birds at Flamborough and Filey to be part of one colony that is now included within a single pSPA, and the 5th largest colony outside the SPA network in England. Work by JNCC has clearly demonstrated the persistent use by breeding auks of waters within one kilometre of their colonies for conducting critical 'active maintenance behaviour' and that this is a consistent pattern across colonies.
Common guillemot	**Moderate** (in terms of site-specific evidence). Common guillemot occurs in large numbers of high national significance; consequently this score would be increased by application of generic evidence regarding the ecological significance of maintenance extensions.	**High**	**High** Seabird 2000 census data indicated that this colony was the third most important guillemot colony in England at that time. More recent count data, confirmed this status. Work by JNCC clearly demonstrated the persistent use by breeding auks of waters within one kilometre of their colonies for conducting critical 'active maintenance behaviour' and that this is a consistent pattern across colonies.

Justification

Razorbill

Original assessment

Evidence was provided that the SSSI is a nationally important site and regionally very important and has been for some time. The assessment of the ecological significance of the proposed MCZ, when considered in a national context, differed between the proposed features in line with the relative importance of the numbers of each species nesting in the St. Bees Head colony. The ecological significance was assessed as **MODERATE** for razorbill.

References were made to generic evidence regarding the ecological significance of sea areas adjacent to colonies to the proposed features of the site (for maintenance activities). Site-specific data on the

distribution of birds on the sea in the area were also presented. The data used for razorbill (FAME & STAR) indicated the importance of areas that, while being significantly larger than the area being proposed, do include it at their centre.

This evidence suggesting the usage of these sea areas by these species was moderated by the relative numbers of these species within the SSSI and led to an assessment that the evidence of the ecological significance for razorbill was **MODERATE**.

The argument presented in the proposal in favour of the ecological significance of this area was also based on expert judgement which has seen 'generic' extensions of this type applied to many SPA seabird colonies around the UK, as a matter of best practice. That approach has an empirical evidence base, based on research conducted by JNCC and published in various JNCC reports. These can be considered high quality data sources (albeit not site-specific) in regard to the ecological significance of maintenance extensions to the birds at a given colony. However, when considering ecological significance in a national context, the relative importance of the numbers of birds at the colony must be considered and that led to the assessments given here.

Additional evidence gathered and revised assessment

The razorbill colony at St. Bees is the only razorbill colony in the English Irish Sea and has been present since at least the early-1800s (Macpherson 1892). It has always been of significant size.

A review of seabird colony count data (see Annex 6 in the Advice Overview document) reveals that, based on the national Seabird 2000 census data, the number of razorbills at the St. Bees Head SSSI colony at that time (312 individuals) made this site the third largest razorbill colony in England, and the second largest site not afforded protection as an SPA in England. Since Seabird 2000, numbers of razorbill have declined at St. Bees Head SSSI for unknown reasons with the latest count being 177 birds in 2016 (RSPB site survey data). This decline contrasts with the trend at many of the top ten sites identified in Seabird 2000, six of which have seen significant increases since Seabird 2000. The site is now the tenth largest English colony (or 8th largest considering that colonies at Filey are now incorporated into the larger Flamborough & Filey Coast pSPA). Even today, the colony is the fifth largest in England outside the SPA network (See Annex 6 in the Advice Overview document) and remains the only colony in the English Irish Sea.

A maintenance extension has been proposed for razorbill within the Flamborough and Filey Coast pSPA. Thus, the ecological significance of providing protection to breeding razorbills by way of generic maintenance extensions has been acknowledged at the two largest razorbill colonies in England. The proposal to afford this protection at St. Bees Head SSSI within, and extending, the Cumbria Coast MCZ would similarly be of considerable ecological significance to the birds at this colony. It would also be of wider ecological significance to the species in England, given that despite recent declines, and aside from the SPAs already afforded protection in this way, this colony remains the fifth largest colony in England, and the only colony in the English part of the Irish Sea.

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 in the Advice Overview document. In summary, McSorley *et al.* (2003) present the results of analyses of repeated boat-based transect surveys conducted in 2001 around six seabird colonies. During these surveys the locations of approximately 17,000 common guillemots and 1,400 razorbills engaged in active maintenance behaviours were mapped. The density of these birds was analysed as a function of increasing distance from the colonies and revealed a strikingly consistent pattern of elevated densities within one kilometre of each colony in comparison to much reduced densities beyond that distance (McSorley *et al.* 2003, and see Annex 5 in the Advice Overview document). This evidence presented by McSorley *et al.* (2003) is considered to: i) constitute a significant body of reliable, empirically-based

evidence supporting the conclusion that these areas of water have clear ecological significance to the life-histories of the species for designation, ii) provide evidence that is based on at least one high quality source of data, and iii) make a convincing case that for auks, these waters make a significant contribution to the life cycle of the species due to their role in providing supporting habitats or processes.

Anecdotal observations by Natural England staff and RSPB are consistent with waters adjacent to the St. Bees Head SSSI being used for this purpose at St. Bees Head, and are consistent with observations collected from boat-based surveys in 2015 (Brown & May 2015) that show a general low density distribution in areas more than two kilometres offshore but higher numbers close to the coast.

Thus, it is considered that the provision of protection to waters within a one kilometre buffer area around the razorbill colony at St. Bees Head SSSI via the extended Cumbria Coast MCZ will, by virtue of the size of the colony in an English context and its position in the Irish Sea, being far removed from the only other English colony where such measures are nearer to being implemented (Flamborough and Filey Coast pSPA), and other razorbill colonies in south-west England where such MCZ proposals are being considered, make a contribution to both the representivity and replication of sites within the MPA network. All of this is re-considered to merit a score of **HIGH** in regard to Principle 1 Ecological Significance.

Common guillemot

Original assessment

Evidence was provided that the SSSI is a nationally important site and regionally very important and has been so for some time. The assessment of the ecological significance of the proposed MCZ, when considered in a national context, differed between the proposed features in line with the relative importance of the numbers of each species nesting in the St. Bees Head colony. Thus the ecological significance was assessed as **MODERATE** for common guillemot.

References were made to generic evidence regarding the ecological significance of sea areas adjacent to colonies to the proposed features of the site (for maintenance activities). Site-specific data on the distribution of birds on the sea in the area was also presented. The data used for guillemot (FAME & STAR) indicate the importance of areas that, while being significantly larger than the area being proposed, do include it at their centre.

This evidence suggesting the usage of these sea areas by these species is moderated by the relative numbers of these species within the SSSI and leads to an assessment that the evidence of the ecological significance for guillemot is **MODERATE**.

The argument presented in the proposal in favour of the ecological significance of this area was also based on expert judgement which has seen "generic" extensions of this type applied to many SPA seabird colonies around the UK, as a matter of best practice. That approach has an empirical evidence base, based on research conducted by JNCC and published in various JNCC reports. These can be considered high quality data sources (albeit not site-specific) in regard to the ecological significance of maintenance extensions to the birds at a given colony. However, when considering ecological significance in a national context, the relative importance of the numbers of birds at the colony must be considered and that led to the assessments given here.

Additional evidence gathered and revised assessment

The common guillemot colony at St. Bees is the only common guillemot colony in the English Irish Sea and has been present since at least the late-1800s (Macpherson 1892). It has always been of significant size.

A review of seabird colony count data (see Annex 6 in the Advice Overview document) reveals that

based on the national Seabird 2000 census data, the number of guillemots at the St. Bees Head SSSI colony at that time (6450 individuals) made this site the third largest guillemot colony in England, and the largest site not afforded protection as an SPA in England. Since Seabird 2000, numbers of common guillemot have increased at St. Bees Head SSSI (latest count in 2016 being 13,061 birds) but have also increased at many other sites. The site remains the third largest English colony and the largest outside the SPA network (See Annex 6 in the Advice Overview document).

Maintenance extensions have been proposed within the Flamborough and Filey Coast pSPA and for the Farne Islands colony within the surrounding Northumberland Marine pSPA. Thus, the ecological significance of providing protection to breeding guillemots by way of generic maintenance extensions has been acknowledged at the two largest guillemot colonies in England. The proposal to afford this protection at St. Bees Head SSSI within, and extending, the Cumbria Coast MCZ would similarly be of considerable ecological significance to the birds at this colony. It would also be of wider ecological significance to the species in England given that, aside from the SPAs already afforded protection in this way, this colony is the largest guillemot colony in England, and the only colony in the English part of the Irish Sea.

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 in the Advice Overview document. In summary, McSorley *et al*. (2003) present the results of analyses of repeated boat-based transect surveys conducted in 2001 around six seabird colonies. During these surveys the locations of approximately 17,000 common guillemots and 1,400 razorbills engaged in active maintenance behaviours were mapped. The density of these birds was analysed as a function of increasing distance from the colonies and revealed a strikingly consistent pattern of elevated densities within one kilometre of each colony in comparison to much reduced densities beyond that distance (McSorley *et al.* 2003, and see Annex 5 in the Advice Overview document). This evidence presented by McSorley *et al.* (2003) is considered to: i) constitute a significant body of reliable, empirically-based evidence supporting the conclusion that these areas of water have clear ecological significance to the life-histories of the species for designation, ii) provide evidence that is based on at least one high quality source of data and iii) make a convincing case that for auks, these waters make a significant contribution to the life cycle of the species due to their role in providing supporting habitats or processes.

Anecdotal observations by Natural England staff and RSPB are consistent with waters adjacent to the SSSI being used for this purpose at St. Bees Head, and are consistent with observations collected from boat based surveys in 2015 (Brown & May 2015) which show a general low density distribution in areas more than two kilometres offshore but higher numbers close to the coast.

Thus, it is considered that the provision of protection of waters within a one kilometre buffer area around the guillemot colony at St. Bees Head SSSI via the extended Cumbria Coast MCZ will, by virtue of the size of the colony in an English context and its position in the Irish Sea, being far removed from the only two English colonies where such measures are nearer to being implemented (Flamborough and Filey Coast pSPA and Northumberland Marine pSPA), and other guillemot colonies in south-west England where such MCZ proposals are being considered, make a contribution to both the representivity and replication of sites within the MPA network. All of this is re-considered to merit a score of **HIGH** in regard to Principle 1 Ecological Significance.

6.12.2.2 Persistence

Table 131 Summary of scoring for Principle 2 Persistence

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Razorbill	**Moderate** (in terms of site-specific evidence), **High** (in terms of generic information underpinning the proposal)	**High**	**High** Seabird 2000 census data indicated that this colony was the third most important razorbill colony in England at that time, although more recent count data, where available, identified a decline for unknown reasons. Work by JNCC clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.
Common guillemot	**Moderate** (in terms of site-specific evidence), **High** (in terms of generic information underpinning the proposal)	**High**	**High** Seabird 2000 census data indicated that this colony was the third most important guillemot colony in England at that time. More recent count data, where available, confirmed this status. Work by JNCC clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.

Justification

Razorbill

Original assessment

There was good reliable evidence of the long-term presence of razorbill in the adjacent SSSI - the bird features being present when notified in 1995, and recent evidence was given regarding the population sizes of the proposed features at the adjacent SSSI (1990 -2014). This level of colony count data over a long time period could merit a **HIGH** score in regard to persistent use of the area.

However, this information was not direct evidence of usage of sea areas at higher densities than surrounding waters over that period. FAME and STAR modelled density data were provided which do support higher levels of activity / time spent in this area. The area covered by the predicted 50% of accumulated time however was significantly larger than the proposed extension to the site so one cannot conclude from these data exactly what predicted percentage of the birds time would be considered protected by the proposal compared to that outwith the proposed boundary. Therefore, this lack of certainty regarding site-specific evidence of persistently greater use of waters inside versus outside the boundary, moderates the colony count data regarding persistence and was considered to lead to an overall score of **MODERATE**.

However, if one considers that the principle of maintenance extensions applies to SSSIs as it has been applied to SPAs, then one might consider the confidence in that generic evidence base regarding persistent use of such areas to be High because analysis of empirical data indicated that sea areas within one kilometre of seabird colonies will in general support persistently relatively high levels of usage by auks for conducting maintenance behaviours. These can be considered high quality data sources (albeit not site-specific), which could lead to an overall score of **HIGH**.

Additional evidence gathered and revised assessment

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 in the Advice Overview document. As noted above, this study provides the empirical survey data and analysis demonstrating the consistent within species and across colonies occurrence of persistently higher densities of auks engaged in active maintenance behaviour in waters within one kilometre of their breeding colony than further offshore. This evidence presented by McSorley *et al*. (2003) is considered to: i) constitute a significant body of reliable, empirically-based evidence to support the conclusion that the area of sea within one kilometre of a guillemot colony is likely to have persistent presence at higher densities of the species than the surrounding waters and ii) provide one high quality source of data with large and representative sample sizes, collected over an adequate period of time and analysed according to best practice that yields outputs that have low levels of uncertainty.

Thus, this information, together with the fixed location of what is one of the larger razorbill colonies in England and one which has been present at this locality since at least the 1800s, provides a compelling case for the persistent presence at higher densities of razorbill during the breeding season within the proposed one kilometre buffer around the St. Bees Head SSSI (to be included within the Cumbria Coast MCZ) than in other waters locally off Cumbria and across the English part of the Irish Sea and indeed in comparison to waters around most of the rest of England. This suggests that the score for this principle can be re-assessed as **HIGH**.

Common guillemot

Original assessment

There was good reliable evidence of the long-term presence of common guillemot in the adjacent SSSI - the bird features being present when notified in 1995, and recent evidence was given regarding the population sizes of the proposed features at the adjacent SSSI (1990 -2014). This level of colony count data over a long time period could merit a **HIGH** score in regard of persistent use of the area.

However, this information is not direct evidence of usage of sea areas at higher densities than surrounding waters over that period. FAME and STAR modelled density data are provided which do support higher levels of activity / time spent in this area. The area covered by the predicted 50% of accumulated time however was significantly larger than the proposed extension to the site so one cannot conclude from these data exactly what predicted percentage of the birds time would be considered protected by the proposal compared to that outwith the proposed boundary. Therefore, this lack of certainty (from the site-specific evidence) around persistently greater use of waters inside versus outside the boundary moderates the colony count data regarding persistence and was considered to lead to an overall score of **MODERATE**.

However, if one considers that the principle of maintenance extensions applies to SSSIs as it has been applied to SPAs, then one might consider the confidence in that generic evidence base regarding persistent use of such areas to be High, because analysis of empirical data indicated that sea areas within one kilometre of seabird colonies will in general support persistently relatively high levels of usage by auks for conducting maintenance behaviours. These can be considered high quality data sources (albeit not site-specific), which could lead to an overall score of **HIGH**.

Additional evidence gathered and revised assessment

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 in the Advice Overview document. As noted above, this study provides the empirical survey data and analysis demonstrating the consistent within-species and across-colonies occurrence of persistently higher densities of auks engaged in active maintenance behaviour in waters within one kilometre of their breeding colony than further offshore. This evidence presented by McSorley *et al*. (2003) is considered to: i) constitute a significant body of reliable, empirically-based evidence to support the conclusion that the area of sea within one kilometre of a guillemot colony is likely to have persistent presence at higher densities of the species than the surrounding waters and ii) provide one high quality source of data with large and representative sample sizes, collected over an adequate period of time and analysed according to best practice that yields outputs that have low levels of uncertainty.

