Final Report and Recommendations

September 7th, 2011

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Parts II.3.36 to II.3.45 (inshore rMCZ site reports, north coast): pages 786 -961 of 1272

This is one of seven download sections of Finding Sanctuary's final report, which was initially only made available to download as a single document. Because of the large size of the final report, we have made it available in this format for users who have had difficulty downloading it in one go or printing off individual pages from the large PDF.

Where possible, readers are advised to download the single document in preference to the separate download sections. Although the content is identical, the hyperlinks in the report's main Table of Contents and List of Maps are severed when the PDF is split.

II.3.36 Cape Bank rMCZ

Basic site information

***Site centre location (datum used: ETRS89)*:**

Decimal Degrees		Degrees Minutes Seconds	
Lat	**Long**	**Lat**	**Long**
50.2173	-5.9216	50° 13' 2'' N	5° 55' 17'' W

***Site surface area*:** 472.66 km^2 (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea
OSPAR region: Region III: Celtic Waters

Site boundary: This site straddles the 6nm and 12nm limits. The eastern boundary follows the boundary of the Cape Bank section of the Land's End and Cape Bank cSAC. The western boundary extends beyond the 12nm limit, overlapping with a Traffic Separation Scheme (the overlap with the TSS was seen as a way to reduce potential impacts on fishing and future renewables development).

***Sites to which the site is related*:** The site completely includes the Cape Bank section of the Land's End and Cape Bank cSAC. It also contains Cape Bank recommended reference area.

Maps of the site are included at the end of this site report. The main site map shows points with coordinates along the site boundary (in WGS84 UTM30N).

Features proposed for designation within Cape Bank rMCZ

Table II.3.36a Draft conservation objectives for the Cape Bank rMCZ. M = maintain in favourable condition, R = recover to favourable condition. This is an extract of the conservation objective summary tables in section II.2.1. ***The full text of the draft conservation objectives can be found in appendix 15****.*

Broad-scale habitats	Moderate energy circalittoral rock		**R**
	Subtidal coarse sediment		**R**
Species FOCI	*Palinurus elephas*	Spiny lobster	**R**

The following tables show ENG-related statistics for this site, reported from spatial data available in Finding Sanctuary's GIS datasets. Greyed out rows indicate features for which GIS data exists within the site boundary, but which have not been included on the list of draft conservation objectives (the reasons are stated in table footnotes).

*Table II.3.36b **Subtidal broad-scale habitats** recorded in this rMCZ, based on an analysis of Finding Sanctuary's EUNIS level 3 broad-scale habitat GIS data (see appendix 8). Data sources: 1 - UKSeaMap, 2 - MESH, 3 - Environment Agency.*

Habitat	Area covered within rMCZ (km^2)	% of total in study area	Source(s)
Moderate energy circalittoral rock	19.50	0.1%	1
Subtidal coarse sediment	308.11	1.1%	1
High energy infralittoral rock[1]	9.47	1.3%	1
Moderate energy infralittoral rock[1]	6.84	2.2%	1
High energy circalittoral rock[1]	3.18	0.2%	1
Moderate energy circalittoral rock[1]	125.56	0.7%	1

[1] Features / areas already protected within an overlapping MPA. See appendix 11 for details.

*Table II.3.36c **FOCI habitats** recorded in this rMCZ, based on an analysis of Finding Sanctuary's amalgamated GIS FOCI datasets (see appendix 8). Data sources: 1 - MB102; 2 - JNCC/ MESH Canyons survey data; 3 - ERCCIS/Isles of Scilly Wildlife Trust; 4 - DORIS.*

Habitat	Area covered (km^2)	Number of point records (total)	Number of point records (pre-1980)	Source(s)
Subtidal sands and gravels[1]	115.47			1

[1] Conservation objectives have not been included for subtidal sands and gravels as we have considered any conservation requirements met by listed broad-scale habitats.

*Table II.3.36d **FOCI species** recorded in this rMCZ, based on an analysis of Finding Sanctuary's amalgamated GIS FOCI datasets (see appendix 8). Data Sources: 1 - MB102; 2 - Dorset Wildlife Trust; 3 - Cornwall Wildlife Trust; 4 - DERC; 5 - SeaSearch 2009; 6 - Steve Trewhella Survey Log 2010.*

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
Palinurus elephas	2		1

Note that the FOCI habitat 'Fragile sponge and anthozoan communities on subtidal rocky habitats' is also present in the area, indicated in the gap analysis, and in recent survey information from Natural England (although there are no records present in the national datasets), but is already protected within the SAC boundary. The SAC selection assessment document[46] (Natural England, 2010) indicates that the identified reef biotopes most similar to this FOCI are mostly found within the Cape Bank area. These may also be present outside the cSAC boundary where there is additional rocky habitat, in which case the rMCZ would contribute addition protection.

For additional understanding on how this site is located in relation to environmental data layers, including areas of high benthic biodiversity, offshore bird aggregation areas, or areas of seasonal sea surface temperature fronts, please refer to the interactive PDF maps presented alongside this report.

Site summary

The Cape Bank site lies to the west of the Land's End peninsula and extends to almost 25 km from the coast. The reefs are fully submarine, upstanding features which are almost entirely composed of granite. The site an offshore upstanding reef which extends in a broad, arching crescent roughly

[46] http://www.naturalengland.org.uk/Images/LECB-sad_tcm6-21669.pdf

aligned with the coastline. The crescent shaped system of offshore upstanding rocky reefs forms the major feature of conservation interest at the site. The site occupies a depth range of 30 – 75 metres. The reef is characterised by high biodiversity tide-swept communities such as sponges, faunal and algal turfs and crustose communities (Natural England, 2010). The rMCZ encompasses Cape Bank itself, as well as an area of subtidal coarse sediment to the west of it.

There is anecdotal evidence that the moderate energy circalittoral rock in the western portion of the site is not bedrock-reef, but cobbles (this has been stated by several Working Group members). Local Group feedback indicates that this area is an area of added ecological importance for the pelagic realm, with frontal activity, and used by summer foraging birds, including sea bird colonies on the Isles of Scilly such as kittiwake, puffin, guillemot and razorbill. Fin whales are present in the area in winter.

Detailed site description

The crescent shaped system of offshore upstanding rocky reefs forms the major feature of conservation interest at the Land's End and Cape Bank site. It measures about 35km along its central spine and 12km at its widest point. The outer part of Cape Bank is characterised by at least three sub-parallel, high linear rock ridges which extend for over 20 km in a slightly curving S-NNE trending arc. These ridges sit on a rock platform at a depth of 45 to 55 m and can reach up to 25 m high and be over a kilometre wide with steep slopes and cover over 100 km^2 in total area. The reef is characterised by high biodiversity tide-swept communities such as sponges, faunal and algal turfs and crustose communities. The offshore upstanding rocky reefs areas are the most biodiverse of all rocky reef habitats within the site. The most abundant biotope in this area is *Caryophyllia smithii* and sponges with *Pentapora foliacea*, *Porella compressa* and crustose communities on wave-exposed circalittoral rock. The site's south westerly position on the British coast means that the sub-littoral zone is exposed to the full force of the waves and oceanic swells coming in from the Atlantic, as well as experiencing full salinity, given the absence of any major source of fresh water run-off from the land (Natural England, 2010).

Two multidisciplinary (acoustic and sampling) surveys were conducted in 2007 by CEFAS (2008) as part of work to identify the site boundary for the candidate SAC. A total of 540 km of acoustic survey lines (sidescan sonar and multibeam bathymetry) were run at the which equated to a coverage of 215 km^2. Digital video and stills data were collected at 27 sites and 12 scallop dredge sites were sampled along with 13 Hamon grabs sites. An inshore survey was also conducted to collect only acoustic and optical data (i.e. sidescan sonar and visual data) on the upstanding shallow inshore reef areas.

Palinurus elephas was reported in the Cape Bank area during the 2007 Natural England Cape Bank Annex I habitat survey. Poulton *et al.* (2002) in Jones *et al.* (2004) have described the sediment of the Cape Bank area using models supported by ground truthing.

Stakeholder narrative: Assumptions and Implications

As explained in part I, the stakeholder narrative is a vital underpinning of the site recommendations. Working assumptions and implications are presented here, and additional comments are presented in the following section.

The following fundamental assumption was recorded to apply to all activities in all sites: **The fundamental assumption about human activities within MCZs is that activities can continue (under**

current licensing regimes where applicable), as long as they do not prevent the conservation objectives from being achieved. This assumption applies to all activities. Table II.3.36e shows more specific working assumptions and implications that were recorded for this site over the course of the planning process.

Following that, table II.3.36f shows the vulnerability assessment (VA) snapshot for this site. The VA meetings took place at the end of the project, and they did not involve the Steering Group. They started to discuss site management, but did not reach any firm conclusions. The VA snapshot table reflects the point that the VA discussions had reached at the time of the last Joint Working Group meeting in May 2011. Many Steering Group members expressed concerns about the VA process and its outcomes (see section II.2.1for full details).

Table II.3.36e Specific assumptions and implications relating to Cape Bank rMCZ. Black text reflects the working assumptions and implications recorded throughout the planning discussions. The development of the narrative recorded in black can be traced back through the Working Group and Steering Group meeting reports from 2009 to 2011. Red and green text in the first column comments on how the snapshot of the vulnerability assessment (VA) relates to each of the working assumptions that had been made as planning took place (refer to part I for a full explanation of the VA snapshot).