Thus, this information, together with the fixed location of what is the third largest common guillemot colony in England, and one which has been present at this locality since at least the 1800s, provides a compelling case for the persistent presence at higher densities of guillemots during the breeding season within the proposed one kilometre buffer around the St. Bees Head SSSI (to be included within the Cumbria Coast MCZ) than in other waters immediately local off Cumbria and across the English part of the Irish Sea and indeed in comparison to waters around most of the rest of England. This suggests that the score for this principle can be re-assessed as **HIGH**.

6.12.2.3 Site size and delineation

Table 132 Summary of scoring for Principle 3 Site size and delineation

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Razorbill	**Low** (site specific). **High** (generic) (though ENG principles re boundary setting not strictly applied)	**High**	**High** Work by JNCC clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.
Common guillemot	**Low** (site specific). **High** (generic) (though ENG principles re boundary setting not strictly applied)	**High**	**High** Work by JNCC clearly demonstrated the persistent occurrence of breeding auks engaged in critical 'active maintenance behaviour' in waters within one kilometre of their breeding colonies than further offshore, and that this is a consistent pattern across colonies.

Justification

Razorbill

Original assessment

The proposal was for a buffer applied for the features of the neighbouring SSSI. FAME and STAR modelled density data was provided which does support higher levels of activity / time spent in this general area for some of the noted species, however, the area covered by the predicted 50% of accumulated time was significantly larger than the proposed extension to the site, so one couldn't conclude from these data exactly what predicted percentage of the birds' time would be considered protected by the proposal and thus its appropriateness.

The boundary did not follow all of the Ecological Network Guidance (ENG) (Natural England and JNCC 2010) principles, such as use of the minimum number of straight lines.

These considerations therefore merited a score of **LOW**.

The proposed boundary did however follow the recommendations of reports published by JNCC regarding the extent of generic maintenance extensions for auks i.e. one kilometre referred to in the proposal.

Furthermore, the JNCC-endorsed generic guidance can be considered a high quality data source (albeit not site-specific) such that if that is considered to be the evidence base underpinning the size and delineation of the MPA, this would merit a score of **HIGH.**

Additional evidence gathered and revised assessment

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 in the Advice Overview document. As described above, this study provides the empirical survey data and analysis demonstrating the consistent, within-species and across-colonies, occurrence of persistently higher densities of auks engaged in active maintenance behaviour in waters within one kilometre of their breeding colony than further offshore. This evidence presented by McSorley *et al*. (2003) is considered to: i) constitute a strong evidence base to demonstrate that the size and shape of the area included within the proposed MCZ boundary is appropriate to that required to ensure the viability of the site; ii) provide a significant body of reliable, recent, empirically-based evidence on which to determine the location of the proposed MCZ boundary, iii) be based on underlying data that are considered to have good quality with large and representative sample sizes, appropriately collected and analysed according to best practice and to yield boundaries that have low levels of uncertainty in their construction.

In the light of the above, the score for this principle can be re-assessed as **HIGH.**

Common guillemot

Original assessment

The proposal was for a buffer applied for the features of the neighbouring SSSI. FAME and STAR modelled density data was provided which did support higher levels of activity / time spent in this general area for some of the noted species however the area covered by the predicted 50% of accumulated time is significantly larger than the proposed extension to the site, so one couldn't conclude from these data exactly what predicted percentage of the birds' time would be considered protected by the proposal and thus its appropriateness.

The boundary did not follow all of the Ecological Network Guidance principles, such as use of the minimum number of straight lines.

These considerations therefore merited a score of **LOW**.

The proposed boundary did however follow the recommendations of reports published by JNCC

regarding the extent of generic maintenance extensions for auks i.e. one kilometre referred to in the proposal.

Furthermore, the JNCC endorsed generic guidance can be considered a high quality data source (albeit not site-specific) such that if that is considered to be the evidence base underpinning the size and delineation of the MPA, this would merit a score of **HIGH.**

Additional evidence gathered and revised assessment

McSorley *et al.* (2003) present a report on the evidence base underlying the concept of applying generic maintenance extensions adjacent to protected seabird colonies. A review of this report is presented in Annex 5 in the Advice Overview document. As described above, this study provides the empirical survey data and analysis demonstrating the consistent, within-species and across-colonies, occurrence of persistently higher densities of auks engaged in active maintenance behaviour in waters within one kilometre of their breeding colony than further offshore. This evidence presented by McSorley *et al*. (2003) is considered to: i) constitute a strong evidence base to demonstrate that the size and shape of the area included within the proposed MCZ boundary is appropriate to that required to ensure the viability of the site; ii) provide a significant body of reliable, recent, empirically-based evidence on which to determine the location of the proposed MCZ boundary, iii) be based on underlying data that are considered to have good quality with large and representative sample sizes, appropriately collected and analysed according to best practice and to yield boundaries that have low levels of uncertainty in their construction.

In the light of the above, the score for this principle can be re-assessed as **HIGH.**

6.12.2.4 Appropriateness of Management

Table 133 Summary of scoring for Principle 4 Appropriateness of Management

Species proposed	Original score (Aug 2016)	Potential score (Aug 2016)	Updated score (taking into account further evidence review, Feb 2017)
Razorbill	**Not met**	**Low** (but still under consideration)	**Moderate**
Common guillemot	**Not met**	**Low** (but still under consideration)	**Moderate**

Justification (common guillemot & razorbill)

Original assessment

The RSPB proposal provided nothing in way of evidence of any activity to which the species might be sensitive occurring in the vicinity of the colony. The proposal provided information on the sensitivity to pressures and flush distances of auks from other sites, however this information could not be used when thinking about pressures and management until an understanding of the suite of activities in and around one kilometre of St. Bees Head had been established. This was scored as **LOW.**

Additional evidence gathered and revised assessment

Additional information has been gathered on the range of human activities which take place within the proposed Cumbria coast MCZ extension. This information forms the basis of an appraisal, reviewing the level of risk the features are exposed to and the need and appropriateness of employing management measures to reduce these risks. Extra information has been obtained from

- The local IFCA
- RSPB
- Sea users/Stakeholders

Activity Baseline

Fishing: Netting

The North Western IFCA (NWIFCA) have identified that commercial fishing using nets occurs in the outer Solway Firth, northern Cumbrian coast and around St. Bees Head. Subtidal static gill nets are used which target bass, cod, pollock with some plaice and sole nets set. There is also some use of intertidal staked nets.

Netting occurs along the north Cumbrian coast all year but largely in summer where two tides a day can be fished. It occurs to the north and to the south of the St. Bees extension area. Intertidal staked nets vary in size from 100 m to 150 m in length and the subtidal nets are from 150 m to 250 m in length. Gear is marked by Dahn buoys, although these do not specify what gear is below and only by lifting the gear can this be determined. Commercial nets can very occasionally be left out for a week in bad weather. (NWIFCA 2016a).

Netting intensity

Brown and May (2015) through consulting local fishermen on a new power station development identified the area around St. Bees as a locally important gill net fishery.

The southernmost boundary of the Solway Firth pSPA overlaps slightly with the northern boundary of the proposed MCZ. The draft habitats regulations assessment for the pSPA undertook an initial review of the number of boats fishing with nets and the number of days those boats were active in the outer Solway Firth. The maximum number of vessels using nets along the North Cumbrian coast is 18, six of these vessels are thought to use the area of coast immediately north of St. Bees Head, within 'Area 3' identified in Figure 1 (NWIFCA 2016b).

Whilst no targeted survey of netting activity around St. Bees has occurred, the IFCA do log sightings of fishing vessels when they are observed. Three sightings of gill netting boats in the Proposed MCZ area have been recorded (two in 2008 and one in 2011) during February, April and August (see Figure 2). Vessel lengths were 9.65 metres and 9.8 metres (NWIFCA 2017)

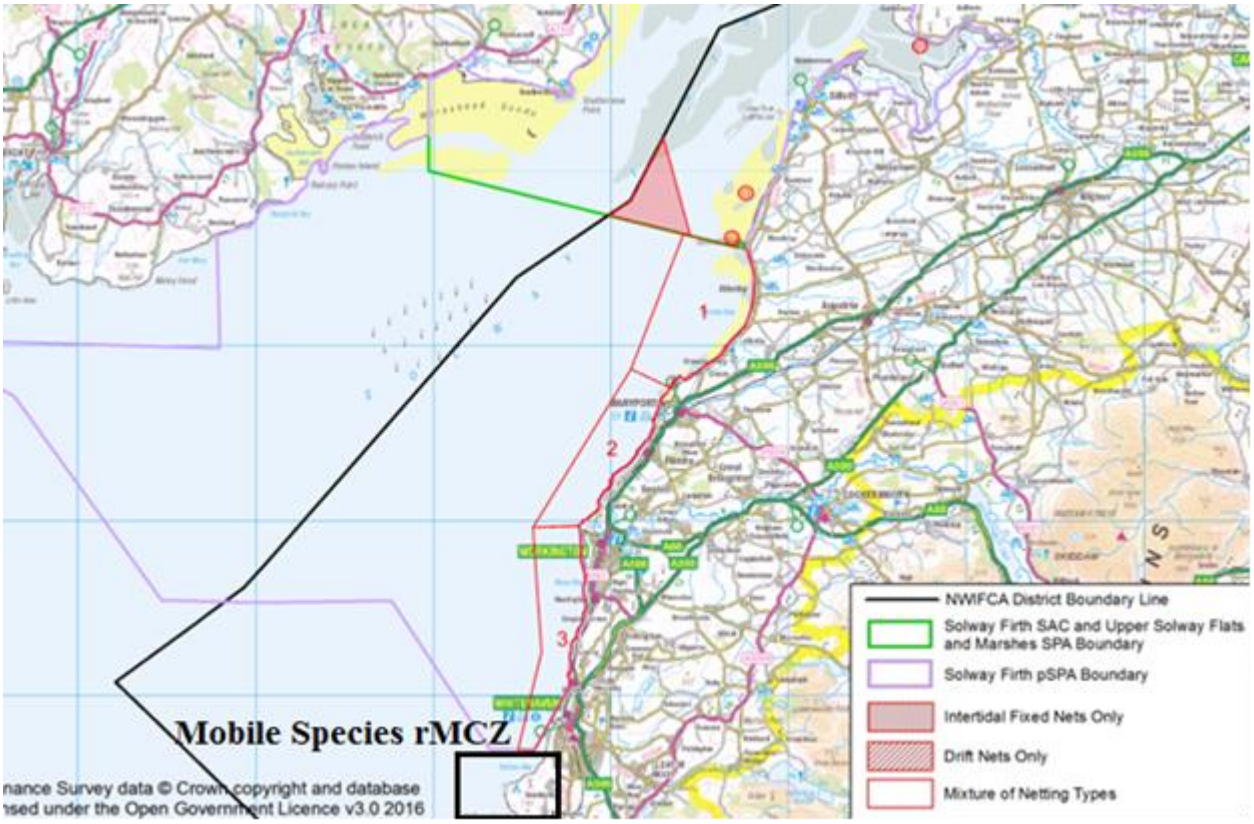

Figure 1 Sectors used to quantify netting activity in the outer Solway Firth pSPA and their proximity to the proposed MCZ (NWIFCA 2016b)

Fishing: Potting (traps)

The NWIFCA have identified that from early February until late September fishers target lobster close into the cliffs at St. Bees Head. Usage of the site is variable and no targeted surveys have been undertaken but the NWIFCA have sighted 21 vessels using pots in the proposed MCZ between 2007 and 2015. Boats recorded were <10 m in length (sizes range from 6.41 metres - 6.98 metres) and were sighted from April-October (see Figure 2). Their home ports were Whitehaven and Ravenglass. In 2016 two registered and licenced vessels fished St. Bees in 2016. (NWIFCA 2016a)

Brown and May (2015) through consulting local fishermen on a new power station development identified the area around St. Bees as a locally important area for potting. Keith Dixon from the Workington fishermen's association indicated that in 2015 there were no full time fishermen out of Workington (only part time), but four vessels are licenced for shellfish and target crab species and lobster (*Hommarus gammarus*). There are unlicensed vessels which operate on a hobby permit which allows them to carry five pots.

All the Workington boats operate from St. Bees Head northwards (Brown & May 2015).

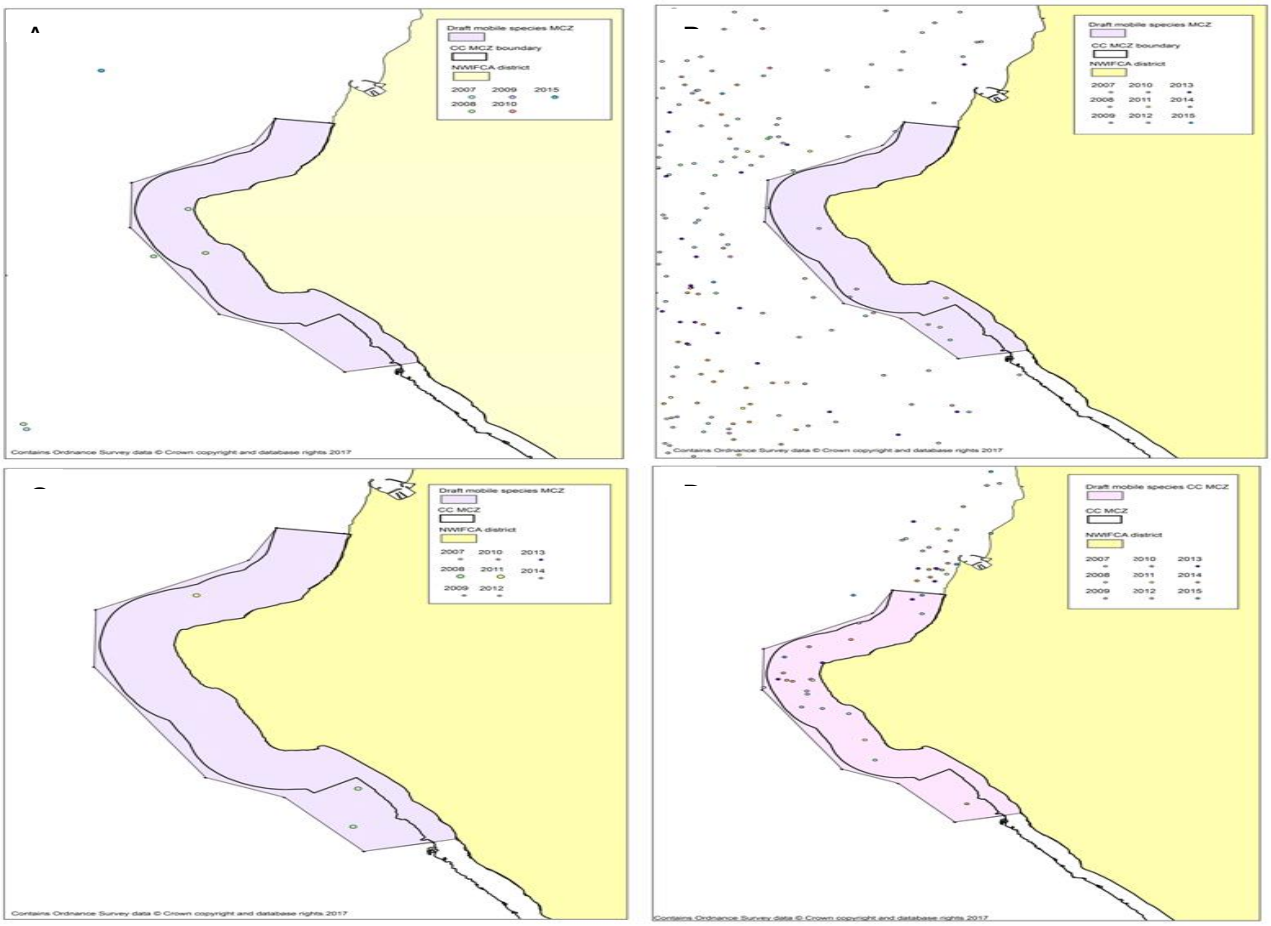

Figure 2 Fishing activity recorded within draft mobile species MCZ 2007-2015. (A) side and stern trawlers, (B) single, twin and triple rigged trawlers, (C) gill netters, (D) potters. (NWIFCA 2017)

Fishing: Towed gear

The deeper water off St. Bees is part of an important *Nephrops*, white fish and ray fishery, which is targeted with towed gear (Brown and May 2015). VMS surveillance data indicates that the majority of this activity takes place outside the one kilometre proposed MCZ extension area, where the water is deeper and less likely to interact with rocky ground (Brown and May 2013). However the NWIFCA have indicated that trawlers can infrequently be active close in to the cliffs at St. Bees (as little as 50 yards off the rock). The NWIFCA have recorded eight sightings from 2007-2015 (plus two side/stern trawlers) in the proposed MCZ area (Figure 2). Home ports include Whitehaven (other ports unknown). Sightings have been recorded year round with a higher frequency of sightings from August to October. Vessel sizes ranged from 8.4 metres - 11.6 metres.