Activities assumed to not be allowed within the site	
Assumptions	Implications
Bottom-towed fishing gear will not be allowed (includes benthic trawling and hydraulic dredging) This activity was discussed during the VA meetings, and it was determined that the activity would probably not need managing in the whole site, but it might need exclusion from some of the site, over specific BSH (see right hand column).	**Direct implications:** o Loss of ground for bottom-towed gear fishermen, o Displacement of bottom-towed gear o Increased competition for fishing grounds o Reduced diversity and flexibility of fishing o Cumulative impact on bottom-towed gear fleet where protected areas are close together o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers. (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) o Potential environmental implications derived from concentrating effort in alternative grounds or due to new fishing ground searching activity. o Note that this rMCZ has been placed in a Traffic Separation Scheme (TSS) area in an effort to reduce impacts to the fishing industry. This is based on an assumption that fishing activity is less intense within the TSS. If fishing activity is not less intensive in the TSS, then some fishing activity will be restricted/displaced.
Aggregate extraction will not be allowed Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o Aggregate dredging can only occur where the mineral resources are geologically located – in highly localised and discrete areas. If aggregate operations are not allowed in MCZs (subject to appropriate monitoring, mitigation and management), and MCZs coincide with aggregate resource, then this will have significant impact on national

	construction aggregate supply and coast defence. **Given this assumption, there are still the following concerns:** o If aggregate operations (subject to appropriate monitoring, mitigation and management) are restricted in areas adjacent to an MCZ, then this will have significant impact on national construction aggregate supply and coast defence.
Anchoring of large vessels will not be allowed (except in emergencies) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	**Implications**
Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area. The VA meetings stated that the removal of spiny lobster would not be permitted in this rMCZ.	**Direct implications:** o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) **Given this assumption, there are still the following concerns:** o Local Group feedback has suggested that mitigation measures against bycatch be put in place for netting, but seabirds and cetaceans are currently not part of the developing conservation objectives of the site. o Static gear fishermen might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed o *Palinurus elephas* forms an important fishery in the area and therefore the fishing industry cannot support this site if the species is included as a FOCI.
The installation, operation and maintenance of renewable energy devices will be permitted *Based on SAP feedback the assumption cannot apply to all sites in the network, although it can apply to any given site on its own.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o There is currently no guidance on what renewable activities are compatible with various conservation objectives. **Given this assumption, there are still the following concerns:** o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: - additional costs to the renewables industry, e.g. for licensing mitigation and monitoring - delays to renewables development - delays, lost revenue and additional costs associated with cable repair activity restrictions o Attracting the funding (for development) may be harder in the first place as sites with MPA designations within them will be less attractive to potential investors. o Costs and delays associated with co-location of renewables in MCZs, could result in long term implications in terms of renewables deployment which could have serious implications for industry and Government in terms of loss of operational revenue and missing EU climate

	change targets. o Enforced co-location with MCZs would dramatically restrict deployment. **If the assumption turns out to be wrong:** o If co-location assumptions are not correct the impacts would/could be: site locations that can't be developed, increased costs (the implications could be re-routing of cables around a feature could cost an additional £600,000 - £1.3m/km depending on cable type, size and seabed geology), construction delays, failure to meet renewables targets, impacts on acidification, additional monitoring requirements, increased uncertainty and declining investor confidence in renewables activities. o Increased competition for sea space with other sea users. o Excellent wind and wave resource area outside the Traffic Separation Scheme in the North East section of the rMCZ.
Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Aquaculture of fin fish and shell fish will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Crab tiling / bait digging will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Beach replenishment will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Activities assumed to be allowed to continue / occur within the site	
Assumptions	**Implications**
Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed **Benefits:** o Potential for increased and enhanced leisure and recreational activity
The installation and maintenance of cables will be permitted and will not be made prohibitively expensive within the site. This applies to power cables (including cables for renewable energy devices), and telecommunications cables. This activity was considered at the VA meetings, which determined that cable installation and operation would be permitted with no additional mitigation likely to be required as a result of the rMCZ.	**Direct implications:** o **Given this assumption there are still the following concerns:** o Cable installation cost increases and delay o Cable repair cost, delays and lost revenue could increase due to activity restrictions on cable repair. o There is no definition of what 'prohibitively expensive' means; the cables representative would like assurance that no additional cost will result from MCZ designation (beyond costs associated with existing management and mitigation requirements). **If the assumption turns out to be wrong:** o For renewables/power cables, re-routing of cables around a feature or site might mean longer cable routes, at a cost of £600,000 - £1.3 million/km depending on cable type, size and seabed geology. o There may be other costs, e.g. costs associated with licensing, mitigation measures and monitoring requirements. o Increased licensing requirements and costs of cabling may have serious implications for industry and

	Government in terms of loss of operational revenue, missing EU climate change targets etc. o Possible cable route to renewables resources.
The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o This rMCZ is located within an area with active telecommunication cables linking the UK mainland and overseas. These activities need to remain unrestricted o Four active telecoms cables, one active power cable and ten inactive telecoms cables.
Tourism and recreational activities will be permitted. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Maintenance dredging in ports (to enable access to ports) will be permitted *The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o (no heritage wrecks currently present in the site)
Anchoring of small vessels will be permitted *There isn't a clear, agreed Working Group definition for what constitutes*	**Direct implications:** o **Given this assumption, there are still the following concerns:**

a 'small vessel'. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	o No clear working group definition exists of what counts as a 'small' vessel - 24m was proposed some time ago by the RYA, but no decision was reached as to whether we would adopt that size in MCZ planning.
Passage of ships will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Seaweed harvesting will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Table II.3.36f VA Snapshot table: This table records the point which the vulnerability assessment discussions had reached regarding site management, at the time of the final Joint Working Group meeting in May 2011. The outcome is not definitive, and the VA did not carry out an exhaustive review of all the working assumptions recorded in the longer table above. The Steering Group were not directly involved in the VA discussions, and at their final meeting, expressed considerable reservations about the VA outcome (see section II.2.1). The reason this VA snapshot table is included here is so that readers have a record of what the VA snapshot was showing at the time the final stakeholder comments were recorded for this site. For a full explanation of the VA snapshot, please refer to part I. The maps in appendix 13 show a visual representation of the information in all the VA snapshot tables in the rMCZ site reports.

Sector	Potential Management
Commercial Fishing – all mobile bottom gears	Management: - Prohibition of fishing over specific BSH/FOCIs in the rMCZ. These are: high energy circalittoral rock, subtidal coarse sediment. Measure: - Common Fisheries Policy
Commercial Fishing	Management - Removal of *palinurus elephas* (crawfish) not permitted Measures - Option 1: Voluntary - Option 2: Byelaw

Stakeholder narrative: Uncertainties and Additional Comments

Uncertainties

The most significant uncertainty faced by the project was the lack of knowledge on management of MCZs, and this uncertainty still applies to all rMCZs in the network. There was uncertainty over what activities will be affected by MCZ designations: what activities will be permitted to continue within (or near) MCZs, what activities will not be permitted, and what activities will require mitigation or some form of restriction other than a complete ban. There was also uncertainty over what measures will be taken to ensure any activity restrictions are put in place (e.g. byelaws, voluntary measures).

Additional comments

The following is a set of additional comments made by stakeholder representatives over the course of the planning work. Some of these comments were made specifically about this site, others were more generic comments which the project team consider to be relevant to this site.

- *Mobile bottom gear*
    - Seasonal closures are an inappropriate measure for benthic conservation.

- *Seabirds and cetaceans*
    - Codes of practice may be a better way to achieve management of leisure boats (if necessary) than byelaws.
    - Current levels of human activity appear to be compatible with maintaining basking shark, bottlenose dolphin and harbour porpoise numbers in this site. There is the

potential for boat strike from pleasure craft which is a cause for concern. Monitoring of numbers and activities and impacts on these species, dissemination of codes of conduct for encounters, encouraging boat operators to become WiSE accredited and a 3 year review of baseline numbers (estimated from ERCCIS sightings data) would all help to maintain healthy populations of these mobile species. Healthy populations of bottlenose dolphins, harbour porpoises and basking sharks would suggest a healthy ecosystem within the site and would be an attraction for the general public and ecotourism. Mitigation measures would be required if there was a decline in species numbers due to activities within the rMCZ (e.g. disturbance from boat pleasure craft, boat strike, bycatch from fishing activity)

- *Netting and longlining*
    - When the detailed assumptions were drafted for rMCZs in the network during the third planning iteration, all sites with 'water column protection' had an assumption that 'netting and longlining will not be allowed'. This applied to all sites considered for the protection of seabirds, cetaceans, or any of the three mobile FOCI listed in the ENG – smelt, undulate ray and European eel. Longlining does not occur in inshore sites in the region, and feedback from stakeholders was that the longlining assumption is not appropriate for any site. For sites that still have draft conservation objectives for seabirds or cetaceans in the final recommendations, the netting / longlining assumption has been superseded by the fact that the stakeholder group agreed on a different set of assumptions for these features (largely around the need for monitoring, and some possible voluntary codes of conduct, but no fishing restrictions). However, for sites that have draft conservation objectives for mobile FOCI, an uncertainty remains with respect to netting, where it may have an impact on nursery habitats or juvenile FOCI.

- *General benefits of MCZs*
    - Some stakeholder representatives would like the following recorded and for these to be considered during the impact assessment:
        - Fisheries spill-over.
        - Improvements for the local economy.
        - Education opportunities.
        - Benefits to science.
        - Focus for voluntary groups.
        - Potential increase in the amount and quality of recreational activities (diving, sea angling, environmental tourism, etc).
        - The designation as an MCZ will be a selling point and will undoubtedly be used as an identifier to the area to highlight it as somewhere to visit.

- *Monitoring*
    - There are two main types of monitoring which will need to take place within rMCZs:
        - Monitoring the activities within a site and the various levels at which they are occurring.
        - Monitoring the ENG features for changes in condition.

- *Management measures*
    - Part of this rMCZ is inshore (within territorial waters), but it lies beyond the 6 nautical mile limit, and partly outside the 12nm limit. There may be non-UK vessels with historical fishing rights in the area. For sites beyond 6nm, stakeholder

representatives repeatedly voiced concern over how the activity of non-UK fishing vessels might be managed, and stated opposition to any unilateral measures that would apply to UK vessels only. At the time of the third progress report, we had received the following statement from the SNCBs and Defra: 'When considering the impacts of fishing restrictions on non UK vessels, it is the Government's intention that fishing restrictions will not be imposed unilaterally on UK vessels before they can be applied to equivalent EU vessels operating within the relevant areas. In the case of those EU fishing vessels with historic fishing rights in UK waters between 6 and 12 nm, Defra will negotiate with the relevant Member States and the European Commission before introducing byelaws, or orders that are applicable to all EU vessels, or seeking Common Fisheries Policy (CFP) regulation measures. Once introduced, these would apply to all EU vessels (including UK vessels) equally and at the same time.'