Recreational Boating

There are three marinas north of St. Bees Head which are used by recreational vessels with a combination of both motorised and wind driven craft. Whitehaven is the closest marina being three kilometres from St. Bees Head with Maryport being another popular marina 23 kilometres from St. Bees Head. Workington also accommodates a number of recreational vessels and is 14 kilometres from St. Bees. Initial contact with Whitehaven marina suggests that recreational vessels do transit close to the cliffs at St. Bees Head due to the attractiveness of the landscape and the presence of a bird colony. Feedback from the Whitehaven yachting association indicates that on calm days there can be 'a few' boats which sail inshore close to the cliffs, with anglers occasionally anchoring close to the cliffs (inshore of the transiting yachts). The prevailing wind direction is from the south-west and westerly directions meaning days where wind conditions allow boats to sail close into the cliffs at St. Bees Head are not common. Note: It is not clear what distance corresponds to the judgment 'close to the cliffs' and how this

relates to the one kilometre proposed MCZ extension.

Observations by the St. Bees Head RSPB warden suggest tourist boat trips from Whitehaven around the cliffs at St. Bees were causing disturbance to birds but these trips have stopped over the past few years and levels of disturbance may have reduced as a consequence.

Angling

Recreational angling using rods and lines is popular around St. Bees Head; most angling is undertaken from anchored/stationaryok boats with little shore casting due to the difficult access. The NWIFCA have identified 47 boats fishing with rod and line around the proposed MCZ between 2007 and 2015. Boats were recorded from April to October with a higher number of sightings from June to August (NWIFCA 2017).

The GMA advice given in this document is derived from analysis of potential direct impacts on the species proposed for protection. This third-party proposal was submitted with the aim of providing, if designated, protection within an MCZ of a limited sea area adjacent to SSSI colonies, in recognition of these areas being of greatest importance for birds engaging in critical active maintenance behaviours, rather than foraging *per se*. Therefore, the focus would be on protection of the population from direct impacts via eg disturbance, displacement and direct mortality, as opposed to any particular protection of supporting habitats.

All of this is re-considered to merit a score of **MODERATE** in regard to Principle 4 Appropriateness of Management.

6.12.3 General Management Approach

Table 134 Proposed General Management Approach

Feature proposed	GMA proposed at the current time	Main issue(s) in relation to this GMA
Razorbill	Recover to favourable condition	Vessel usage including fishing – recreational and commercial Static netting – gill nets
Common guillemot	Maintain in favourable condition	Vessel usage including fishing – recreational and commercial Static netting – gill nets

Justification

Through reviewing the types of activity present in the third party-proposed MCZ, potential risks to common guillemot and razorbill were identified through 2 pressures; firstly entanglement in nets (removal of non-target species) and secondly through visual disturbance created by boat presence**.**

Entanglement (removal of non-target species)

Razorbill

Whilst the amount of gill netting employed at the proposed MCZ is low it will occur in the future, on occasion, if no management is introduced. Birds are likely to be found in high densities in the proposed MCZ due to the proximity of the colony meaning even single bycatch incidents could cause the mortality of a number of birds. The general decline and relatively low number of birds at the colony mean that the

impact of bycatch mortality (if it occurred) could be significant to the St. Bees Head population. It would be difficult to predict what level of mortality would and would not trigger a significant impact due to the relatively high variations in colony counts year to year.

Common guillemot

Common guillemots are sensitive and just as susceptible to bycatch through the use of static nets as razorbills. However, the number of common guillemot breeding at St. Bees Head is significantly larger than it is for razorbill and these numbers are stable and in fact show a steady increase year on year between 1999 and 2016. The significantly larger numbers of common guillemot in the proposed MCZ combined with the fact that population is increasing suggests they would not be highly vulnerable to levels of bycatch mortality which could significantly impact the condition or population of the colony. This presumption is based on our current understanding of pressure intensity and population numbers.

Visual Disturbance

Razorbill and common guillemot

It is clear that birds on the water within the proposed MCZ are likely to be disturbed by a variety of vessel types and activities eg potting, angling, yachting and fishing boat passage. The impact of this visual disturbance is dependent on the intensity, regularity and timing of the disturbance. Without a better understanding of the number and frequency of vessels using the area it is not possible to quantify the risk. Early indications are that the vessel usage of the site is infrequent and the disturbance levels are not high, however there may be occasions ie during good weather, where the number of boats in the site may become significant. Boat movements in the proposed MCZ are likely to be at slow speeds as they consist of yachts looking at the cliffs, vessels collecting pots or towing gear. Boats may also be stationary in the case of anglers.

Potential management options

Removal of Non target species

There are no measures currently in place to manage netting activity. The direct risk of bird mortality in the proposed MCZ through entanglement could be managed in several ways. The highest level of protection would be offered by a regulatory prohibition on the use of static nets during the bird breeding season. This restriction could be implemented through an NWIFCA byelaw banning the use of set nets for a defined period of time each year. Other options include education, voluntary restrictions, or regulatory restrictions on the number of nets. Management options other than a regulatory seasonal prohibition would be very difficult to monitor or review effectively due to the difficulty of identifying nets in the water.

Visual disturbance

There are no measures in place to manage vessel movements or disturbance. Due to the scarcity of data on vessel usage, the wide range of stakeholders involved and the variability in usage levels, likely options with regard to management could initially consist of stakeholder education and voluntary/self-management. Importantly, this type of management would need to be supported by a programme of data collection feeding into a review of future management options. Data collection could consist of site based monitoring/observations of vessel activity on suitable days (ie calm) days. Observations could be taken from the coast or via stakeholder engagement and participation.

The GMA advice given in this document is derived from analysis of potential direct impacts on the species proposed for protection. This third-party proposal was submitted with the aim of providing, if designated, protection within an MCZ of a limited sea area adjacent to SSSI colonies, in recognition of these areas being of greatest importance for birds engaging in critical active maintenance behaviours, rather than foraging *per se*. Therefore, the focus would be on protection of the population from direct

impacts via disturbance, displacement and direct mortality, as opposed to any particular protection of supporting habitats.

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Annex 1 – Examples of species type best-practice approaches to considering persistence of significant aggregations (from JNCC and Natural England 2016a)[23]

Cetacean specific approach

With the exception of the large scale international SCANS surveys, the majority of survey data collected for cetaceans have a very limited spatial scale. The Joint Cetacean Protocol was established to enable the collation of effort-related data in UK (and some adjacent) waters. A recent project has standardised some of those data. These standardised data have then been used in two modelling analyses. Data are standardised up until 2010. It is recommended that standardised JCP data, where available, along with any more recent data be considered if an MCZ is being proposed for this group.

Concerning persistence, MCZs identified for cetaceans should meet the principles set out below. In particular, they should demonstrate that the site has been persistently important to the species over the long term. For cetaceans, 'over the long term' is related to a suitable proportion of the generation time of the species. In line with recent criteria set for identifying SACs for cetaceans, the following should be considered for Principal 2 (Persistence) whereby the analysis will be rated as:

- **High Confidence**: If the analysis demonstrates that the site has supported the species at a higher density for 10 or more years than the surrounding area. This does not necessarily need 10 years of data, but modelled outputs must demonstrate the value of the proposed site over that time period and be supported by at least 3 years of effort related sightings data (some of which should be recent).
- **Moderate Confidence**: If the analysis demonstrated the site has supported the species at a higher density for 5 to 9 years than surrounding waters. This does not need 9 years of data, but modelled outputs must demonstrate the value of the proposed site over that time period and be supported by at least 3 years of effort related sightings (some of which should be recent).
- **Low Confidence**: If the analysis demonstrates that the site has supported the species at a higher density for less than 5 years than the surrounding waters. This does not need 5 years of data, but the modelled outputs must demonstrate the value of the proposed site over that time period and be supported by at least 3 years of effort related sightings (some of which should be recent).
- **Not met**: The analysis does not meet any of the criteria outlined above.

Good examples of approaches to analyses concerning cetaceans are provided by Paxton *et al.* (2014) and Heinänen and Skov (2015). The preferred use of the proposed area over a significant number of years in relation to neighbouring waters also needs to be demonstrated. As suggested above, collating effort-corrected sightings data from a significant number of years without consideration of the temporal scale will not be considered adequate evidence of persistence.

Bird specific approach

BirdLife International (2010) describe a range of the types of data that could be used to provide evidence of the presence of birds in a given sea area e.g. BirdLife International Seabird Foraging Range Database,

[23] Complete references for this Annex can be found in JNCC and Natural England 2016a. *Identifying possible Marine Conservation Zones for highly mobile species: Principles for third-party proposals*. Available at: http://jncc.defra.gov.uk/pdf/20160525_AnnexA_Selection_criteria_proposed_by_JNCC_and_Natural_England_v4.0.pdf

tracking data, at sea survey results, habitat modelling and other miscellaneous data sources. The report also highlights that such disparate data sources should be considered as either primary or supplementary data and that the most compelling case for identification of areas of importance to seabirds can be made in instances where two primary data sources coincide or overlap in the areas identified as being of particular importance. Birdlife International (2010) suggests that in identifying important areas, it is necessary as an absolute minimum for this to be based on a single primary data source of the highest quality. It is considered that application of such standards is likely to be appropriate in considering proposals for MCZs for birds.

Evidence for higher densities compared to surrounding areas
The identification of sites of importance to birds in the UK under national legislation (SSSI), European Directives (SPAs) and in fulfilment of obligations under international conventions (Ramsar sites) has typically been based on critical standard principles i.e. identifying sites which hold numbers of birds that exceed some population threshold, typically 1% of regional, national or international populations.

This approach favours and is appropriate when considering the protection of aggregated species. Kober *et al.* (2010) applied critical thresholds (1% of the relevant population) in analyses of European Seabirds at Sea (ESAS) data to identify hotspots of offshore usage by seabirds. Application of this criterion to the selected hotspots resulted in 97% of the 2201 hotspots not exceeding the required population threshold. In the case of the many species of seabird which are not listed on Annex I of the Birds Directive, this reflects application of the critical standards approach set out in Stage 1.2 of the UK SPA selection guidelines which requires a site to support at least 1% of the species' biogeographical population. However, the SPA selection guidelines make clear that where an insufficient level of protection is delivered by the identified suite of sites which exceed the critical thresholds, then additional areas can be identified based on the application of a set of ecological criteria and without the need to meet the critical population thresholds. In the light of those guidelines, Kober *et al.* (2012) applied just a minimum threshold of 50 individuals. That resulted in a further 29 additional areas being identified for possible protection areas for seabirds, but which would need to meet one or more of the ecological criteria outlined by the Birds Directive.

BirdLife International (2010) discusses the issue of turnover in setting and applying critical thresholds of usage. Turnover recognises that the numbers of seabirds in any area of sea at any one point in time is unlikely to reflect the total numbers that may use that area over a biologically meaningful period of time – e.g. during a breeding season. The need to consider this issue, and the implications this may have for amending the generic % (usually 1%) of populations used to set qualifying thresholds is acknowledged in the context of migratory waterbirds in The African –Eurasian Waterbird Agreement (AEWA). This issue may also be of relevance in deciding upon the critical standards thresholds appropriate when considering seabirds at sea in the context of MCZs.

In light of the above, this guidance does not set a fixed absolute density, abundance or % of population value that must be met in order for an area to be assessed as supporting a sufficient number of individuals to merit consideration as an MCZ. It is likely that such thresholds will be of value in assessing MCZ proposals but the actual values may be specific to each species and their ecology and, as is true in the SPA selection guidelines, other factors may be of relevance where strict application of thresholds significantly constrains site identification. However, at this stage it is possible to state that it will be necessary to provide evidence that an area proposed as an MCZ for birds is, in terms of the numbers of birds it supports, relatively important in comparison to other areas of sea from which it can be distinguished i.e. that usage within the area proposed should be demonstrably higher on a regular and persistent basis than elsewhere.

Evidence for persistence of these higher densities areas
When considering the sufficiency of evidence for persistent use of sites with high quality long-term monitoring data e.g. Seabird Monitoring Programme (SMP),Wetland Birds Survey (WeBS), it is standard

practice in the identification of both SSSIs (Drewitt *et al.* 2015) and SPAs (Stroud *et al.* 2001) to apply definitions of regularity of use used under the Ramsar Convention. This states that a site regularly supports a population of a given size if:

(a) the requisite number of birds is known to have occurred in two thirds of the seasons for which adequate data are available, the total number of seasons being not less than three; or

(b) the mean of the maxima of those seasons in which the site is important, taken over at least five years, amounts to the required level (means based on three or four years maybe quoted in provisional assessments only).