- *Reaction to the vulnerability assessment process and outcomes*
    - At the sixth Joint Working Group meeting in June 2011, the results from the regional vulnerability assessment (VA) discussions were presented to the group, as shown in table II.3.36f (the VA process is described in part I). This generated concern within the JWG, for two reasons. Firstly, several members of the group had serious misgivings over the outcome of the management discussions, especially with respect to those inshore rMCZs for which no management of bottom-towed mobile fishing gear was highlighted as necessary. Secondly, the group had serious misgivings about the process itself, from which they felt disenfranchised.
    - The Steering Group made a statement at their final meeting, articulating those concerns in more detail. They recommended that there should be a process that allows them to review potential management measures for MCZs, before public consultation. The full statement made by the Steering Group is in section II.2.1.

Levels of support

The network report (section II.2) includes a project team reflection on levels of support for the network recommendations as a whole, and the site specific reflection presented here should be read within the wider network context.

This rMCZ is controversial with fishing representatives, despite the fact that a major boundary alteration was undertaken to this site early in 2011 as a result of a suggestion by fishermen, increasing the area of overlap with a shipping lane (Traffic Separation Scheme). The area is used by static gear in particular. French fisheries NCS have stated that they do not support the site. The renewables sector has concerns about the site's impacts on potential future renewables developments (the area is located in a high wave resource area), but they are more supportive of the site since the boundary was altered to increase the area of overlap with the Traffic Separation Scheme, within which renewables infrastructure would be restricted in any case.

The Crown Estate indicated that this is an area with active telecommunication cables interconnecting UK mainland overseas. They are supportive with the assumption that MCZ designation would not restrict maintenance / repair of cables described.

Supporting documentation

GIS data used for reporting the quantitative habitat and species figures in the tables above includes the following sources: UKSeaMap modelled broad-scale habitat data, and MB102. Refer to appendix 8 for details, and to the tables above for data sources for specific features in this site.

Further evidence underpinning the site can be found in the publications and datasets referred to in the detailed site description. There may be additional information relevant to this rMCZ in Dipper (1981), and Hiscock (1981). Multibeam seabed data exists for Cape Bank, details may be available from Natural England.

Site map series

On the following pages there are three maps of this site.

- The first map (FR_050a) is the main site map showing the rMCZ boundary and includes points with coordinates (in WGS84 UTM30N). The map also shows charted depth and existing Marine Protected Areas for reference. Please note: the lat/long coordinates of the vertices in the following maps have been calculated in decimal degrees, and in degrees, minutes and seconds. For plotting on a standard Admiralty (UKHO) chart, the seconds of each coordinate need to be converted to decimal. An MS Excel table showing all coordinates in degrees, minutes and decimal seconds has been provided in the additional materials section (see Appendix 14) for plotting purposes.
- The second map (FR_050b) shows the rMCZ boundary over broad-scale habitats, and records of habitat and species FOCI. The data shown on this map corresponds with the information in tables II.3.36b and II.3.36d, data sources are indicated in the tables.
- The third map (FR_050c) shows socio-economic datasets. For spatial data showing the distribution of fishing effort, please refer to the interactive PDF maps supplied with the additional materials (see appendix 14).
- Because of the large number of features shown on the site maps (especially inshore biophysical maps), it has not been possible to embed comprehensive legends within the site maps themselves. A comprehensive map legend is therefore provided in appendix 7, which explains the symbology used on all the maps within this final report.
- Appendix 8 describes the data sources for the information shown on the final report maps in detail.

Map: FR_050a

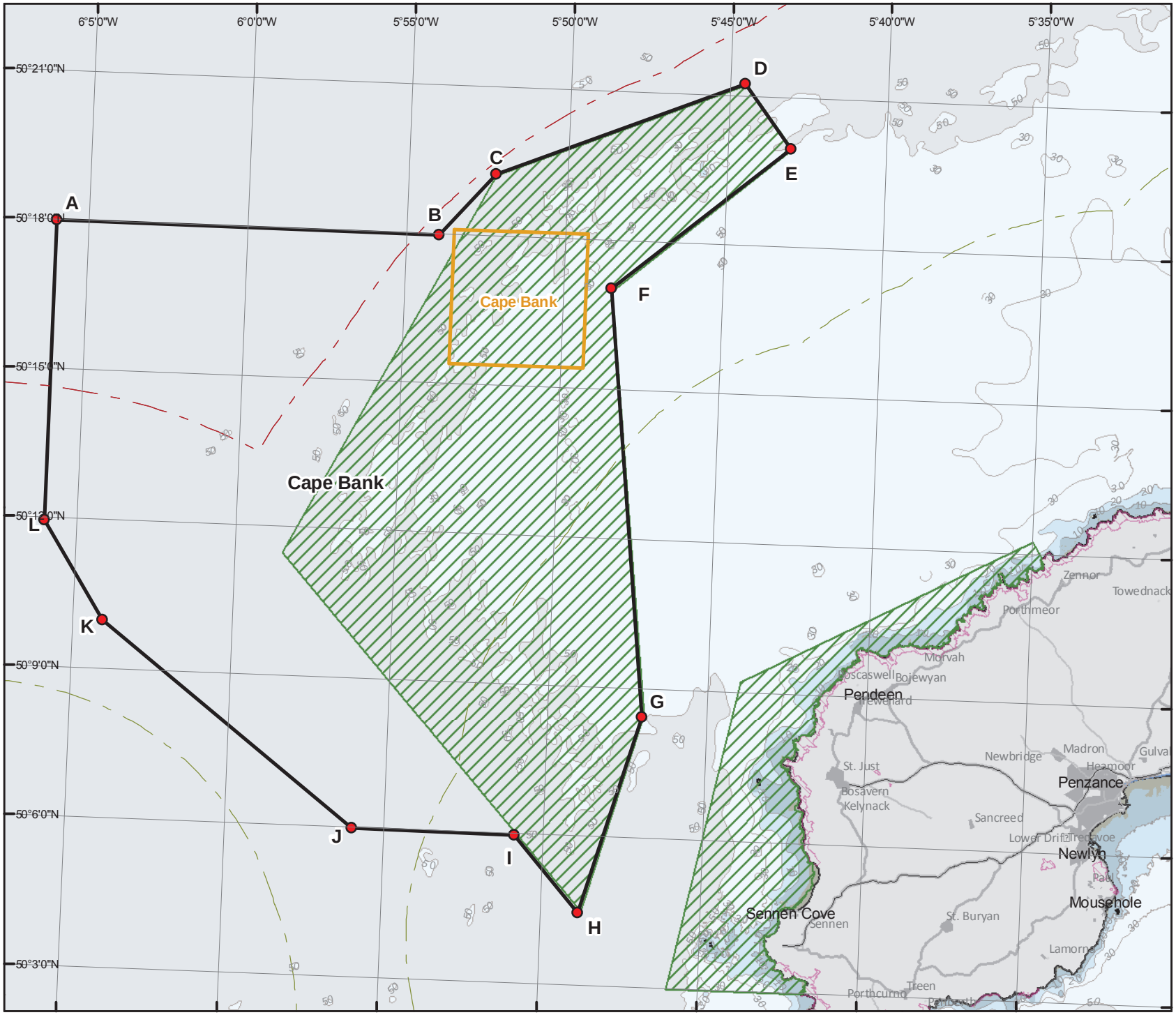
Version:26Aug11

Cape Bank rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 2.5 5 10 km N

FINDING SANCTUARY



Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.3000	-6.1000	50° 17' 59" N	6° 6' 0" W
B	50.3000	-5.8995	50° 18' 0" N	5° 53' 58" W
C	50.3210	-5.8708	50° 19' 15" N	5° 52' 15" W
D	50.3543	-5.7422	50° 21' 15" N	5° 44' 31" W
E	50.3333	-5.7172	50° 20' 0" N	5° 43' 1" W
F	50.2841	-5.8085	50° 17' 2" N	5° 48' 30" W
G	50.1409	-5.7842	50° 8' 27" N	5° 47' 3" W
H	50.0746	-5.8136	50° 4' 28" N	5° 48' 48" W
I	50.0999	-5.8481	50° 5' 59" N	5° 50' 53" W
J	50.0999	-5.9330	50° 5' 59" N	5° 55' 58" W
K	50.1664	-6.0673	50° 9' 59" N	6° 4' 2" W
L	50.1992	-6.0999	50° 11' 57" N	6° 5' 59" W

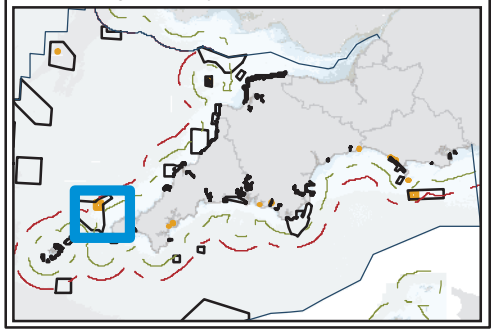
Map Legend

- 6 nautical mile limit
- 12 nautical mile limit
- Recommended MCZ (rMCZ)
- Recommended reference area

Existing MPAs

- cSAC
- SSSI (not part of MPA network)

A comprehensive legend is provided in the appendices of the Finding Sanctuary final report.



Map: FR_050b

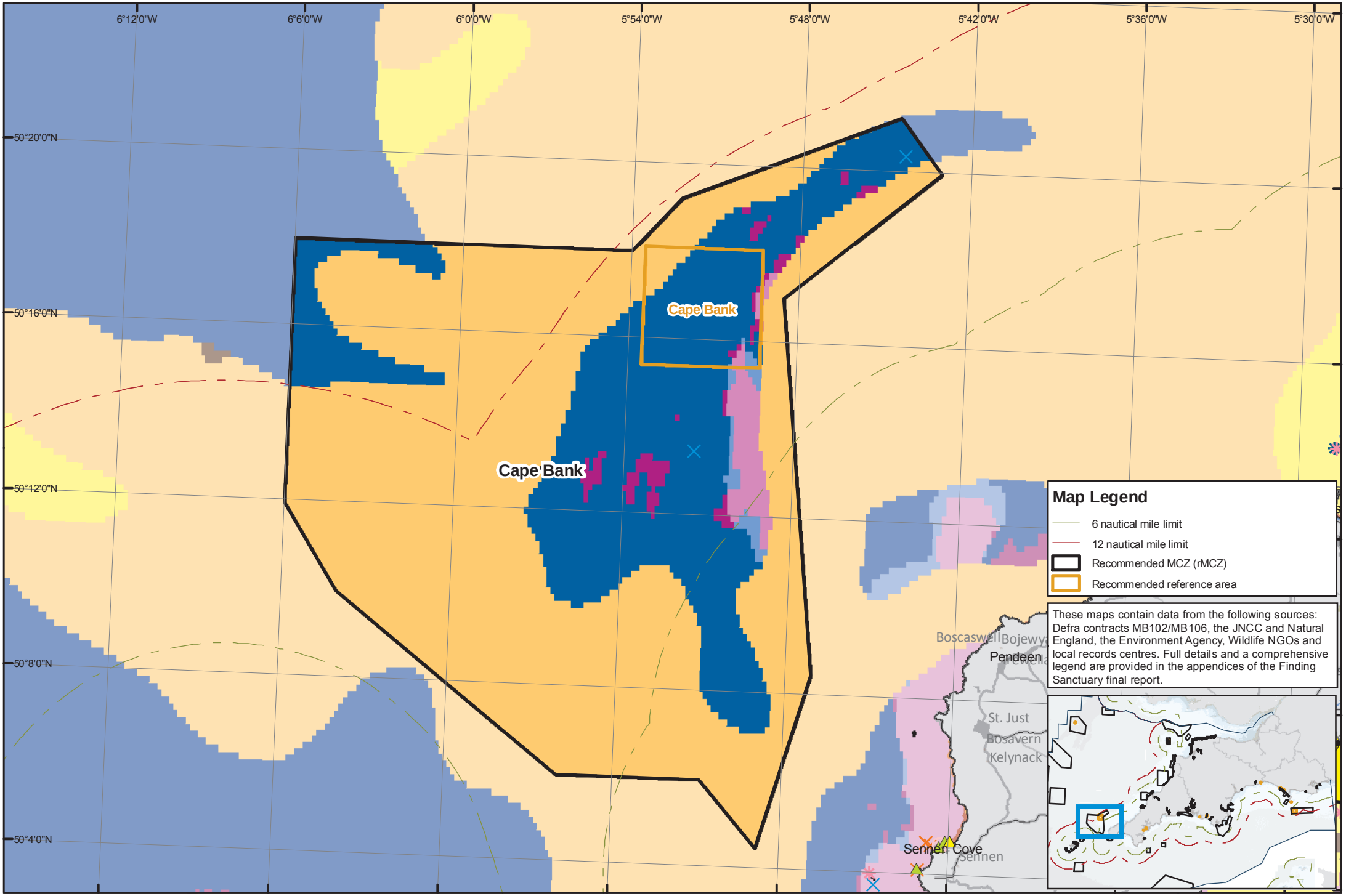
Version:31Aug11

Cape Bank rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with biophysical information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 5 10 km N

FINDING SANCTUARY



Map: FR_050c

Version:5Sep11

Cape Bank rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 2.5 5 10 km

N

FINDING SANCTUARY

6°10'0"W 6°5'0"W 6°0'0"W 5°55'0"W 5°50'0"W 5°45'0"W 5°40'0"W 5°35'0"W 5°30'0"W

50°21'0"N 50°18'0"N 50°15'0"N 50°12'0"N 50°9'0"N 50°6'0"N 50°3'0"N

Cape Bank

Cape Bank

Map Legend

- 6 nautical mile limit
- 12 nautical mile limit
- Recommended MCZ (rMCZ)
- Recommended reference area
- Traffic separation zone
- Inshore traffic zone
- Wave Hub
- Power and telecommunications cables (KISCA)
- Charted wrecks

This map series contains data from a variety of sources including the UKHO, the Environment Agency, and The Crown Estate. A full list and a comprehensive legend can be found in the appendices of the Finding Sanctuary final report.

Morvah
Boscaswell
Bojewyan
Pendeen
Trewellard
St. Just
Bosavern
Kelynack
Sancre
Sennen Cove
Sennen
St. Buryan

II.3.37 Newquay and the Gannel rMCZ

Basic site information

***Site centre location (datum used: ETRS89)*:**

Decimal Degrees		Degrees Minutes Seconds	
Lat	**Long**	**Lat**	**Long**
50.4194	-5.1066	50° 25' 9'' N	5° 6' 23'' W

***Site surface area*:** 9.43km^2 (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea
OSPAR region: Region III: Celtic Waters

***Site boundary**:* The site boundary extends along the OS Boundary Line mean high water mark from Kelsey Head (west of Crantock Beach) to Trevelgue Head at Porth Beach. The site encompasses the Gannel Estuary as far as the tidal limit near the A3075 road bridge. The seaward boundary extends in an arc around the coastline at a distance of 1km. The site contains a distinct (but not spatially separate) zone, which is the Gannel Estuary. This has a draft conservation objective for European eel, unlike the remainder of the site.

***Sites to which the site is related**:* There is a coastal SSSI at Kelsey Head.

Maps of the site are included at the end of this site report. The main site map shows points with coordinates along the site boundary (in WGS84 UTM30N).

Features proposed for designation with the Newquay and the Gannel rMCZ

Table II.3.37a Draft conservation objectives for the Newquay and the Gannel rMCZ. M = maintain in favourable condition, R = recover to favourable condition. This is an extract of the conservation objective summary tables in section II.2.6. ***The full text of the draft conservation objectives can be found in appendix 15****.*

Broad-scale habitats	Subtidal coarse sediment		**M**
	Subtidal mud		**M**
	Subtidal sand		**M**
	Coastal saltmarshes and saline reedbeds		**M**
	High energy intertidal rock		**M**
	Intertidal coarse sediment		**M**
	Intertidal mud[1]		**M**
	Intertidal sand and muddy sand		**M**
	Low energy intertidal rock		**M**
	Moderate energy intertidal rock		**M**
Species FOCI	*Eunicella verrucosa*	Pink sea-fan	**M**
	Gobius cobitis	Giant Goby	**M**
	Ostrea edulis	Native oyster	**M**
	Paludinella littorina	Sea snail	**M**
	Anguilla anguilla	European eel	**? M / R [2]**

[1]Some of the area mapped as intertidal mud on the wave-exposed beaches within this site is sand, not mud – this is down to a known translation issue between habitat classification systems, explained in appendix 8, which has led to some intertidal sand areas being mapped as intertidal mud. The intertidal habitat in the Gannel Estuary is genuinely muddy.

[2] The draft conservation objective for this species applies only in the estuarine zone of the rMCZ. At the time of the vulnerability assessment meetings, no decision was taken whether the conservation objective for this feature should be 'maintain' or 'recover'. No quantitative information is included for this mobile FOCI species in the tables below, as the resolution of the GIS data available was too coarse to be meaningful. However, the species has been included in the draft conservation objectives on the basis of evidence provided to the project by the Environment Agency (see appendix 8).

The following tables show ENG-related statistics for this site, reported from spatial data available in Finding Sanctuary's GIS datasets. Greyed out rows indicate features for which GIS data exists within the site boundary, but which have not been included on the list of draft conservation objectives (the reasons are stated in table footnotes).

Table II.3.37b ***Subtidal broad-scale habitats*** *recorded in this rMCZ, based on an analysis of Finding Sanctuary's EUNIS level 3 broad-scale habitat GIS data (see appendix 8). Data sources: 1 - UKSeaMap, 2 - MESH, 3 - Environment Agency.*

Habitat	Area covered within rMCZ (km^2)	% of total in study area	Source(s)
Subtidal coarse sediment	7.74	<0.1%	1
Subtidal sand	<0.01	<0.1%	1
Subtidal mud	<0.01	<0.1%	1

Table II.3.37c ***Intertidal broad-scale habitats*** *recorded in this rMCZ, based on an analysis of Finding Sanctuary's EUNIS level 3 broad-scale habitat GIS data (see appendix 8). Data sources: 2 - MESH, 3 - Environment Agency, 4 – MB102.*

Habitat	Area covered within rMCZ (km^2)	% of total in study area	Source(s)
High energy intertidal rock	0.03	0.4%	4
Moderate energy intertidal rock	<0.01	<0.1%	4
Low energy intertidal rock	0.05	1.7%	4
Intertidal coarse sediments	0.01	<0.1%	3
Intertidal sand and muddy sand	0.09	0.8%	4
Intertidal mud[1]	1.41	0.8%	4, 3
Coastal saltmarshes and saline reedbeds	0.02	0.8%	3

[1]Some of the area mapped as intertidal mud on the wave-exposed beaches within this site is sand, not mud – this is due to a known translation issue between habitat classification systems, explained in appendix 8, which has led to some intertidal sand areas being mapped as intertidal mud. The intertidal habitat in the Gannel Estuary is genuinely muddy.

Table II.3.37d ***FOCI habitats*** *recorded in this rMCZ, based on an analysis of Finding Sanctuary's amalgamated GIS FOCI datasets (see appendix 8). Data sources: 1 - MB102; 2 - JNCC/ MESH Canyons survey data; 3 - ERCCIS/Isles of Scilly Wildlife Trust; 4 - DORIS.*

Habitat	Area covered (km^2)	Number of point records (total)	Number of point records (pre-1980)	Source(s)
Subtidal sands and gravels[1]	6.21			1

[1] Conservation objectives have not been included for subtidal sands and gravels as we have considered any conservation requirements met by listed broad-scale habitats.