Drewitt *et al*. (2015) note that "In some instances, however, for species occurring in very remote areas or which are particularly rare, or where there are particular constraints on the capacity to undertake surveys, areas may be considered suitable on the basis of fewer counts. For some countries or sites where there is very little information, single counts can help establish the relative importance of the site for a species." This recognition of the need to re-assess requirements regarding evidence of persistence of use in the case of areas where gathering necessary data is challenging mirrors the consideration of that issue in the context of the identification of marine SPAs for inshore non-breeding waterbirds (Webb and Reid 2004). This recommended an iterative review of the data available for a given site in which the final iteration "might retain only best quality aerial or ship-based survey data and (a site) could be selected ……based on only two years of data, with an additional third year, courtesy of poorer data excluded during a prior iteration, to satisfy the first definition of regular used in the Ramsar site selection criteria." In anticipation that many proposals for MCZs for birds are likely to be concerned with fully marine areas it may be appropriate to consider this approach.

In the analyses of Kober *et al.* (2010, 2012) demonstrating regularity of use was considered critical, and analyses were undertaken to reflect the Ramsar definitions of regularity. However, application of this approach resulted in 1999 out of a total of 2201 (ie 91% of hotspots of elevated abundance of seabirds at sea) having insufficient temporal coverage to conduct the test. As noted by Webb and Reid (2004) "strict application of the Ramsar (type) criteria would result in under-representation of sites". However, as noted by Webb and Reid (2004) "Although the Ramsar definition of regular allows further compromise for remote areas, such compromise may be inappropriate in the marine environment, where transient aggregations of prey might lead to irregular occurrences of very large numbers of some inshore birds at a site. "

Thus, it is not possible at this stage to give an absolute fixed definition of the temporal span of data required to demonstrate persistent use in identification of potential MCZs for birds. Suffice to say that the longer the span of years over which empirical data demonstrating elevated levels of usage (or underpinning models which make predictions of such elevated usage), the greater the degree of confidence in the evidence will be. Consequently the score of any proposals will be higher when judged on this assessment criteria. Wherever it is available, supporting corroborative evidence indicative of persistence of use at higher densities should be provided e.g. proximity of breeding colonies, location of known static habitat features (e.g. shallow offshore reefs and tidal races) etc.

Bony Fish/Elasmobranch specific approach

The emphasis for bony fish/elasmobranchs should be on understanding their behaviour. A number of provisional criteria by which the highly mobile species should be considered include:

- Is the species known to demonstrate spatial aggregation behaviour at any time during its life cycle (e.g. nursery grounds, spawning areas)?
- If yes, do the species aggregations occur in predictable locations over a number of years?

- If yes, do we have enough data and information to support the identification of these areas?

Following identification of potential sites, proposals should include a literature review in order to provide background material for any subsequent assessments. The literature review should primarily use peer-reviewed publications but where these aren't available grey literature may be used. For each species, information is required on its range and whether it forms spatially discrete aggregations at specific periods of its lifecycle or to undertake specific behaviours. These may include spawning, nursery, or feeding areas. Modelled data that is not ground-truthed is unlikely to be suitable though it could be used to identify areas to target future work. Nesting data (e.g. black bream), side-scan data, tagging data, discards, scientific survey and peer-reviewed literature are all considered to be relevant data sources.

Annex 2 – Third-party highly mobile species MCZ submissions template (from JNCC and Natural England 2016a)

GENERAL INFORMATION	
Contact Details	Postal address, email address and phone number for lead contact person regarding the proposal
Suggested Name of proposal	xxxxx draft MCZ
Description of Site	Provide a brief overview of the characteristics of the site, e.g. location, ecology of the area, importance of the species being considered for spatial protection.
Proposed highly mobile species protected feature(s)	• Bulleted list of common (and scientific name)
Other supporting habitats, geology/geomorphology, oceanographic processes or species where they are ecologically linked to the proposed highly mobile species protected feature(s)	Bulleted list with an indication of how supporting habitats, geology/geomorphology, oceanographic processes or species are ecologically *linked to the proposed highly mobile species protected feature(s)*. If not relevant, enter 'N/A'.
Proposed aims of the Marine Conservation Zone	The proposal should be realistic about what the MCZ is likely to achieve in terms of contributing to the conservation of the species, and demonstrate an understanding of the degree to which existing spatial (e.g. SACs, SPAs, SSSIs) and wider seas measures already afford protection to the proposed highly mobile species.
ASSESSMENT AGAINST HIGHLY MOBILE SPECIES MCZ PRINCIPLES	
Principle 1 – What evidence is there that the proposed MCZ is considered to be of ecological significance to the life history of the proposed highly mobile species protected features and how will proposal(s) deliver effective conservation benefits for the proposed highly mobile species protected feature(s)?	When selecting MCZs for highly mobile species, particular attention should be given to including important areas for key life cycle stages of species and areas important for key behaviours. Provide a synopsis of available evidence that supports the ecological significance of the proposed MCZ for each proposed highly mobile species protected feature in comparison to surrounding waters. Please include citations and references (see final row of the submission template for an entry space for references) and include hyperlinks to where these references can be accessed. If references are not freely available, a copy of these should be included as an addendum to your submission package. Any unpublished material used to support a proposal must be accompanied with a description of the quality process used to verify the data, its analysis and conclusions. You should also provide an overview of the scale at which the proposal (or proposals) has been considered (e.g. at the bio-geographic or UK level) and how this particular proposal (or group of proposals if multiple sites are being considered) will benefit the conservation of the given species.

	As mentioned above, it is important to demonstrate an understanding of the degree to which existing spatial (e.g. SACs, SPAs) and wider seas measures already afford sufficient protection to the proposed highly mobile species protected feature(s), e.g. considering aspects such as connectivity between proposed and existing sites and what the proposed MCZ will contribute above existing protection.
Principle 2 – What evidence is there that numbers of the proposed protected features persist over time (allowing for natural seasonal and inter-annual variation) and occur at higher densities in contrast to the surrounding sea area?	For highly mobile species, it is essential to demonstrate that the area being considered for an MCZ proposal includes greater numbers of individuals than elsewhere; either in the local vicinity, surrounding region or across English Waters and Northern Irish Offshore Waters. In addition, it is also important to demonstrate than an elevated number of individuals in the area being considered for an MCZ are not short-term, ephemeral events but occur on either a permanent or on a regular (e.g. seasonal) basis and have done so for a number of years. You should refer to the detail contained within Annex II of this paper for best-practice examples in considering persistence of species in the context of identifying MPAs. For each proposed protected highly mobile species, you should provide: • An overview of current species distribution in a wider geographic context such as UK and/or English Waters and Northern Irish Offshore Waters including appropriate information sources for each proposed highly mobile species protected feature; • An overview of numbers of individuals for each proposed highly mobile species protected feature within the proposed MCZ relative to the wider area (whether that be locally, regionally or nationally); • An overview of evidence in support of the permanency or regularity of the occurrence of significant aggregations of each proposed highly mobile species protected feature within the proposed MCZ, In each case, commentary should be provided on the source and age of the underpinning evidence, how it has been collected, how it has been processed (e.g. effort-corrected, statistical analysis/modelling routines etc.) and the number of years' data spans. Information on any uncertainties regarding the data or levels of confidence in it must also be provided. The evidence supporting proposals is expected to be the best available and appropriate for the intended purpose of the proposed MCZ with respect to the species concerned. For example, an area being proposed as an MCZ due to its importance as a calving area for a species of cetacean should include adult: young ratio and demonstrate the increased value of the area in comparison to the surrounding waters.

	Data should be supplied on a species by species basis. Aggregated species data will not be considered in the evaluation of proposals. However, where a site is demonstrated to be important for more than one species that should be made clear and supporting evidence provided for each species. Any overlap of evidence from different data sources in suggested areas of importance should be presented wherever possible when identifying sites. Population data must be effort-corrected (as a minimum) on a species by species basis to mitigate the risk of analysis being biased by a concentration of survey effort in a particular location. It is equally important to know where a species does not occur in high densities.
Principle 3 – How have you ensured that the scale of the proposed MCZ is appropriate for the conservation of the proposed protected features?	To ensure any proposed MCZs for highly mobile species are viable, a rationale on the appropriateness of the size of the proposed MCZ must be given. Any evidence to show there is a clear functional link between species distribution and supporting habitats, oceanographic processes or other species etc. must be provided if such proxies are used for boundary delineation of the proposed MCZ. Additional guidelines developed for the identification of Harbour Porpoise SACs may also be relevant for other highly mobile species, especially where a modelled approach is used, leaving blocky or gridded outputs. For example: • The 'coastal' edge of sites should be defined by the Mean Low Water (MLW) tide line; • Site boundaries should be aligned with the UK EEZ boundary where the outer boundary of a proposed MCZ comes close to the UK EEZ; and • Modifications of the boundary to align to the criteria (e.g. reducing the no. of lines), should not alter the total area of the site by more than approximately 5%. *Note MCZs for highly mobile species should following the MCZ boundary setting principles outlined in Natural England and JNCC (2010); i.e. ensuring a minimum number of straight lines, ensuring compact shapes tightly aligned to features (including an appropriate margin if considered necessary to achieve conservation of the features), combining adjoining discrete locations.*
Principle 4 – How have you considered management requirements to best ensure the conservation objectives of the proposed protected features are met?	Consideration should be given to the value of site-based versus wider (possibly already existing) protection measures to offer greatest conservation benefit to the species. Site-based measures may be particularly useful where localised threats are present. Evidence should demonstrate that an MCZ and associated localised management measures will clearly add additional conservation benefit to the species at a

	population or sub-population level, beyond that of any other existing measures. The proposal should also include options for managing the threats to which the proposed highly mobile species protected features are sensitive, taking account of legal responsibilities. If possible, a review of new economic and social uses that may be affected if the proposal is accepted should be provided.
SUPPORTING MAPS	
Include map(s) of the proposed MCZ boundary, and records of highly mobile species proposed for protection. It would be helpful if data source and age were also easily discernible from the map(s). In some cases, it may be appropriate to show multiple mapping outputs, e.g. where annual or seasonal abundance trends need to be shown or to display the data at various stages of processing (such as raw data, effort corrected data, modelling outputs etc...) to help the assessors follow the rationale behind any proposal being considered. *If printed copies of maps are submitted for consideration, they must be accompanied by an electronic file listing the coordinates of main boundary lines for the proposed MCZ. If an electronic version of maps is being submitted please also include a GIS package with all supporting data and the proposed MCZ boundary in your submission. Ideally*, *GIS files should be provided with INSPIRE compliant metadata (e.g. the INSPIRE metadata template available in ESRI ArcGIS entered through ArcCatalog).*	
REFERENCES	List all references to support the proposal. If possible, include hyperlinks to where the supporting cited literature is available online.

Annex 3 – Assessment framework applied to third-party MCZ submissions for highly mobile species by JNCC and Natural England (from Table 5 of JNCC and Natural England 2016a)

Assessment area	Scoring criteria
Principle 1 **Ecological significance** *Assess what evidence is provided to show the proposed MCZ is considered to have ecological significance to the life history of the proposed highly mobile species features*	**High** – There is a significant body of reliable, empirically-based evidence supporting the conclusion that the area has clear ecological significance to the life-histories of the species for designation as a feature of an MCZ. This evidence is based on at least one high quality source of data, ideally derived from more than one independent source of information. There is a convincing case that for each feature, the proposed MCZ makes a significant contribution to the life cycle of the species due to its role in providing supporting habitats or processes and it makes a contribution to the representivity, replication and / or connectivity of sites within the MPA network, and to the adequacy of the network as a whole. **Moderate** – Evidence that the area is of ecological significance to the life-histories of the species for designation as a feature of an MCZ based on one or more data sources, the reliability of which may be open to question due to e.g. lack of corroborative information, lack of confidence in the analysis, and in some cases the age of the underlying data. The case that the proposed site makes a significant contribution to supporting the life cycle of each feature and contributes to the MPA network is less compelling. For example, the case would be less compelling if the criteria being proposed are fulfilled to a high degree by existing contributions to the MPA network. **Low** – Evidence that the area has ecological significance to the life-histories of the species is based only on data sources of unknown quality or low reliability or of greater age (with no recent data), or is predominantly based on expert judgement/inference without independent corroboration. The proposed site makes a significant contribution to the life history of each feature, or enhances the MPA network as a whole is not compelling. For example, the proposed conservation benefit is already fulfilled by existing sites in the MPA network, or by wider conservation measures. **Not met** – No suitable evidence is provided that the area has ecological significance to the life-histories of the species or the evidence is insufficient to allow such a conclusion to be reached. The case supporting each feature is not made at all or is insufficient.
Principle 2 **Persistence**	*Please see end of table for best-practice approaches to considering the principle of persistence.* **High** – There is a significant body of reliable, empirically-based evidence (and/or where appropriate modelled) to support the conclusion that the area is likely to have persistent presence at higher densities of the species proposed as a protected feature of an MCZ than the surrounding waters; the justification should show the data within the proposed MCZ in its wider context. Such evidence is based on at least one high quality source of data, but ideally is derived from more than one

	independent source of information.
Assess what evidence is provided to show the densities/abundance estimates of the proposed species features persistence over time (allowing for natural seasonal and inter-annual variation) and occur at higher densities in contrast to the surrounding sea area	Underlying data are considered high quality; they have large and representative sample sizes (accounting for inter-annual and seasonal variation) and were collected over an adequate period of time (refer to Annex II for species specific detail). Data are appropriately collected and analysed according to best practice, (e.g. effort-corrected sightings data, robust modelling approaches) and yields outputs that have low levels of uncertainty. Data provided are appropriate to the ecological scale of the species population or sub-population and are supplied on a species-by-species basis **Moderate** – There is some evidence that the area supports the persistent presence of the feature at higher densities than the surrounding waters (by placing data within the proposed MCZ in its wider context) for a suitable period of time (see Annex II). The proposal is based on a data source or sources whose reliability may be open to question due to issues such as a shorter time span of data, lack of corroborative information, a higher proportion of older data, lack of quality review or evidence of quality assurance and/or inter- and annual seasonal variation reducing confidence. Elevated densities are demonstrated in the majority of years. Underlying data are considered to have only moderate quality. That is, they have moderate sample sizes, elevated densities are demonstrated only in the majority of years with consideration of inter-annual and seasonal variation, data are appropriately collected and analysed according to best practice (e.g. effort-corrected sightings data, robust modelling approaches) but may yield outputs that have moderate levels of uncertainty. Data provided are appropriate to the ecological scale of the species population or sub-population and are supplied on a species-by-species basis. **Low** – The evidence that the area supports the persistent presence of the feature at higher densities than the surrounding waters is based only on a single data source or sources of low or unknown reliability, or which are short-term and/or many years old. Elevated densities are only demonstrated in a minority of years or the evidence does not allow the data within the proposed MCZ to be placed in the wider context at the scale of the features population or sub-population. Underlying data are considered low quality; that is they may have insufficient and unrepresentative sampling, have inherent biases, may not be collected over a sufficient period of time, may not be appropriately collected according to best practice, may not be appropriately analysed according to best practice (e.g. not effort-corrected sightings data, questionable modelling approaches) and/or may yield outputs that have a high degree of uncertainty. **Not met** – The evidence suggesting the area supports the persistent presence of the feature at higher densities than the