Table II.3.37e ***FOCI species*** *recorded in this rMCZ, based on an analysis of Finding Sanctuary's amalgamated GIS FOCI datasets (see appendix 8). Data Sources: 1 - MB102; 2 - Dorset Wildlife Trust; 3 - Cornwall Wildlife Trust; 4 - DERC; 5 - SeaSearch 2009; 6 - Steve Trewhella Survey Log 2010.*

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
Eunicella verrucosa	1		3
Gobius cobitis	1		1
Ostrea edulis	2	2	3
Paludinella littorina	1		3

This rMCZ also intersects with polygonal data which The Seahorse Trust provided via our interactive map, indicating the stretches of the south-west coastline along which one or both species of seahorse are found. This site intersects with 0.64 km^2 of seahorse area polygon (refer to appendix 8 for more information).

For additional understanding on how this site is located in relation to environmental data layers, including areas of high benthic biodiversity, offshore bird aggregation areas, or areas of seasonal sea surface temperature fronts, please refer to the interactive PDF maps presented alongside this report.

Site summary

Newquay was formerly an important port and fishing village, and is now north Cornwall's premier resort town (Davies, 1998). Buck (1993) described the Gannel as a small estuary lying between the two exposed headlands of Pentire Point East and Pentire Point West near Newquay, having a shallow inlet that has been rapidly silting up with sand in recent times. Water quality within the estuary has been classified as grade A. The largest area of subtidal habitat is at Vugga Cove at the mouth of the estuary, where the channel is at its deepest. Sheltered by the headlands is Crantock Beach, a broad, calcareous sandflat, which is backed by a small area of dunes. In the upper part of the estuary there is an extensive area of saltmarsh (Buck, 1993). Burd (ed.1989) also studied the Gannel estuary during the saltmarsh survey of Great Britain. The depth range of the rMCZ is from OS Boundary Line mean high water to 5m.

This site includes the Gannel Estuary. One of the reasons for the inclusion of this and other estuarine rMCZs in the network was in recognition of the added ecological importance of estuaries in terms of productivity, and their ecological function as nursery areas. The rMCZ also intersects with an area of higher than average benthic species diversity (mapped from MB102 data).

Detailed site description

Two surveys of the South West England estuaries were undertaken during the periods June-August 1981, and October 1982 by Craig & Moreton (1986). Sediment samples were collected at low water from intertidal sites within the Gannel. Pirrie *et al*. (2000a; 2000b) examined the mineralogy and geochemistry of the inter-tidal sediments in the Camel and Gannel estuaries on the north Cornwall coast.

Bryan & Hummerstone (1978; 1978b) collected *Scrobicularia* of different sizes and samples of surface sediment from the intertidal zone at low tide. Luoma & Bryan (1978) also collected sediment samples from the oxidized surface layer of intertidal sediments within the Gannel estuary. Sediments, *Fucus vesiculosus, Nereis (Hediste) diversicolor* and *Scrobicularia plana* were collected, with other common species where available, from a number of estuaries in England and Wales, including the Gannel estuary by Langston (1980) to examine arsenic concentrations. *Mytilus edulis* and *Mytilus galloprovincialis* and their hybrids were collected from 33 locations during 1996 and 1998 around the Southwest by Hilbish et al. (2002), which included from the mid-tidal zone at Newquay, to examine the distribution of species in the mussel population.

During the pink sea fan survey of 2001-2002, the distribution, abundance and condition of sea fans were surveyed in the Newquay area in by Wood (2003). 103 specimens were recorded between Land's End and Lamorna Cove. No sea fan anemones (*Amphianthus dorhnii*) were recorded. 'The sea fans were generally in good condition with the exception of those at the deep Pells Reef, north of Newquay which were notably poor and fouled with silty hydroid/bryozoans turf' (Wood, 2003).

In 2011 Cornwall Wildlife Trust surveyed the Gannel and Pentire Point for seaweeds with Professor Juliet Brodie. Subtidal sites in this area were also surveyed by Seasearch divers with a particular focus on seaweeds and sponges. This included Medusa Reef, The Ridge, the Old Lifeboat Slip, The Goose, Bidgey Reef and Poltexas Reef (Angie Gall, *pers. comm*.). The subtidal reefs off the Gannel are exposed and scoured. There are many surge gullies with communities of encrusting sponges and seasquirts below the kelp. The deeper reefs such as Pol Texas and Medusa Reef are dominated by short bryozoan and hydroid turf with small branching sponges and pink sea fans on vertical surfaces (Angie Gall, *pers. comm*.).

The GIS data reported in table II.3.37c indicates a small area of saltmarsh present in the Gannel estuary. The Environment Agency has commented that a road development has led to loss of coastal saltmarsh in the area.

There have been a number of sightings of Short Snouted Seahorses in the Newquay region, the most recent of which occurred in 2010 and were spotted by divers (Neil Garrick-Maidment*, pers. comm.*).

Stakeholder narrative: Assumptions and Implications

As explained in part I, the stakeholder narrative is a vital underpinning of the site recommendations. Working assumptions and implications are presented here, and additional comments are presented in the following section.

The following fundamental assumption was recorded to apply to all activities in all sites: **The fundamental assumption about human activities within MCZs is that activities can continue (under current licensing regimes where applicable), as long as they do not prevent the conservation objectives from being achieved.** This assumption applies to all activities. Table II.3.37f shows more specific working assumptions and implications that were recorded for this site over the course of the planning process.

Following that, table II.3.37g shows the vulnerability assessment (VA) snapshot for this site. The VA meetings took place at the end of the project, and they did not involve the Steering Group. They started to discuss site management, but did not reach any firm conclusions. The VA snapshot table reflects the point that the VA discussions had reached at the time of the last Joint Working Group meeting in May 2011. Many Steering Group members expressed concerns about the VA process and its outcomes (see section II.2.1 for full details).

Table II.3.37f Specific assumptions and implications relating to Newquay and The Gannel rMCZ. Black text reflects the working assumptions and implications recorded throughout the planning discussions. The development of the narrative recorded in black can be traced back through the Working Group and Steering Group meeting reports from 2009 to 2011. Red and green text in the first column comments on how the snapshot of the vulnerability assessment (VA) relates to each of the working assumptions that had been made as planning took place (refer to part I for a full explanation of the VA snapshot).

Activities assumed to not be allowed within the site	
Assumptions	**Implications**
Aggregate extraction will not be allowed Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o Aggregate dredging can only occur where the mineral resources are geologically located – in highly localised and discrete areas. If aggregate operations are not allowed in MCZs (subject to appropriate monitoring, mitigation and management), and MCZs coincide with aggregate resource, then this will have significant impact on national construction aggregate supply and coast defence. **Given this assumption, there are still the following concerns:** o If aggregate operations (subject to appropriate monitoring, mitigation and management) are restricted in areas adjacent to an MCZ, then this will have significant impact on national construction aggregate supply and coast defence.

Bottom-towed fishing gear will not be allowed (includes benthic trawling and hydraulic dredging) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o Loss of ground for bottom-towed gear fishermen o Displacement of bottom-towed gear o Increased competition for fishing grounds o Reduced diversity and flexibility of fishing o Cumulative impact on bottom-towed gear fleet where protected areas are close together o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers. (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) o Potential safety implications derived from displacement from sheltered areas. o Potential environmental implications derived from concentrating effort in alternative grounds or due to new fishing ground searching activity.
Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Anchoring of large vessels will not be allowed (except in emergencies) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.

Netting and longlining will not be allowed *This assumption was recorded early on in the process, in order to protect nursery habitats and juveniles in all sites with draft conservation objectives for mobile FOCI. Stakeholder feedback has indicated that the assumption about longlining is inappropriate, as the activity does not happen inshore. An uncertainty remains around netting, where the activity may have an impact on nursery habitat - this uncertainty was not resolved through the VA* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o Loss of ground for netters o Displacement of netters o Increased competition for fishing grounds o Reduced diversity and flexibility of fishing o Cumulative impact on netters where protected areas are close together **Given this assumption, there are still the following concerns:** o SAFFA fixed net restrictions apply. o A steering group member suggested that there should be no unlicensed netting activity within the estuary.

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	**Implications**
Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) **Given this assumption, there are still the following concerns:** o Static gear fishermen might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed
The installation, operation and maintenance of renewable energy devices will be permitted *Based on SAP feedback the assumption cannot apply to all sites in the network, although it can apply to any given site on its own.*	**Direct implications:** **Given this assumption, there are still the following concerns:** o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: - additional costs to the renewables industry, e.g. for licensing mitigation and monitoring - delays to renewables development - delays, lost revenue and additional costs associated with

Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	cable repair activity restrictions o Attracting the funding (for development) may be harder in the first place as sites with MPA designations within them will be less attractive to potential investors. o Costs and delays associated with co-location of renewables in MCZs, could result in long term implications in terms of renewables deployment which could have serious implications for industry and Government in terms of loss of operational revenue and missing EU climate change targets. o Enforced co-location with MCZs would dramatically restrict deployment. **If the assumption turns out to be wrong:** o If co-location assumptions are not correct the impacts would/could be: site locations that can't be developed, increased costs (the implications could be re-routing of cables around a feature could cost an additional £600,000 - £1.3m/km depending on cable type, size and seabed geology), construction delays, failure to meet renewables targets, impacts on acidification, additional monitoring requirements, increased uncertainty and declining investor confidence in renewables activities. o Increased competition for sea space with other sea users. o Limited near-shore wave energy potential.
Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Aquaculture of fin fish and shell fish will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Crab tiling / bait digging will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Beach replenishment will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o A Steering Group member commented to say that the flood risk management policy in the site is managed retreat.

Activities assumed to be allowed to continue / occur within the site	
Assumptions	**Implications**
Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed **Benefits:** o Potential for increased and enhanced leisure and recreational activity
Pelagic trawls will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
The installation and maintenance of cables will be permitted and will not be made prohibitively expensive within the site. This applies to power cables (including cables for renewable energy devices), and telecommunications cables. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** **Given this assumption there are still the following concerns:** o Cable installation cost increases and delay o Cable repair cost, delays and lost revenue could increase due to activity restrictions on cable repair. o There is no definition of what 'prohibitively expensive' means; the cables representative would like assurance that no additional cost will result from MCZ designation (beyond costs associated with existing management and mitigation requirements). **If the assumption turns out to be wrong:** o For renewables/power cables, re-routing of cables around a feature or site might mean longer cable routes, at

	a cost of £600,000 - £1.3 million/km depending on cable type, size and seabed geology. o There may be other costs, e.g. costs associated with licensing, mitigation measures and monitoring requirements. o Increased licensing requirements and costs of cabling may have serious implications for industry and Government in terms of loss of operational revenue, missing EU climate change targets etc. o Possible cable route to renewables resources.
The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Tourism and recreational activities will be permitted. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Maintenance dredging in ports (to enable access to ports) will be permitted *The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o (no heritage wrecks currently present in the site)
Anchoring of small vessels will be permitted *There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o No clear working group definition exists of what counts as a 'small' vessel - 24m was proposed some time ago by the RYA, but no decision was reached as to whether we would adopt that size in MCZ planning.
Passage of ships will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Seaweed harvesting will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Table II.3.37g VA Snapshot table: This table records the point which the vulnerability assessment discussions had reached regarding site management, at the time of the final Joint Working Group meeting in May 2011. The outcome is not definitive, and the VA did not carry out an exhaustive review of all the working assumptions recorded in the longer table above. The Steering Group were not directly involved in the VA discussions, and at their final meeting, expressed considerable reservations about the VA outcome (see section II.2.1). The reason this VA snapshot table is included here is so that readers have a record of what the VA snapshot was showing at the time the final stakeholder comments were recorded for this site. For a full explanation of the VA snapshot, please refer to part I. The maps in appendix 13 show a visual representation of the information in all the VA snapshot tables in the rMCZ site reports.

Sector	Potential Management
n/a	n/a

Stakeholder narrative: Uncertainties and Additional Comments

Uncertainties

The most significant uncertainty faced by the project was the lack of knowledge on management of MCZs, and this uncertainty still applies to all rMCZs in the network. There was uncertainty over what activities will be affected by MCZ designations: what activities will be permitted to continue within (or near) MCZs, what activities will not be permitted, and what activities will require mitigation or some form of restriction other than a complete ban. There was also uncertainty over what measures will be taken to ensure any activity restrictions are put in place (e.g. byelaws, voluntary measures).

The following is a set of additional uncertainties relevant to this site:

- The port has concerns regarding the inclusion of Newquay port within this rMCZ, in terms of its impact on the fishing industry.

The following is a set of additional comments made by stakeholder representatives over the course of the planning work. Some of these comments were made specifically about this site, others were more generic comments which the project team consider to be relevant to this site.

- *Mobile bottom gear*
    - Seasonal closures are an inappropriate measure for benthic conservation.

- *Commercial fishing*
    - Commercial fishing raised concerns that estuaries are surplus to the requirement of the ENG.

- *Anchoring and aggregates*
    - This rMCZ was realigned to take account of anchoring and aggregate export.

- *Netting and longlining*
    - When the detailed assumptions were drafted for rMCZs in the network during the third planning iteration, all sites with 'water column protection' had an assumption that 'netting and longlining will not be allowed'. This applied to all sites considered for the protection of seabirds, cetaceans, or any of the three mobile FOCI listed in the ENG – smelt, undulate ray and European eel. Longlining does not occur in inshore sites in the region, and feedback from stakeholders was that the longlining

assumption is not appropriate for any site. For sites that still have draft conservation objectives for seabirds or cetaceans in the final recommendations, the netting / longlining assumption has been superseded by the fact that the stakeholder group agreed on a different set of assumptions for these features (largely around the need for monitoring, and some possible voluntary codes of conduct, but no fishing restrictions). However, for sites that have draft conservation objectives for mobile FOCI, an uncertainty remains with respect to netting, where it may have an impact on nursery habitats or juvenile FOCI. This particular rMCZ was added to the network in the final planning stages, after the detailed work on developing assumptions had already happened, but given that the site has a draft conservation objective for Anguilla Anguilla, European eel, the uncertainty around netting applies.

- *General benefits of MCZs*
    - Some stakeholder representatives would like the following recorded and for these to be considered during the impact assessment:
        - Fisheries spill-over.
        - Improvements for the local economy.
        - Education opportunities.
        - Benefits to science.
        - Focus for voluntary groups.
        - Potential increase in the amount and quality of recreational activities (diving, sea angling, environmental tourism, etc).
        - The designation as an MCZ will be a selling point and will undoubtedly be used as an identifier to the area to highlight it as somewhere to visit.

- *Monitoring*
    - There are two main types of monitoring which will need to take place within rMCZs:
        - Monitoring the activities within a site and the various levels at which they are occurring.
        - Monitoring the ENG features for changes in condition.

- *Reaction to the vulnerability assessment process and outcomes*
    - At the sixth Joint Working Group meeting in June 2011, the results from the regional vulnerability assessment (VA) discussions were presented to the group, as shown in table II.3.37g (the VA process is described in part I). This generated concern within the JWG, for two reasons. Firstly, several members of the group had serious misgivings over the outcome of the management discussions, especially with respect to those inshore rMCZs (including this one) for which no management of bottom-towed mobile fishing gear was highlighted as necessary. Secondly, the group had serious misgivings about the process itself, from which they felt disenfranchised.
    - The Steering Group made a statement at their final meeting, articulating those concerns in more detail. They recommended that there should be a process that allows them to review potential management measures for MCZs, before public consultation. The full statement made by the Steering Group is in section II.2.1.

Levels of support

The network report (section II.2) includes a project team reflection on levels of support for the network recommendations as a whole, and the site specific reflection presented here should be read within the wider network context.

Compared to other rMCZs, this site has generated few strong positive or negative statements from stakeholder representatives.

Supporting documentation

GIS data used for reporting the quantitative habitat and species figures in the tables above includes the following sources: UKSeaMap modelled broad-scale habitat data, Cornwall Wildlife Trust, MB102, and Environment Agency intertidal habitat data. Refer to appendix 8 for details, and to the tables above for data sources for specific features in this site.

Further evidence underpinning the site can be found in the publications and datasets referred to in the detailed site description. Cornwall Wildlife Trust have carried out recent survey work along the north coast of Cornwall, including within the area of this rMCZ. Their latest survey records were not included in the GIS datasets used to generate the figures in this report, but new survey information is included in the additional materials (see appendix 14), and further information is available from Angie Gall at Cornwall Wildlife Trust.

Site map series

On the following pages there are three maps of this site.

- The first map (FR_051a) is the main site map showing the rMCZ boundary and includes points with coordinates (in WGS84 UTM30N). The map also shows charted depth and existing Marine Protected Areas for reference. Please note: the lat/long coordinates of the vertices in the following maps have been calculated in decimal degrees, and in degrees, minutes and seconds. For plotting on a standard Admiralty (UKHO) chart, the seconds of each coordinate need to be converted to decimal. An MS Excel table showing all coordinates in degrees, minutes and decimal seconds has been provided in the additional materials section (see Appendix 14) for plotting purposes.
- The second map (FR_051b) shows the rMCZ boundary over broad-scale habitats, and records of habitat and species FOCI. The data shown on this map corresponds with the information in tables II.3.37b, II.3.37c, and II.3.37e, data sources are indicated in the tables.
- The third map (FR_051c) shows socio-economic datasets. For spatial data showing the distribution of fishing effort, please refer to the interactive PDF maps supplied with the additional materials (see appendix 14).
- Because of the large number of features shown on the site maps (especially inshore biophysical maps), it has not been possible to embed comprehensive legends within the site maps themselves. A comprehensive map legend is therefore provided in appendix 7, which explains the symbology used on all the maps within this final report.
- Appendix 8 describes the data sources for the information shown on the final report maps in detail.

Map: FR_051a

Version:31Aug11

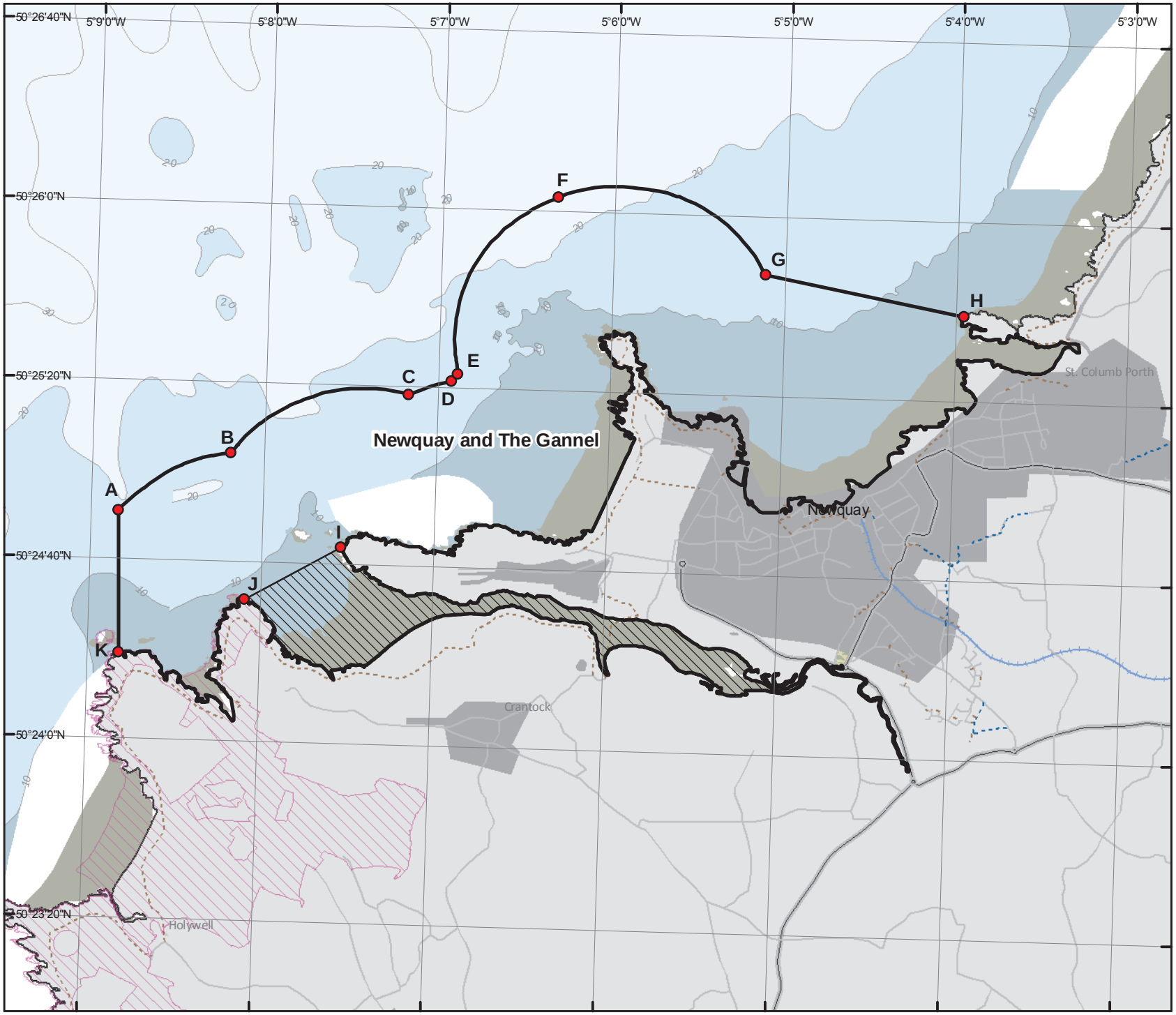
Newquay and The Gannel rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 0.4 0.8 1.6 km