	surrounding waters is not provided or is insufficient to allow such a conclusion to be reached. The underlying data are not considered to have the appropriate quality with which to demonstrate persistent presence of the species within the proposed MCZ in contrast to surrounding waters. Typically the data are too old or the study has insufficient sampling effort, insufficient duration and/or poor survey design, and there is high uncertainty around population estimates etc.
Principle 3 **MPA size and delineation** *Test whether the scale of the proposed MCZ is appropriate for the conservation of the proposed species features*	**High** – There is a strong evidence base to demonstrate that the size and shape of the area included within the proposed MCZ boundary is appropriate to that required to ensure the viability of the site; that is, it will most likely maintain the integrity of its features and/or additional features that are ecologically relevant to the species proposed for designation in a MCZ. A significant body of reliable, recent, empirically-based evidence has been used to determine the location of the proposed MCZ boundary. This evidence is based on at least one high quality source of data, but ideally is derived from more than one independent source of information. Underlying data are considered to have good quality; (i.e. there are large and representative sample sizes, they account for inter-annual and seasonal variation, they are appropriately collected according to best practice and have been appropriately analysed according to best practice (e.g. effort-corrected sightings data, robust modelling approaches), and yield boundaries that have low levels of uncertainty in their construction. The proposal clearly demonstrates that the guidelines regarding boundary setting outlined in the ENG have been adhered to as appropriate. **Moderate** - There is a reasonable evidence base to demonstrate that the size and shape of the area included within the proposed MCZ boundary is appropriate to that required to ensure the viability of the site. That is, it will most likely maintain the integrity of its features and/or additional features that are ecologically relevant to the species proposed for designation in a MCZ. An adequate body of reliable, empirically-based evidence has been used to determine the location of the boundary. This evidence is based on a data source or sources whose reliability may be open to question due to issues such as a lack of corroborative information and/or significant age of underlying data. Underlying data are considered to have only moderate quality: i.e. they have moderate sample sizes, they account for inter-annual and seasonal variation; they are appropriately collected and have been appropriately analysed (e.g. effort-corrected sightings data, robust modelling approaches) but only yield boundaries that have moderate levels of uncertainty in their construction. The proposal clearly demonstrates that the guidelines regarding boundary setting outlined in the ENG have been adhered to, where appropriate. **Low** – The evidence to demonstrate that the size and shape of the area included within the proposed MCZ boundary is not appropriate to that required to ensure the viability of the site; that is, it is questionable how the site will maintain the integrity of its features and/or additional features which are ecologically relevant to the species proposed for designation in a MCZ. The evidence is based on a single data source or sources of unknown or low reliability or of significant age, or is

	predominantly based on expert judgement/inference for which quality assurance is not provided, or does not allow the data within the proposed MCZ to be placed in a wider context to define a clear boundary. Underlying data are considered to have low quality: e.g. there is insufficient and unrepresentative sampling, they may have inherent biases, may not be collected over a sufficient period of time, may not be appropriately collected according to best practice, may not be appropriately analysed according to best practice (e.g. not effort-corrected sightings data, questionable modelling approaches), and yield boundaries that have a high degree of uncertainty in their placement. The proposal does not clearly demonstrate that the guidelines regarding boundary setting outlined in the ENG have been adhered to, where appropriate. **Not met** – The evidence is not provided or is insufficient to allow any conclusion to be reached that the size and shape of the area included within the proposed MCZ boundary is appropriate to that required to ensure the viability of the site. The underlying data are not considered to have the appropriate quality with which to delineate a boundary between areas of elevated and persistent species presence inside the proposed MCZ in contrast to that in surrounding waters. It is likely the data are too old, and there was insufficient sampling effort, insufficient duration, poor survey design and high uncertainty around population estimates. The proposal does not show the guidelines regarding boundary setting outlined in the ENG have been followed.
Principle 4 **Appropriateness of management** *Test whether management requirements have been considered to best ensure the conservation objectives of the proposed species features are met*	**High** – The proposal provides a comprehensive account of the range of activities which take place within (or otherwise have an influence within) the proposed MCZ that will have an adverse impact on the status of the species proposed for designation. The evidence demonstrates the levels at which the activities occur, where and when they occur, and describe any existing management measures in place to reduce the effects of those activities on the species, or any additional features that are ecologically relevant to the species proposed for designation in the MCZ. Clear evidence is presented that shows: i) there are ongoing activities in the area, or other identified threats, which are likely to give rise to pressures to which the species is known to be highly or moderately sensitive, and are likely to have the potential to impact the conservation status of the species at the population or sub-population level; and, ii) any existing wider measures are not sufficient to address the threats posed to the species within the proposed MCZ. Possible management options are clearly identified that are highly likely to reduce the effect of damaging activities on the proposed species features and will enable conservation objectives to be met. These management options are appropriate for MCZ-based protection. **Moderate** – The proposal provides a comprehensive account of the range of activities which take place within the proposed

	MCZ (or otherwise have an influence within it) that will have an adverse impact on the status of the species proposed for designation. The evidence demonstrates the levels at which the activities occur, where and when they occur, and describe any existing management measures in place to reduce their effects on the species, or any additional features that are ecologically relevant to the species proposed for designation. Some evidence is presented that shows: i) there are ongoing activities in the area, or other identified threats which are likely to give rise to pressures to which the species may be highly or moderately sensitive, and may have the potential to impact the conservation status of the species at the population or sub-population level; and, ii) any existing wider measures may not be sufficient to address the threats posed to the species within the proposed MCZ boundary. Possible management options have been identified that are likely to reduce the effect of damaging activities on the proposed species features and will enable conservation objectives to be met. These management options are appropriate for MCZ-based protection. **Low** - The proposal only provides a superficial and/or an unreliable account of the range of activities which take place within the proposed MCZ (or otherwise have an influence within it) that may have an adverse impact on the status of the species proposed for designation. The evidence does not show the levels at which activities occur, nor where and when they occur nor any existing management measures in place to reduce their effects on the species and/or any additional features which are ecologically relevant to the species proposed for designation. There is only limited evidence presented that shows: i) there are ongoing activities in the area, or other identified threats that are likely to give rise to pressures to which the species may be highly or moderately sensitive, or only evidence regarding activities yielding pressures to which the feature has low sensitivity, that may have the potential to impact the conservation of the species at the population or sub-population level; and, ii) existing wider measures may not be sufficient to address the threats posed within the proposed MCZ boundary. Possible management options have not been identified to reduce the effect of damaging activities on the proposed features to enable conservation objectives to be met. Nevertheless, the evidence indicates an MCZ-based approach appears feasible. **Not met** – The proposal only provides a superficial and/or unreliable account of the range of activities which take place

	within the proposed MCZ (or otherwise have an influence within it) that may have an adverse impact on the status of the species proposed for designation. It does not describe the levels at which activities occur, nor where and when they occur nor any existing management measures in place to reduce the effects of those activities on the species or any additional features that are ecologically relevant to the species proposed for designation. No credible evidence is presented that shows: i) there are ongoing activities in the area, or other identified threats that are likely to give rise to pressures to which the proposed highly mobile species protected features has any degree of sensitivity; ii) that any activities occurring within or near the proposed MCZ have the potential to affect the conservation of the proposed species at the population or sub-population level; or, iii) that existing wider seas measures are not sufficient for achieving the adequate conservation of the species. Possible management options have not been identified to reduce the effect of damaging activities on the proposed species features and enable conservation objectives to be met. It is clear that an MCZ-based management approach is either not feasible or not required.

Annex 4 – Criteria for principles 1–3 which have been applied to the evidence for each site/species and which have formed the basis for the assessments in this document that relate to the presence and extent of the mobile species features (from Table 5 of JNCC and Natural England 2016a)

	Assessment
Principle 1: Ecological significance	
Significant body of reliable, empirically-based evidence supporting the conclusion that the area has clear ecological significance to the life-histories of the species for designation as a feature of an MCZ based on at least one high quality source of data, ideally derived from more than one independent source of information.	High
There is a convincing case that for each feature, the proposed MCZ makes a significant contribution to the life cycle of the species due to its role in providing supporting habitats or processes and it makes a contribution to the representivity, replication and / or connectivity of sites within the MPA network, and to the adequacy of the network as a whole.	
There is evidence that the area is of ecological significance to the life-histories of the species as a feature of an MCZ based on one or more data sources, the reliability of which may be open to question due to e.g. lack of corroborative information, lack of confidence in the analysis, and in some cases the age of the underlying data.	Moderate
There is a less compelling case that the proposed site makes a significant contribution to supporting the life cycle of each feature and contributes to the MPA network is less compelling.	
There is evidence that the area has ecological significance to the life-histories of the species is based only on data sources of unknown quality or low reliability or of greater age (with no recent data), or is predominantly based on expert judgement/inference without independent corroboration.	Low
The case that proposed site makes a significant contribution to the life history of each feature, or enhances the MPA network as a whole is not compelling. For example, the proposed conservation benefit is already fulfilled by existing sites in the MPA network, or by wider conservation measures.	
No suitable evidence is provided that the area has ecological significance to the life-histories of the species or the evidence is insufficient to allow such a conclusion to be reached. The case supporting each feature is not made at all or is insufficient.	Not met
Principle 2: Persistence	
There is a significant body of reliable, empirically-based evidence (and/or where appropriate modelled) to support the conclusion that the area is likely to have persistent presence at higher densities of the species proposed as a protected feature of an MCZ than the surrounding waters; the justification should show the data within the proposed MCZ in its wider context. Such evidence is based on at least one high quality source of data, but ideally is derived from more than one independent source of information.	High
Underlying data are considered high quality; they have large and representative sample sizes (accounting for inter-annual and seasonal variation) and were collected over an adequate period of time (refer to Annex II for species specific detail). Data are appropriately collected and analysed according to best practice, (e.g. effort-corrected sightings data, robust modelling approaches) and yields outputs that have low levels of uncertainty. Data provided are appropriate to the ecological scale of the species population or subpopulation and are supplied on a species-by-species basis	
There is some evidence that the area supports the persistent presence of the feature at higher densities than the surrounding waters (by placing data within the proposed MCZ in its wider context) for a suitable period of time. The proposal is based on a data source or sources whose reliability may be open to question due to issues such as a shorter time span of data, lack of corroborative information, a higher proportion of older data, lack of quality review or evidence of quality assurance and/or inter- and annual seasonal variation reducing confidence. Elevated densities are demonstrated in the majority of years.	Moderate
Underlying data are considered to have only moderate quality. That is, they have moderate sample sizes, elevated densities are demonstrated only in the majority of years with consideration of inter-annual and seasonal variation, data are appropriately collected and analysed according to best practice (e.g. effort-corrected sightings data, robust modelling approaches) but may yield outputs that have moderate levels of uncertainty Data provided are appropriate to the ecological scale of the species population or sub-population and are supplied on a species-by species basis.	

The evidence that the area supports the persistent presence of the feature at higher densities than the surrounding waters is based only on a single data source or sources of low or unknown reliability, or which are short-term and/or many years old. Elevated densities are only demonstrated in a minority of years or the evidence does not allow the data within the proposed MCZ to be placed in the wider context at the scale of the features population or sub-population.	Low
Underlying data are considered low quality; that is they may have insufficient and unrepresentative sampling, have inherent biases, may not be collected over a sufficient period of time, may not be appropriately collected according to best practice, may not be appropriately analysed according to best practice (e.g. not effort corrected sightings data, questionable modelling approaches) and/or may yield outputs that have a high degree of uncertainty.	
The evidence suggesting the area supports the persistent presence of the feature at higher densities than the surrounding waters is not provided or is insufficient to allow such a conclusion to be reached. The underlying data are not considered to have the appropriate quality with which to demonstrate persistent presence of the species within the proposed MCZ in contrast to surrounding waters. Typically the data are too old or the study has insufficient sampling effort, insufficient duration and/or poor survey design, and there is high uncertainty around population estimates etc.	Not met
Principle 3: MPA Size and delineation	
There is a strong evidence base to demonstrate that the size and shape of the area included within the proposed MCZ boundary is appropriate to that required to ensure the viability of the site; that is, it will most likely maintain the integrity of its features and/or additional features that are ecologically relevant to the species proposed for designation in a MCZ. A significant body of reliable, recent, empirically-based evidence has been used to determine the location of the proposed MCZ boundary. This evidence is based on at least one high quality source of data, but ideally is derived from more than one independent source of information.	High
Underlying data are considered to have good quality; (i.e. there are large and representative sample sizes, they account for inter-annual and seasonal variation, they are appropriately collected according to best practice and have been appropriately analysed according to best practice (e.g. effort-corrected sightings data, robust modelling approaches), and yield boundaries that have low levels of uncertainty in their construction.	
There is a reasonable evidence base to demonstrate that the size and shape of the area included within the proposed MCZ boundary is appropriate to that required to ensure the viability of the site. That is, it will most likely maintain the integrity of its features and/or additional features that are ecologically relevant to the species proposed for designation in a MCZ. An adequate body of reliable, empirically-based evidence has been used to determine the location of the boundary. This evidence is based on a data source or sources whose reliability may be open to question due to issues such as a lack of corroborative information and/or significant age of underlying data.	Moderate
Underlying data are considered to have only moderate quality: i.e. they have moderate sample sizes, they account for inter-annual and seasonal variation; they are appropriately collected and have been appropriately analysed (e.g. effort-corrected sightings data, robust modelling approaches) but only yield boundaries that have moderate levels of uncertainty in their construction.	
The evidence to demonstrate that the size and shape of the area included within the proposed MCZ boundary is not appropriate to that required to ensure the viability of the site; that is, it is questionable how the site will maintain the integrity of its features and/or additional features which are ecologically relevant to the species proposed for designation in a MCZ. The evidence is based on a single data source or sources of unknown or low reliability or of significant age, or is predominantly based on expert judgement/inference for which quality assurance is not provided, or does not allow the data within the proposed MCZ to be placed in a wider context to define a clear boundary.	Low
Underlying data are considered to have low quality: e.g. there is insufficient and unrepresentative sampling, they may have inherent biases, may not be collected over a sufficient period of time, may not be appropriately collected according to best practice, may not be appropriately analysed according to best practice (e.g. not effort-corrected sightings data, questionable modelling approaches), and yield boundaries that have a high degree of uncertainty in their placement.	
The evidence is not provided or is insufficient to allow any conclusion to be reached that the size and shape of the area included within the proposed MCZ boundary is appropriate to that required to ensure the viability of the site. The underlying data are not considered to have the appropriate quality with which to delineate a boundary between areas of elevated and persistent species presence inside the proposed MCZ in contrast to that in surrounding waters. It is likely the data are too old, and there was insufficient sampling effort, insufficient duration, poor survey design and high uncertainty around population estimates.	Not met

Annex 5 – Overview of the evidence sources underpinning the application of generic maintenance extensions around breeding seabird colonies

1 Introduction

In this Annex, a brief review of two reports published by JNCC is presented. This work by JNCC sought to define the areas of sea around colonies of breeding auks and other species including Manx Shearwater that are, in general, of greatest importance to the well-being of those colonies by supporting active maintenance behaviours by auks and several other species and by supporting evening 'rafting' behaviour by Manx shearwaters. This work has provided the evidence base for the implementation of 'generic' maintenance extensions out to sea at many Special Protection Areas (SPAs) supporting breeding colonies of these birds. The same work is considered to provide a sound evidence base for the inclusion of such 'generic' maintenance extensions out to sea within Marine Conservation Zones (MCZs) adjacent to Sites of Special Scientific Interest (SSSIs) supporting breeding colonies of these birds. The review is structured so as to present information regarding aspects of these pieces of work by JNCC that are of relevance to the first three of the four overarching principles regarding MCZs for highly mobile species, as set out in JNCC and Natural England (2016).

2 Principle 1: Ecological significance

Breeding adult seabirds including, in particular, common guillemot, razorbill and Manx shearwater use marine waters to obtain all of their and their chicks' food requirements. Colony nesting seabirds are central place foragers, gathering food resources out at sea and returning to the nest after each foraging trip. Foraging trips are often made over considerable distances to feeding grounds that are remote from the colony. The mean of maximum recorded foraging ranges of common guillemot, razorbill and Manx Shearwater are reported to be 84 kilometre, 49 kilometre and 330 kilometre (Thaxter *et al*. 2012). However, in addition to feeding at sea, breeding seabirds also require to spend time engaged in non-feeding activities at sea which are essential to their well-being i.e. displaying, washing and preening. It has long been known that many species of seabirds use waters immediately adjacent to their colonies to undertake such 'maintenance' behaviours (Birkhead 1976; Furness 1983; Tasker and Leaper 1993; Harding and Riley 2000). Furthermore, Manx Shearwaters, which only come ashore under cover of darkness in the breeding season, assemble in the evening in flocks or 'rafts' on the surface of the sea 1-10 kilometres from the colony shore (Brooke 1990). The function of evening rafting behaviour by Manx Shearwaters is not known for certain, but it is thought to be due to the fact that the birds forage at large distances from the colony and cannot precisely time their return to the colony to coincide with nightfall, so they assemble to wait until it is safe to land (Warham 1990). Rafts may also provide an arena for courtship behaviour and other social interactions, as well as maintenance behaviour such as preening and resting (Warham 1996).

Seabirds, such as auks and shearwaters, utilising the marine environment adjacent to colonies face various threats when in such areas e.g. oil pollution, fishing gear entanglement and disturbance due to leisure activities (Tasker and Leaper 1993; Harding and Riley 2000). In recognition of this existing knowledge of patterns of use of sea areas around colonies by breeding seabirds, and of the potential threats to the birds in these areas, JNCC undertook a programme of survey and analytical work to establish a reliable evidence base upon which to make the case to define the extent of sea areas around seabird colonies which are of greatest ecological significance to them due to their supporting birds engaged in these maintenance activities (McSorley *et al.* 2003; 2008).

2.1 Auks

The work by JNCC on auks made a clear distinction between behaviours which are likely to be site-specific and non-site-specific. The former probably result in seabird distribution patterns that are largely

generated by physical and oceanographic attributes of the sea areas around each specific colony such that variation between sites with respect to such habitat features would preclude generalisation across sites (e.g. the distribution of birds engaged in feeding behaviour is likely to be governed by the distribution of their prey, which in turn will be determined by habitat features of the area). The latter were defined by McSorley *et al* (2003) as those behaviours that do not result in distribution patterns that are governed by habitat features of the site. McSorley *et al* (2003) assumed that behaviours such as bathing, preening and displaying may be carried out on any part of the sea adjacent to colonies such that these patterns are more likely to be representative of patterns of occurrence that may be sufficiently general as to be applicable to waters adjacent to other colonies. Analyses of the empirical data on the distribution of birds engaged only in such activities, confirmed this consistency of distribution patterns across colonies and McSorley *et al* (2003, 2006) concluded that waters within one kilometre of colonies of guillemot and razorbill colonies should be included within marine extensions to existing coastal SPAs for these species on the basis of their supporting significantly greater densities of birds engaged in active maintenance behaviours than waters beyond these limits and therefore being of greater ecological significance to the well-being of the birds at the colony. Acceptance of the evidence regarding the ecological significance of such waters to seabird colonies supporting auks has been demonstrated by implementation of such extensions at many sites in Scottish waters and at two pSPAs in English waters i.e. at Flamborough Head & Filey Coast pSPA and Northumberland Marine pSPA.

2.2 Manx Shearwater

The work by JNCC on Manx Shearwaters (McSorley *et al.* 2008) analysed the distribution of only those records of birds that were considered to be engaged in rafting behaviour (any bearings that were clearly incorrect or were for birds that were flying or feeding being removed from the analyses). This analysis confirmed that although there were differences between colonies in the full extent of sea area around them that appeared of greatest importance to rafting birds, there was consistency of distribution patterns across colonies in that in all cases, waters within four kilometres of colonies of Manx Shearwaters were always heavily used for rafting.

McSorley *et al*. (2008) noted that any extension of boundaries for SPAs supporting breeding Manx Shearwaters into the marine environment should be focussed on areas on which birds from those SPA sites are ecologically dependent i.e. those areas ensuring their survival and reproduction. The results of McSorley et al (2008) indicated that rafting behaviour was recorded at least twice during the study, by 40-98% of tagged birds. Given that their results showed minimum frequencies, it is reasonable to conclude that most tagged birds regularly engaged in rafting behaviour. Given the numbers of birds observed to be involved in rafting (tens of thousands in some cases; Brooke 1990), it is likely that most breeding birds attend rafts before coming ashore, on at least some occasions. Consequently, McSorley et al (2008) concluded that the waters around colonies used for rafting would appear to be an essential resource for breeding Manx shearwaters, on which the species is ecologically dependent.

On the basis of this, McSorley *et al* (2008) recommended that waters within four kilometres should be included within marine extensions to existing coastal SPAs for this species on the basis of their supporting significantly greater densities of birds engaged in rafting behaviours than waters beyond these limits and therefore being of greater ecological significance to the well-being of the birds at the colony. Acceptance of the evidence base regarding the ecological significance of such waters to Manx shearwater colonies has been demonstrated by implementation of such extensions at several pSPAs in Scottish and Welsh waters e.g. at Rum pSPA.

2.3 Overview of the evidence on ecological significance

On the basis of the general nature of these findings and recommendations, it is considered that the evidence base provided by McSorley *et al* (2003; 2006; 2008) regarding the ecological significance of these particular areas of sea around colonies is equally applicable in the current context of establishing

the evidence base regarding the ecological significance of the sea area proposed to be included within MCZs which lie adjacent to a seabird colony, albeit one which is classified as a Site of Special Scientific Interest (SSSI) rather than as an SPA.

To attain a score of High in regard of this principle, the guidelines (JNCC and Natural England 2016; and Annex 4 above) require that: i) there is a significant body of reliable, empirically-based evidence supporting the conclusion that the area has clear ecological significance to the life-histories of the species for designation as a feature of an MCZ, and ii) this evidence is based on at least one high quality source of data, ideally derived from more than one independent source of information. It is considered that the nature of the empirical evidence collected by McSorley *et al.* (2003; 2006; 2008) and of its analysis by them (described in more detail below), meet these scoring criteria and so merit a score of 'High' in regard to Principle 1 Ecological Significance.

3 Principle 2: Persistence

3.1 Auks

McSorley *et al.* (2003) describe in detail the programme of field surveys and analyses of the resultant data to define the limit to sea areas around breeding seabird colonies that support the persistent presence of greater densities of seabirds engaged in active maintenance behaviours than in other waters. A brief summary of the empirical data gathering and analyses is presented here.

Survey data were gathered at six seabird colonies around the UK in June 2001 to coincide with the period of chick-rearing. Surveys were undertaken at the Farne Islands (four days), Isle of May (five days), Skomer & Skokholm (five days), Bass Rock (one day), and Grassholm (one day). Surveys were undertaken using a modified seabirds-at-sea boat-based survey method i.e. strip transects of 200 metre width with transects at various distances apart from the colony out to 4-5 kilometres from the colony (Figure 1). Only birds on the water within transect were recorded and each bird sighted was ascribed a precise time (to allow location to be determined from ship navigational data) and behaviour to distinguish between those engaged in active maintenance behaviours (bathing, preening and display) from those engaged in all other behaviours.

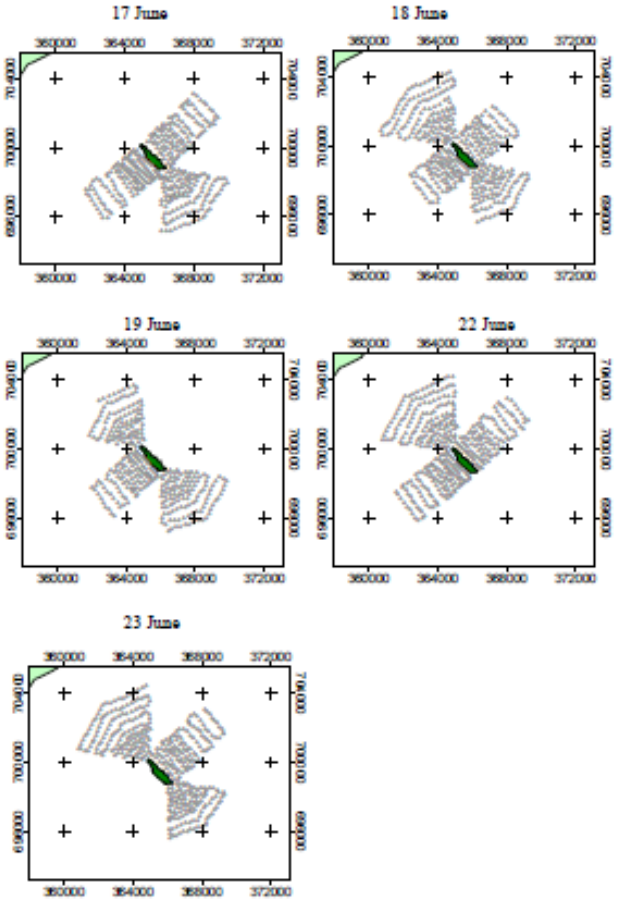

Figure 1 Maps of the areas around the Isle of May surveyed over 5 days in June 2001. Circles denote 1 minute interval positions of the survey vessel. Source: McSorley *et al.* (2003).

Across the colonies at which guillemot and razorbill were most frequently recorded, a total of approximately 17,000 common guillemots and 1,400 razorbills engaged in active maintenance behaviours were recorded across all surveys (McSorley *et al.* 2003). These records were the basis of the analyses by McSorley *et al.* (2003). The raw sightings data were processed and subjected to geostatistical interpolation i.e. kriging to generate a regular grid of interpolated density values over an entire survey region on each survey around each colony, thus filling in the gaps in coverage (McSorley *et al.* 2003) (Figure 2).

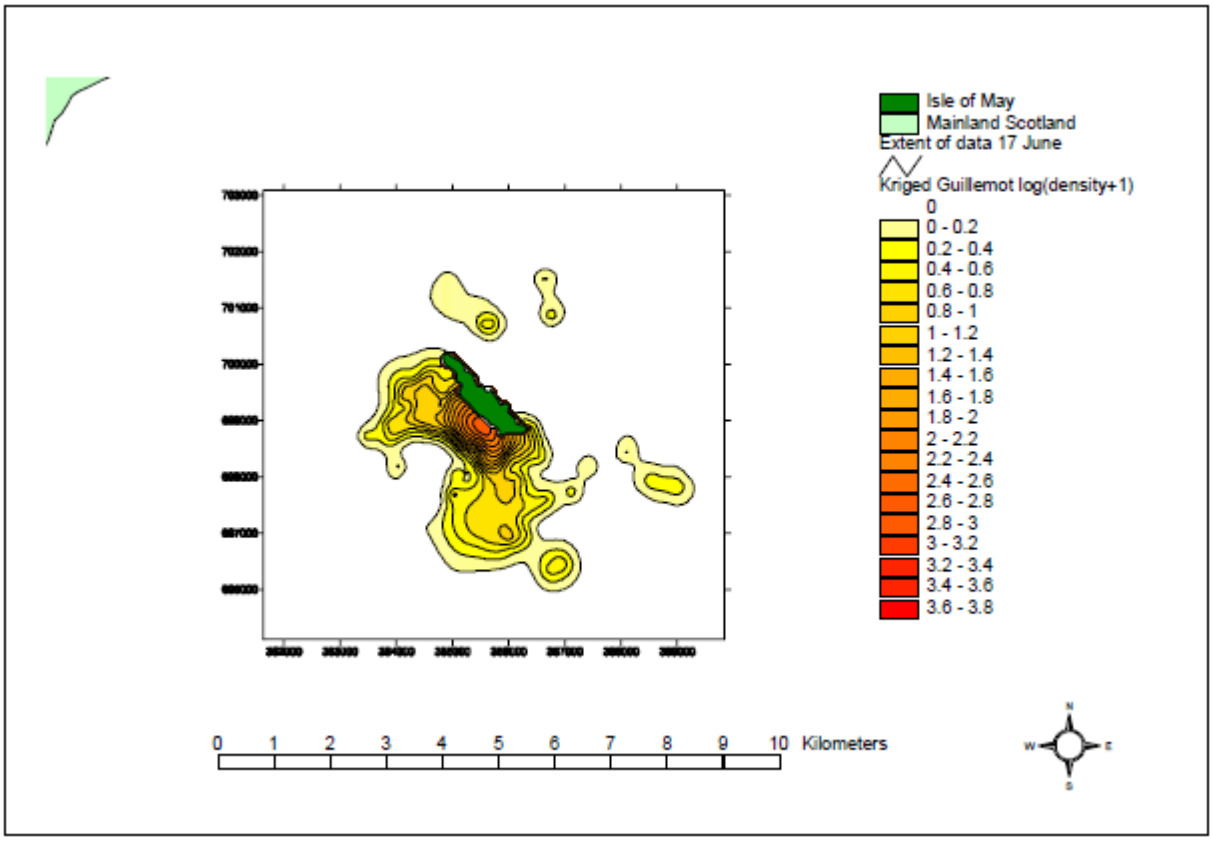

Figure 2 The spatial distribution of "active" common guillemots at the Isle of May (17 June 2001) using kriged $\log_{10}$(density+1). Grid references are GB –eastings (x-axis) and GB-northings (y-axis). Source: McSorley *et al.* (2003).

These interpolated density surfaces were then subjected to further analyses to generate average predicted densities within distance bands from each colony on each survey. The resultant relationships between average density and distance from colony on each survey (e.g. Figures 3 & 4) were used to identify the limit to the areas that could be demonstrated to persistently support greater densities of birds than surrounding waters.