N

FINDING SANCTUARY



Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.4141	-5.1473	50° 24' 50" N	5° 8' 50" W
B	50.4178	-5.1366	50° 25' 4" N	5° 8' 11" W
C	50.4217	-5.1195	50° 25' 18" N	5° 7' 10" W
D	50.4226	-5.1154	50° 25' 21" N	5° 6' 55" W
E	50.4231	-5.1148	50° 25' 22" N	5° 6' 53" W
F	50.4342	-5.1055	50° 26' 3" N	5° 6' 19" W
G	50.4297	-5.0852	50° 25' 47" N	5° 5' 6" W
H	50.4275	-5.0659	50° 25' 39" N	5° 3' 57" W
I	50.4121	-5.1257	50° 24' 43" N	5° 7' 32" W
J	50.4088	-5.1348	50° 24' 31" N	5° 8' 5" W
K	50.4053	-5.1469	50° 24' 18" N	5° 8' 48" W

Map Legend

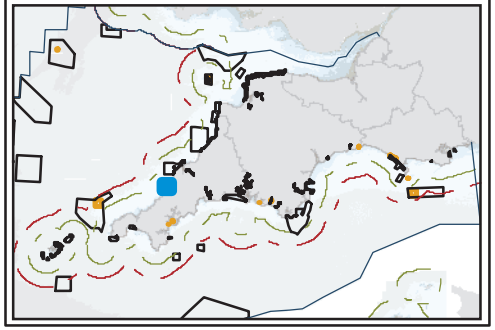
Recommended MCZ (rMCZ)

Zone within a rMCZ

Existing MPAs

SSSI (not part of MPA network)

A comprehensive legend is provided in the appendices of the Finding Sanctuary final report.



Map: FR_051b

Version:30Aug11

Newquay and The Gannel rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with biophysical information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 0.9 1.8 km N

FINDING SANCTUARY

50°26'40"N 5°10'0"W 5°9'0"W 5°8'0"W 5°7'0"W 5°6'0"W 5°5'0"W 5°4'0"W 5°3'0"W 5°2'0"W

50°26'0"N

50°25'20"N

50°24'40"N

50°24'0"N

50°23'20"N

Newquay and The Gannel

St. Columb Porth

St. Columb Minor

Newquay

Crantock

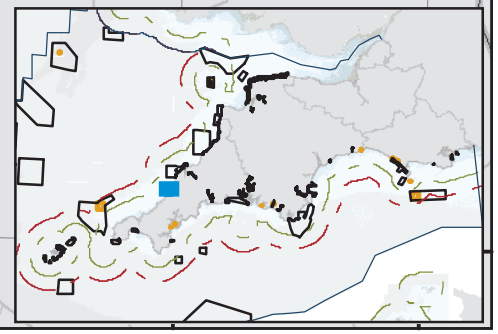
Holywell

Map Legend

Recommended MCZ (rMCZ)

Zone within a rMCZ

These maps contain data from the following sources: Defra contracts MB102/MB106, the JNCC and Natural England, the Environment Agency, Wildlife NGOs and local records centres. Full details and a comprehensive legend are provided in the appendices of the Finding Sanctuary final report.



Map: FR_051c

Version:5Sep11

Newquay and The Gannel rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with socio-economic information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 0.4 0.8 1.6 km

N

FINDING SANCTUARY

5°10'0"W 5°9'0"W 5°8'0"W 5°7'0"W 5°6'0"W 5°5'0"W 5°4'0"W 5°3'0"W 5°2'0"W

50°26'40"N 50°26'0"N 50°25'20"N 50°24'40"N 50°24'0"N 50°23'20"N

Newquay and The Gannel

Newquay

St. Columb Porth

St. Columb Minor

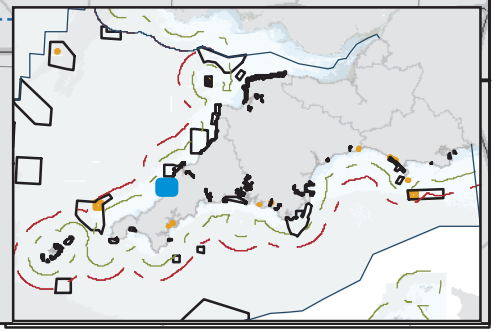
Crantock

Holywell

Map Legend

- Recommended MCZ (rMCZ)
- Zone within a rMCZ
- Fixed net restrictions
- Flood or coastal defence structure
- Charted wrecks
- Anchorage

This map series contains data from a variety of sources including the UKHO, the Environment Agency, and The Crown Estate. A full list and a comprehensive legend can be found in the appendices of the Finding Sanctuary final report.



II.3.38 Padstow Bay and surrounds rMCZ

Basic site information

***Site centre location (datum used: ETRS89)*:**

Decimal Degrees		Degrees Minutes Seconds	
Lat	**Long**	**Lat**	**Long**
50.5476	-5.0574	50° 32' 51'' N	5° 3' 26'' W

***Site surface area*:** 91.87 km^2 (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea
OSPAR region: Region III: Celtic Waters

Site boundary: The boundary of this site runs along the OS Boundary Line mean high water mark from Park Head (to the north of Trenance) to Com Head (just east of Pentire Point and The Rumps). The seaward boundary runs about 6km west from Park Head, and then north for about 9.5km. It then runs in a straight line to Gulland Rock, and then in a straight line towards Pentire Point. The boundary arches around Pentire Point and The Rumps at a distance of 1km, forming a seaward extension of the Pentire Peninsula SSSI. The 1km buffer area around the Pentire Peninsula SSSI forms a zone that is distinct (but not spatially separated) from the rest of the site, as this area has added draft conservation objectives for seabirds and bottlenose dolphins.

Sites to which the site is related: The Pentire Peninsula SSSI is a coastal site protecting seabird colonies, and the rMCZ boundary arching around it is designed to afford protection to seabirds using the sea for feeding and loafing. There are SSSIs at Trevose Head and Constantine Bay, at Trevone, and at Bedruthan Steps and Park Head.

Maps of the site are included at the end of this site report. The main site map shows points with coordinates along the site boundary (in WGS84 UTM30N).

Features proposed for designation within the Padstow Bay and surrounds rMCZ

Table II.3.38a Draft conservation objectives for the Padstow Bay rMCZ. M = maintain in favourable condition, R = recover to favourable condition. This is an extract of the conservation objective summary tables in section II.2.6. ***The full text of the draft conservation objectives can be found in appendix 15****.*

Broad-scale habitats	Subtidal coarse sediment		**M**
	Moderate energy circalittoral rock		**M**
	Moderate energy infralittoral rock		**M**
	High energy circalittoral rock		**M**
	High energy infralittoral rock		**M**
	High energy intertidal rock		**M**
	Intertidal coarse sediment		**M**
	Intertidal mud[1]		**M**
	Intertidal sand and muddy sand		**M**

	Moderate energy intertidal rock		**M**
Species FOCI	*Arctica islandica*	Ocean quahog	**M**
	Eunicella verrucosa	Pink sea-fan	**M**
	Haliclystus auricula	Stalked jellyfish	**M**
	Lucernariopsis cruxmelitensis	Stalked jellyfish	**R**
	Palinurus elephas	Spiny lobster	**M**
Mobile species not listed in ENG[2]	*Tursiops truncatus*	Bottlenose dolphin	**M**
	Fulmarus glacialis	Fulmar	**M**
	Uria aalge	Guillemot	**M**
	Fratercula arctica	Puffin	**M**
	Alca torda	Razorbill	**M**
	Rissa tridactyla	Kittiwake	**M**

[1]Some of the area mapped as intertidal mud on the wave-exposed beaches within this site is sand, not mud – this is down to a known translation issue between habitat classification systems, explained in appendix 8, which has led to some intertidal sand areas being mapped as intertidal mud.

[2]The draft conservation objectives for these birds and for the bottlenose dolphin only apply within the zone around the Pentire Peninsula SSSI, marked with cross-hatching on the site maps at the end of this site report.

The following tables show ENG-related statistics for this site, reported from spatial data available in Finding Sanctuary's GIS datasets. Greyed out rows indicate features for which GIS data exists within the site boundary, but which have not been included on the list of draft conservation objectives (the reasons are stated in table footnotes).