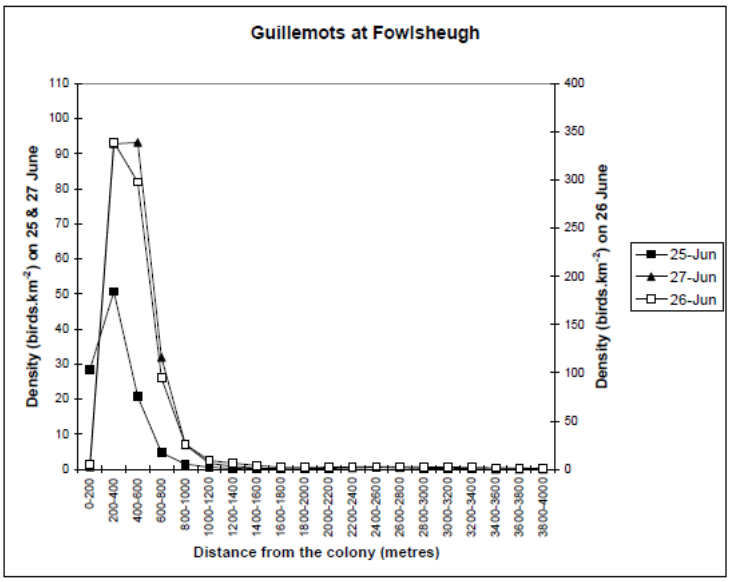

Figure 3 Mean kriged guillemot density (birds km^{-2}) in 200 metre distance bands at Fowlsheugh on 25, 26 and 27 June 2001. Source: McSorley *et al*. (2003)

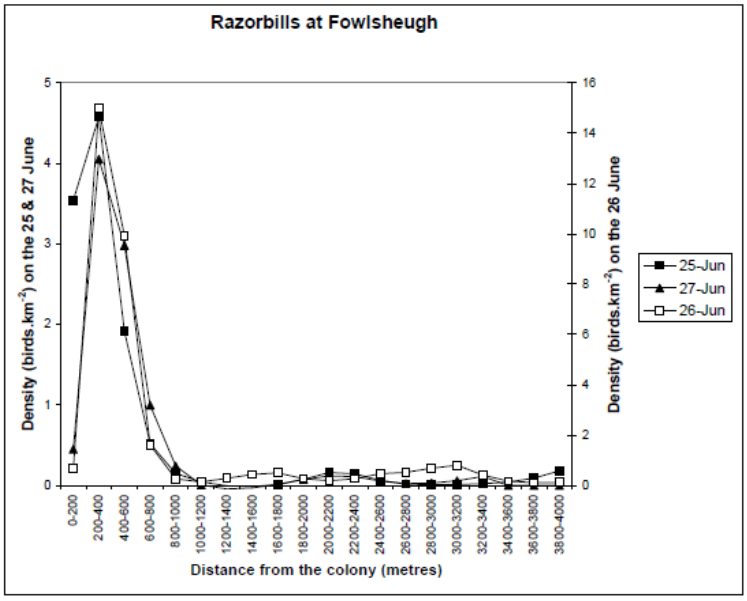

Figure 4 Mean kriged razorbill density (birds km^{-2}) in 200 metre distance bands at Fowlsheugh on 25, 26 and 27 June 2001. Source: McSorley *et al.* (2003)

In summary, there were clear and consistent patterns between surveys at individual colonies and between colonies in the spatial distribution of mean densities, despite considerable temporal and spatial variation in absolute mean densities at different colonies and on different days (Figures 3 & 4). Mean interpolated density of all species was generally highest immediately adjacent to the colony followed by a steep decline in density with increasing distance from the colony. Guillemot density reached a consistent low at 1000-1200 metres at Farnes & Fowlsheugh (Figure 3) and at 800 metres -1000 metres at Isle of May and Skokholm & Skomer. The distance from the colony at which razorbill density reached a consistent low was 800 metre -1000 metre at Fowlsheugh (Figure 4) and Skokholm & Skomer, but 600-800 metres at the Isle of May. Despite wide variation in absolute mean density of species between days at each site, the patterns of density distribution showed remarkable consistency within and between auk species and auk colonies. It was as a result of this remarkable consistency that McSorley *et al.* (2003) concluded that generic marine SPA boundaries could be defined for all colony SPAs for these species.

On the basis of the evidence, McSorley *et al.* (2003) concluded that modelled densities indicate that a marine boundary extension of one kilometre from mean low water mark around razorbill and common guillemot colonies would protect those areas with the highest mean density of birds engaged in "active" maintenance behaviours. McSorley *et al.* (2003) recommended that existing boundaries of all coastal and island colony SPAs where one or more of these species is included in the breeding seabird assemblage should be extended by one kilometre from the mean low water mark.

On the basis of the general nature of these findings and recommendations, it is considered that the evidence base provided by McSorley *et al.* (2003) is equally relevant in the current context of establishing the evidence base regarding the persistent presence of such aggregations in the sea area proposed to be included within MCZs for these species.

To attain a score of High in regard of this principle, the guidelines (JNCC and Natural England 2016; and Annex 4 above) require that: i) there is a significant body of reliable, empirically-based evidence (and/or where appropriate modelled data) to support the conclusion that the area is likely to have persistent presence at higher densities of the species proposed as a protected feature of an MCZ than the surrounding waters; ii) such evidence is based on at least one high quality source of data, but ideally is derived from more than one independent source of information; iii) underlying data are considered high quality; have large and representative sample sizes (accounting for inter-annual and seasonal variation)

and are collected over an adequate period of time; iv) data are appropriately collected and analysed according to best practice, (e.g. effort-corrected sightings data, robust modelling approaches) and yields outputs that have low levels of uncertainty. It is considered that the nature of the empirical evidence collected by McSorley *et al.* (2003) and of its analysis by them (described here in brief), both meet these scoring criteria and so merit a score of "High" in regard to Principle 2 Persistence.

3.2 Manx shearwater

McSorley *et al.* (2008) describe in detail the programme of field surveys and analyses of the resultant data to define the limit to sea areas around breeding Manx Shearwater colonies that support the persistent presence of greater densities of rafting birds than in other waters. A brief summary of the empirical data gathering and analyses is presented here.

Fieldwork took place from May to August at the UK's three largest Manx shearwater colonies namely, the islands of Skomer, Rum and Bardsey during 2003, 2004 and 2005 respectively. Radio-tags were fitted to 30, 28 and 30 breeding adults at each colony respectively. Radio-tracking took place on 14 days between 15 and 29 July 2003 (Skomer), on 15 days between 15 July and 6 August 2004 (Rum) and on 18 days between 31 July and 19 August 2005 (Bardsey). Tracking was conducted from early evening until birds returned to their colonies after nightfall. Observers used synchronised watches to take simultaneous bearings to a specific individual at the end of a three minute interval, working their way through the schedule of study birds. This procedure was followed for periods of up to 30 minutes depending on how many birds were detectable. Each location of each detectable bird was determined using biangulation (using two bearings) or triangulation (using three bearings), where the location of the tagged bird is at the crossing point of the two or three bearings taken from two or three different known locations. In total, 218, 290 and 539 bird locations were generated for Skomer, Rum and Bardsey respectively. Analyses were performed only on those birds that were thought to be rafting; data were checked prior to analyses and any bearings that were clearly incorrect, or were for birds that were flying or feeding, were removed, leaving a total of 174, 264 and 385 locations for Skomer, Rum and Bardsey respectively.

Home Range Analyses were used to identify the most important concentrations of rafting Manx shearwaters based on the estimated locations from radio-tracking. Kernel contouring analyses were employed to determine the location of the most important aggregations of rafting Manx shearwaters using the software package *Ranges6* v1.2199, Anatrack Ltd (Kenward *et al.* 2003). Because each bird generated few data, data from all birds were pooled. Therefore individual home ranges were not generated; rather a "home range" for all individuals was calculated. *Ranges6* generates a matrix of location density from a scatter of actual locations using an estimator; in this case a kernel estimator was used. *Ranges6* calculates the densities within a grid of cells, ranks them, and then assigns isoline contours (termed cores here) around each 5% of the total estimated population. In this context, a kernel core is the area covered by the cumulative 5 percentiles of the total number of locations e.g. the area covered by 5%, then 10%, 15%, 20%, 25%, etc. of the locations.

Utilisation plots showing the proportions of the total area (%) included by successive kernel cores, revealed that at each colony, the greatest decrease in proportion of area included occurred between the 100% and 95% kernel cores. This means that the outermost 5% kernel (i.e. the locations furthest away from the central kernel or aggregation) covers a greater area than each of the subsequent 5% kernels. Therefore, to describe the rafting range, McSorley *et al.* (2008) used 95% kernel cores so as not to include very large areas of sea that were not used to a significant degree by rafting birds; this is analogous with other studies using 95% cores to describe home-ranges. Maps depicting the limits to areas included within the 95% and 90% kernel cores generated using *Ranges6* for Skomer (Figure 5), Rum, and Bardsey, indicate that there is little difference in geographical extent between these areas at each colony. The maximum extent for the 95% cores (not including small 'satellite' aggregations containing only a few locations) was found to be four kilometre for Skomer (Figure 5), six kilometres for

Rum, and nine kilometres for Bardsey (McSorley *et al.* 2008). Although birds occurred at greater distances, they were not within the aggregations identified by the kernel core analyses. On the basis of these analyses McSorley *et al.* (2008) concluded that rejection of the final 5% (95-100%) of locations is sensible, as inclusion of these locations within a possible seaward boundary extension would have included very large areas of sea that were not used to a significant degree by rafting birds. On this basis, and using a precautionary approach, the area enclosed by the 95% core was chosen by McSorley *et al.* (2008) to define the area of significant use by rafting birds, and hence the extent of the marine component of the interest feature, namely rafting Manx shearwaters adjacent to the colony in the evening.

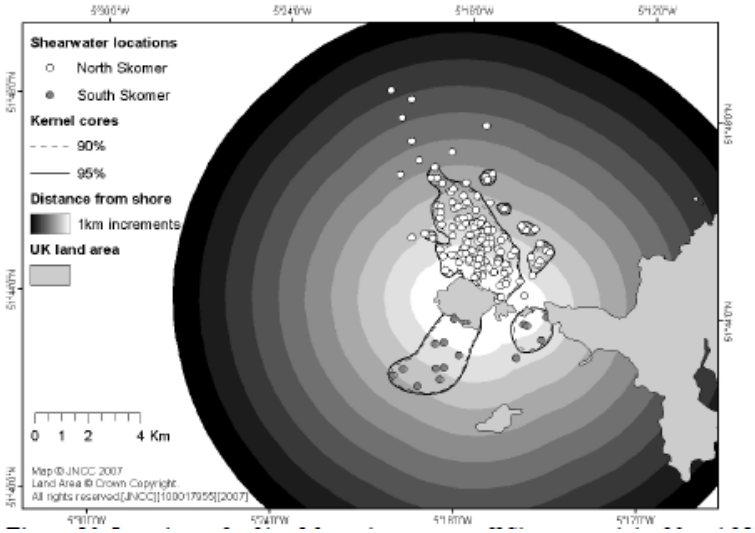

Figure 5 Locations of rafting Manx shearwaters off Skomer, and the 90% and 95% kernel cores generated from kernel analysis. Shading denotes distance from the shore at one kilometre increments. Source: McSorley *et al*. (2008).

McSorley *et al*. (2008) found that the 95% kernel cores indicate that the marine extent of the interest feature for the SPAs under consideration were defined as four kilometres from low mean water for the Skokholm and Skomer SPA (Figure 6), six kilometres from low mean water (spring) for the Rum SPA, and nine kilometres from low mean water for the qualifying part of the Glannau Aberdaron and Ynys Enlli / Aberdaron Coast and Bardsey Island SPA (i.e. Bardsey Island). The reason for the difference in the spatial extent of the interest features at these three SPAs is unknown, and McSorley *et al*. (2008) could only speculate as to what those reasons might be. Nonetheless, while they made site-specific recommendations regarding the extent of marine extensions in the case of the three studied SPAs, McSorley *et al.* (2008) recommended (emphasis added) "**on the basis that there seems relatively consistent ecological dependence on the waters around SPA breeding colonies, between years and between colonies, of at least four kilometres,** it is recommended that the boundaries of all colony SPAs for which breeding Manx shearwater is a designated feature (including St Kilda) be extended by at least four kilometres, but possibly further if available information suggests it."

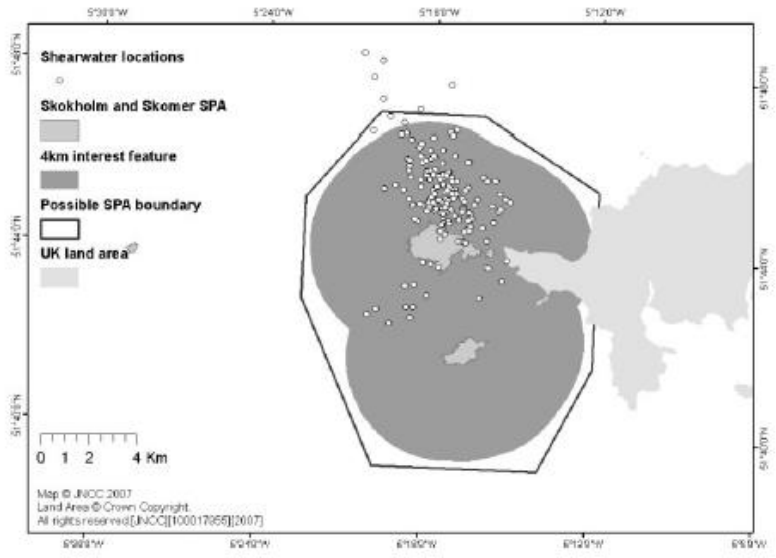

Figure 6 Map of the Skokholm and Skomer SPA showing the recommended extent of the marine component of the interest feature, and a possible SPA boundary. Source: McSorley *et al.* (2008).

On the basis of the general nature of these findings and recommendations regarding the four kilometre buffer area, it is considered that the evidence base provided by McSorley *et al*. (2008) is equally relevant in the current context of establishing the evidence base regarding the persistent presence of aggregations of rafting Manx shearwaters in the sea area proposed to be included within MCZs for this species.

To attain a score of High in regard of this principle, the guidelines (JNCC and Natural England 2016; and Annex 4 above) require that: i) there is a significant body of reliable, empirically-based evidence (and/or where appropriate modelled) to support the conclusion that the area is likely to have persistent presence at higher densities of the species proposed as a protected feature of an MCZ than the surrounding waters; ii) such evidence is based on at least one high quality source of data, but ideally is derived from more than one independent source of information; iii) underlying data are considered high quality; have large and representative sample sizes (accounting for inter-annual and seasonal variation) and are collected over an adequate period of time; iv) data are appropriately collected and analysed according to best practice, (e.g. effort-corrected sightings data, robust modelling approaches) and yields outputs that have low levels of uncertainty. It is considered that the nature of the empirical evidence collected by McSorley *et al.* (2008) and of its analysis by them (described here in brief), both meet these scoring criteria and so merit a score of 'High' in regard to Principle 2 Persistence.

4 Principle 3: MPA size and delineation

4.1 Auks

To attain a score of High in regard of this principle, the guidelines (JNCC and Natural England 2016; and Annex 4 above) require that: i) there is a strong evidence base to demonstrate that the size and shape of the area included within the proposed MCZ boundary is appropriate to that required to ensure the viability of the site; ii) a significant body of reliable, recent, empirically-based evidence has been used to determine the location of the proposed MCZ boundary, this evidence being based on at least one high quality source of data, but ideally derived from more than one independent source of information, iii) underlying data are considered to have good quality; (i.e. there are large and representative sample sizes, they account for inter-annual and seasonal variation, and are appropriately collected according to best practice and appropriately analysed according to best practice (e.g. effort-corrected sightings data, robust modelling approaches), and yield boundaries that have low levels of uncertainty in their construction. Given the nature of the empirical survey data gathered by McSorley *et al.* (2003), its

analyses and the consistency of the outputs (as described above), it is considered that this evidence base, on which proposals for inclusion within MCZs of a one kilometre extension around SSSI colonies of these birds are based, meets all of the criteria set out in the scoring of this principle to merit a score of High.

To attain a score of High in regard of this principle it was also considered necessary that guidelines regarding boundary setting outlined in the Ecological Network Guidance (ENG) (Natural England and JNCC 2010) are adhered to as appropriate i.e. using a minimum number of straight lines and ensuring compact shapes tightly aligned to features (JNCC and Natural England 2016). It is considered that by enclosing all waters within one kilometre of the seabird breeding colony within MCZs with a seaward boundary formed of a series of straight lines between nodes, this guidance has been followed and that the proposals also merit a score of High in regard to this element of this principle. It is worth noting that in a similar vein, McSorley *et al.* (2003) recommended that the boundary of a seaward extension to an existing coastal or island seabird colony should be defined by a rectilinear polygon, drawn along parallels of latitude and meridians of longitude using a minimum number of lines and whose vertices are defined in degrees and minutes to two decimal places. They advised that the boundary extent should be no less than one kilometre from the existing site boundary. They also noted that other simple shapes and alignments may be used where practical. This is the approach which has been adopted here.

4.2 Manx Shearwater

To attain a score of High in regard of this principle, the guidelines (JNCC and Natural England 2016; and in Annex 4 above) require that: i) there is a strong evidence base to demonstrate that the size and shape of the area included within the proposed MCZ boundary is appropriate to that required to ensure the viability of the site; ii) a significant body of reliable, recent, empirically-based evidence has been used to determine the location of the proposed MCZ boundary, this evidence being based on at least one high quality source of data, but ideally derived from more than one independent source of information, iii) underlying data are considered to have good quality; (i.e. there are large and representative sample sizes, they account for inter-annual and seasonal variation, and are appropriately collected according to best practice and appropriately analysed according to best practice (e.g. effort-corrected sightings data, robust modelling approaches), and yield boundaries that have low levels of uncertainty in their construction. Given the nature of the empirical survey data gathered by McSorley *et al.* (2008), its analyses and the consistency of the outputs regarding the importance of waters within at least four kilometres of Manx Shearwater colonies (as described above), it is considered that this evidence base, on which proposals for inclusion within MCZs of a four kilometre extension around SSSI colonies of this species are based, meets all of the criteria set out in the scoring of this principle to merit a score of High.

To attain a score of High in regard of this principle it was also considered necessary that guidelines regarding boundary setting outlined in the ENG are adhered to as appropriate i.e. using a minimum number of straight lines and ensuring compact shapes tightly aligned to features (JNCC and Natural England 2016). It is considered that by enclosing all waters within four kilometres of the seabird breeding colony within this MCZ with a seaward boundary formed of a series of straight lines between nodes, this guidance has been followed and that the proposal also merits a score of High in regard to this element of this principle. It is worth noting that McSorley *et al.* (2008) determined the possible seaward boundaries of each of their study sites using previously agreed principles, i.e. that they should be as simple as possible, and placed along parallels of latitude or meridians of longitude or as diagonal lines between two points where this provides a more easily identified or more practical boundary (Johnston *et al*. 2004). In essence, by adhering to the principles set out by JNCC and Natural England (2016) a similar approach to boundary setting has been used in the current case.

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Annex 6 – Summary of the colony count data for all English seabird colonies supporting any one of the three species of breeding seabird being considered for inclusion as features of MCZs

1 Introduction

This Annex summarises count data at each seabird colony in England which supports any one of the three species of breeding seabird being considered for inclusion as a feature of Marine Conservation Zones (MCZs).

Count data for each species is presented in turn. For each species, two tabulations are provided. The first table shows count data derived from the last complete census of breeding seabirds around the UK i.e. Seabird 2000 and so represents relative colony importance in the late 1990s. Although somewhat out of date, these tables compare like for like count data which are all contemporary. There has been no national census of seabirds since 2000. However, many seabird colonies, or parts of them, have been counted regularly since then as part of the Seabird Monitoring Programme, and others have been counted intermittently as part of SSSI condition monitoring. The second table for each species shows the most recently available count data at each colony. While these count data are not all from the same year, they allow an assessment of each colony's relative importance based on the most recently available information.

2 Common guillemot

The largest common guillemot colonies in England are those at Flamborough Head / Bempton Cliffs / Filey, and the Farne Islands (together constituting ca. 85% of all common guillemots in England as per Seabird 2000, the last full census) (Tables 1 & 2). Both of these colonies are protected as SSSIs and SPAs/pSPAs. Common guillemot is a notified feature of the Flamborough Head and Filey Coast pSPA and Farne Islands pSPA as the abundances of common guillemot comfortably exceed the qualifying threshold of 1% of their biogeographical population as set out in the SPA selection guidelines. Both sites have proposed marine maintenance extensions (within the Flamborough & Filey Coast pSPA and within the Northumberland Marine pSPA (in the case of the Farne Islands) completing protection of birds on land and sea for these two colonies.

Amongst sites not protected as SPAs, the next highest ranked sites based on Seabird 2000 data are St Bees Head, Lundy, and West Exmoor Coast & Woods SSSIs which support~7%, ~2.6% and ~1% respectively of the English common guillemot population (Table 1).

St Bees Head and Lundy SSSIs have maintained their positions of third and fourth most important sites for common guillemot in England on the basis of the most recently available information (Table 2). West Exmoor Coast and Woods SSSI has also maintained its position of fifth most important colony on the basis that coastal sections at Filey are now considered part of the Flamborough & Filey Coast pSPA. Berry Head to Sharkham Point and Tintagel Cliffs SSSIs were ranked seventh and tenth for Seabird 2000 data (both <1%) (Table 1). Since then, common guillemot numbers have increased markedly at both of these sites as they have across much of their English range. This means that Tintagel Cliffs is now ranked sixth and Berry Head to Sharkham Point seventh, again taking account of the fact that coastal sections at Filey are now considered part of the Flamborough & Filey Coast pSPA (Table 2). It is not possible to accurately calculate percentages of the current national population at these colonies as there is no updated national population estimate at this time.

It is worth noting that, based on the most recently available count data (Table 2), the five SSSIs which are associated with the suite of MCZs for common guillemot which are being considered for public consultation represent the 3rd-7th biggest colonies in England, surpassed in size only by two colonies that

as well as being SSSIs are also SPAs/ pSPAs.

Table 1 Ranking of sites with >50 individuals in England as per Seabird 2000. Sites in bold are part of SPAs or pSPAs for the feature or a breeding seabird assemblage with proposed marine extension. Sites in italics are those initially proposed as MCZs for the feature by RSPB.

Site	Associated MCZ proposal	Total	% English site total
Flamborough Head SSSI	[None, though already pSPA]	46,685	50.75%
Farne Islands SSSI	[None, though already SPA]	31,497	34.24%
St Bees Head SSSI	*Cumbria Coast*	6,450	7.01%
Lundy SSSI	*Lundy*	2,348	2.55%
West Exmoor Coast & Woods SSSI	*Bideford to Foreland Point*	862	0.94%
St Aldhelm's Head - Durlston Head		807	
Berry Head to Sharkham Point SSSI	*Torbay*	711	0.77%
Godrevy to St Agnes Head SSSI		486	
Needles Rocks & Main Bench Cliffs		337	
Tintagel Cliffs SSSI	*Hartland Point to Tintagel*	326	0.35%
Filey 2		320	
Isles of Scilly SSSIs		196	
Gerrans Bay to Camels Cove SSSI	*Gerrans Bay to Camels Cove*	148	
Portland 5		147	
Filey 1		100	
Bawden Rocks		83	
Boscastle to Widemouth	*Hartland Point to Tintagel*	75	
Tresungers Point		67	
Seal Hole to Trevaunance Cove		63	
Filey 3		50	

Table 2 Ranking of sites with >50 individuals in England as per recent data. Sites in bold are part of SPAs or pSPAs for the feature or a breeding seabird assemblage with proposed marine extension. Sites in italics are those initially proposed as MCZs for the feature by RSPB. Count year is 2015 or 2016 (within current seabird census period) unless noted.

Site	Associated MCZ proposal	Total	% English site total	Count year
Flamborough Head SSSI	[None, though already pSPA]	59,166	41.44%	2008
Farne Islands SSSI	[None, though already SPA]	53,461	37.44%	
St Bees Head SSSI	Cumbria Coast	13,061	9.15%	
Lundy SSSI	Lundy	4,114	2.88%	2013
Filey 3		3,179		2014
West Exmoor Coast & Woods SSSI	*Bideford to Foreland Point*	2,706	1.90%	
Tintagel Cliffs SSSI	*Hartland Point to Tintagel*	1,903	1.33%	
Berry Head to Sharkham Point SSSI	*Torbay*	1,224	0.86%	
St Aldhelm's Head - Durlston Head		1,020		
Filey 2		972		2014
Godrevy to St Agnes Head SSSI		490		
Brisons		350		
Gerrans Bay to Camels Cove SSSI	*Gerrans Bay to Camels Cove*	309		
The Mouls (Pentire Peninsula SSSI)	*Padstow Bay and surrounds*	292		
Isles of Scilly SSSIs		291		
Filey 1		105		2014
Boscastle to Widemouth	*Hartland Point to Tintagel*	100		2013

3 Razorbill

The largest razorbill colony by far in England is at Flamborough (constituting ca. 77% of all razorbills in England as per Seabird 2000, the last full census) (Table 3). This colony is protected as a SSSI and a SPA/ pSPA. Razorbill is a notified feature of the Flamborough Head and Filey Coast pSPA as its abundance comfortably exceeds the qualifying threshold of 1% of their biogeographical population as set out in the SPA selection guidelines. The site contains a proposed marine maintenance extension (Flamborough & Filey Coast pSPA) to the existing SPA, completing protection of birds on land and sea.

Amongst sites not protected as SPAs, the next highest ranked sites based on Seabird 2000 data are: Lundy, St Bees Head and West Exmoor Coast and Woods SSSIs which support ~8.5%, ~2.8% and ~1.7% respectively of the English razorbill population (Table 3).

Since the Seabird 2000 assessment, razorbill numbers have increased across much of their English range. Lundy continues to be the second largest colony while West Exmoor Coast & Woods is now ranked third (Table 4). Razorbill numbers have not increased at St Bees Head and based on recent count data St Bees Head is now ranked eighth, bearing in mind that the coastal sections at Filey are now considered part of the Flamborough & Filey Coast pSPA (Table 4). It is not possible to accurately calculate percentages of the current national population at these colonies as there is no updated national population estimate at this time.

It is worth noting that, based on the most recently available count data (Table 4), the three SSSIs which are associated with the suite of MCZs for razorbill which are being considered for public consultation represent the second, third and eighth biggest colonies in England, with Lundy and West Exmoor Coast and Woods colonies surpassed in size only by a single colony that as well as being a SSSI is also an SPA/ pSPA.

Table 3 Ranking of sites with >40 individuals in England as per Seabird 2000. Sites in bold are part of SPAs or pSPAs for the feature or a breeding seabird assemblage with proposed marine extension. Sites in italics are those initially proposed as MCZs for the feature by RSPB.

Site	Associated MCZ proposal	Total	% English site total
Flamborough Head SSSI	[None though pSPA]	8,539	76.64%
Lundy SSSI	*Lundy*	950	8.53%
St Bees Head SSSI	*Cumbria Coast*	312	2.80%
Isles of Scilly SSSIs		261	
Farne Islands SSSI		209	
West Exmoor Coast & Woods SSSI	*Bideford to Foreland Point*	187	1.68%
Godrevy Head to St Agnes Head SSSI		182	
Bawden Rocks		52	
Boscastle to Widemouth Bay		44	
Filey 1		40	

Table 4 Ranking of sites with >40 individuals in England as per recent data. Sites in bold are part of SPAs or pSPAs for the feature or a breeding seabird assemblage with proposed marine extension. Sites in italics are those initially proposed as MCZs for the feature by RSPB. Count year is 2015 or 2016 (within current seabird census period) unless noted.

Site	Associated MCZ proposal	Total	Count year	% English site total
Flamborough Head SSSI	[None though pSPA]	14,927	2008	70.79%
Lundy SSSI	*Lundy*	1,324	2013	6.28%
West Exmoor Coast & Woods SSSI	*Bideford to Foreland Point*	726		3.44%
Farne Islands SSSI		709		
Filey 3		708		
Tintagel Cliffs SSSI		700	2014	3.32%
Brisons		500		
Isles of Scilly SSSIs		482		
Filey 2		291	2014	
St Bees Head SSSI	*Cumbria Coast*	177		0.84%
Marsden Cliffs		120		
Filey 1		119	2014	
Godrevy Head to St Agnes Head SSSI		114		
Pentire Peninsula SSSI		68		
St Aldhelm's Head - Durlston Head		52		

4 Manx Shearwater

There are only two breeding colonies of Manx shearwater in England; on Lundy and the Isles of Scilly. Both are SSSIs and the latter is a SPA with a breeding seabird assemblage; work is ongoing to recommend a marine extension to the SPA.

In 2000, the Isles of Scilly supported 201 pairs of breeding Manx shearwaters compared with 166 on Lundy (Table 5). Following successful rat eradication on firstly Lundy and latterly some of the Isles of Scilly, Lundy now supports 3,451 pairs and the Isles of Scilly 523 pairs (Table 6). Both counts are fairly recent and as both colonies were surveyed this can be taken as a reasonable representation of the national picture. Lundy and the Isles of Scilly therefore support ~87% and ~13% of the English population respectively making Lundy comfortably the most important site in England for this species.

Table 5 Ranking of all sites in England as per Seabird 2000 (pairs). Sites in bold are part of SPAs or pSPAs for the feature or a breeding seabird assemblage with proposed marine extension. Sites in italics are those initially proposed as MCZs for the feature by RSPB.

Site	Associated MCZ proposal	Total	% English site total
Isles of Scilly SSSIs	[None though pSPA]	201	54.77%
Lundy SSSI	*Lundy*	166	45.23%

Table 6 Ranking of all sites in England as per recent data (pairs). Sites in bold are part of SPAs or pSPAs for the feature or a breeding seabird assemblage with proposed marine extension. Sites in italics are those initially proposed as MCZs for the feature by RSPB. Count year is 2015 or 2016 (within current seabird census period) unless noted.

Site	Associated MCZ proposal	Total	Count year	% English site total
Lundy SSSI	*Lundy*	3,451	2013	86.84%
Isles of Scilly SSSIs		523		13.16%