*Table II.3.38b **Subtidal broad-scale habitats** recorded in this rMCZ, based on an analysis of Finding Sanctuary's EUNIS level 3 broad-scale habitat GIS data (see appendix 8). Data sources: 1 - UKSeaMap, 2 - MESH, 3 - Environment Agency.*

Habitat	**Area covered within rMCZ (km^2)**	**% of total in study area**	**Source(s)**
High energy infralittoral rock	44.45	6.1%	1
Moderate energy infralittoral rock	0.58	0.2%	1
High energy circalittoral rock	9.71	0.8%	1
Moderate energy circalittoral rock	12.18	<0.1%	1
Subtidal coarse sediment	23.59	<0.1%	1

*Table II.3.38c **Intertidal broad-scale habitats** recorded in this rMCZ, based on an analysis of Finding Sanctuary's EUNIS level 3 broad-scale habitat GIS data (see appendix 8). Data sources: 2 - MESH, 3 - Environment Agency, 4 – MB102.*

Habitat	Area covered within rMCZ (km^2)	% of total in study area	Source(s)
High energy intertidal rock	0.48	6.6%	4
Moderate energy intertidal rock	<0.01	0.1%	4
Intertidal coarse sediments	0.07	0.4%	4, 3
Intertidal sand and muddy sand	0.12	1.0%	4
Intertidal mud[1]	0.65	0.4%	4, 3

[1]Some of the area mapped as intertidal mud on the wave-exposed beaches within this site is sand, not mud – this is down to a known translation issue between habitat classification systems, explained in appendix 8, which has led to some intertidal sand areas being mapped as intertidal mud

*Table II.3.38d **FOCI habitats** recorded in this rMCZ, based on an analysis of Finding Sanctuary's amalgamated GIS FOCI datasets (see appendix 8). Data sources: 1 - MB102; 2 - JNCC/ MESH Canyons survey data; 3 - ERCCIS/Isles of Scilly Wildlife Trust; 4 - DORIS.*

Habitat	Area covered (km^2)	Number of point records (total)	Number of point records (pre-1980)	Source(s)
Subtidal sands and gravels[1]	23.57			1

[1] Conservation objectives have not been included for subtidal sands and gravels as we have considered any conservation requirements met by listed broad-scale habitats.

*Table II.3.38e **FOCI species** recorded in this rMCZ, based on an analysis of Finding Sanctuary's amalgamated GIS FOCI datasets (see appendix 8). Data Sources: 1 - MB102; 2 - Dorset Wildlife Trust; 3 - Cornwall Wildlife Trust; 4 - DERC; 5 - SeaSearch 2009; 6 - Steve Trewhella Survey Log 2010.*

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
Arctica islandica	1	1	3
Eunicella verrucosa	21	10	1, 3
Haliclystus auricula	1		3
Lucernariopsis cruxmelitensis	1		1
Palinurus elephas	1	1	1

This rMCZ also intersects with polygonal data which The Seahorse Trust provided via our interactive map, indicating the stretches of the south-west coastline along which one or both species of seahorse are found. This site intersects with 1.05 km^2 of seahorse area polygon (refer to appendix 8 for more information).

For additional understanding on how this site is located in relation to environmental data layers, including areas of high benthic biodiversity, offshore bird aggregation areas, or areas of seasonal sea surface temperature fronts, please refer to the interactive PDF maps presented alongside this report.

Site summary

The site extends around a stretch of coastline that is characterised by exposed cliffs and sandy wave-exposed bays, including the entrance to the Camel Estuary (beyond the Doom Bar). The site extends

from the shore line to approximately 50m of depth. Rocky habitat is present within the subtidal portion of the site. The rMCZ intersects with an area of higher than average benthic species and habitat diversity (within the south-west context). Local Group feedback indicates that salt marsh, tide-swept biotopes, estuarine rocky habitats, and blue mussel beds are also present in this area, but we have no mapped records of these FOCI within the rMCZ boundary (some of these Local Group comments may have come from earlier discussions when the area under discussion included more of the Camel estuary, which is not included within the rMCZ boundary as it is now).

Detailed site description

Sublittoral habitats and communities from East Trevose Head to Port Isaac were studied during the SWBSS (Hiscock 1978a). Most of the coast consists of a flat sand plain or gentle slope extending into shallow water with rock outcrops and broken reefs; most rock surfaces have a covering of sediment. Off headlands, stable and often very broken bedrock extend into deeper water. Sand is important to the structure of sublittoral communities except at headlands (Davies, 1998). Communities at The Bull near Trevose Head were very distinctly different with dense populations of *Mytilus edulis*, *Dendrodoa grossularia* and *Maia squinado*, and the kelp forest expanding to about 11m (Hiscock, 1981).

At Trevone and Trebetherick, there are extensive rocky shores which were considered sites of primary marine biological importance (Powell *et al*. 1978); these sites are the most extensive rocky shores on the north Cornwall coast. Trevone was a special study site following the *Torrey Canyon* disaster in 1968 (Smith, 1968). Newtrain Bay, Trevone has a series of irregular rocky reefs which support rich littoral communities. Mid-shore habitats were mussel/barnacle/limpet-dominated, the limpet *Patella aspersa* (now *Patella ulyssiponensis*) was particularly abundant. An unusual feature of the site was a zone of the brown alga *Cystoseira tamariscifolia* at low water (Davies, 1998). A population of the Mediterranean hermit crab *Clibanarius erythropus* was present but has not been seen following the oil pollution from the *Torrey Canyon*. Trebetherick Point lies at the southern end of a series of rocky reefs and has a typical mussel/barnacle/limpet dominated mid-shore and algal-dominated low shore. In low-shore pools and gullies, the sublittoral alga *Desmarestia ligulata* and the rare sea-slug *Onchidella celtica* were present (Davies, 1998).

Rocks surveyed by Hiscock (1981) in the Padstow area are dominated by algae to about 13m but kelp is restricted to shallow water (gen. <3m). Circalittoral communities included several southern species but a low variety of species was generally present. Characteristic species included *Pentapora foliacea*, *Stolonica socialis*, *Alcyonidium gelatinosum*, *Eunicella verrucosa* and *Marthasterias glacialis*.

Eunicella verrucosa has been reported during recent Seasearches in the Padstow area and during the 1977 South-West Britain Sublittoral Survey of Padstow (Hiscock, 1978).

Palinurus elephas was also recorded during the 1977 South-West Britain Sublittoral Survey of Padstow (Hiscock, 1978).

There have been a number of seahorses found just outside of Padstow Harbour; the harbour entrance is not really suitable for seahorses but offshore provides an ideal habitat (Neil Garrick-Maidment, *pers. comm*).

Stakeholder narrative: Assumptions and Implications

As explained in part I, the stakeholder narrative is a vital underpinning of the site recommendations. Working assumptions and implications are presented here, and additional comments are presented in the following section.

The following fundamental assumption was recorded to apply to all activities in all sites: **The fundamental assumption about human activities within MCZs is that activities can continue (under current licensing regimes where applicable), as long as they do not prevent the conservation objectives from being achieved.** This assumption applies to all activities. Table II.3.38f shows more specific working assumptions and implications that were recorded for this site over the course of the planning process.

Following that, table II.3.38g shows the vulnerability assessment (VA) snapshot for this site. The VA meetings took place at the end of the project, and they did not involve the Steering Group. They started to discuss site management, but did not reach any firm conclusions. The VA snapshot table reflects the point that the VA discussions had reached at the time of the last Joint Working Group meeting in May 2011. Many Steering Group members expressed concerns about the VA process and its outcomes (see section II.2.1 for full details).

Table II.3.38f Specific assumptions and implications relating to Padstow Bay and surrounds rMCZ. Black text reflects the working assumptions and implications recorded throughout the planning discussions. The development of the narrative recorded in black can be traced back through the Working Group and Steering Group meeting reports from 2009 to 2011. Red and green text in the first column comments on how the snapshot of the vulnerability assessment (VA) relates to each of the working assumptions that had been made as planning took place (refer to part I for a full explanation of the VA snapshot).

Activities assumed to not be allowed within the site	
Assumptions	**Implications**
Aggregate extraction will not be allowed Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o Aggregate dredging can only occur where the mineral resources are geologically located – in highly localised and discrete areas. If aggregate operations are not allowed in MCZs (subject to appropriate monitoring, mitigation and management), and MCZs coincide with aggregate resource, then this will have significant impact on national construction aggregate supply and coast defence. **Given this assumption, there are still the following concerns:** o If aggregate operations (subject to appropriate monitoring, mitigation and management) are restricted in areas adjacent to an MCZ, then this will have significant impact on national construction aggregate supply and coast defence.

Bottom-towed fishing gear will not be allowed (includes benthic trawling and hydraulic dredging) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o Loss of ground for bottom-towed gear fishermen o Displacement of bottom-towed gear o Increased competition for fishing grounds o Reduced diversity and flexibility of fishing o Cumulative impact on bottom-towed gear fleet where protected areas are close together o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers. (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) o No restriction on activity has been suggested as there is currently little/no bottom-towed trawling activity thought to be here. If this activity was to start/increase, it would affect the slow-growing, long-lived reef species found here. o Potential safety implications derived from displacement from sheltered areas. o Potential environmental implications derived from concentrating effort in alternative grounds or due to new fishing ground searching activity.
Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging This activity was discussed at the VA meeting, and it is not yet known whether disposal of material at the nearby disposal site would be permitted to continue with no addtional mitigation as a result of the rMCZ.	**Direct implications:** o There is currently an open disposal site which partially overlaps the rMCZ at the northern boundary of the site. Disposal within the area of overlap would not be compatible with the rMCZ. The overlapping area covers 145,667m^2, measuring approximately 770m at the longest point and 275m at the widest. o Natural England have advised that disposal may be restricted within the overlapping part of the disposal site and rMCZ. The port have expressed that this is manageable so long as they can continue unrestricted in the adjacent part of the disposal site. If there is any uncertainty regarding this statement then serious consideration should be given to the continued existence of this rMCZ. o A concern also remains relating to a scenario in the future where the port seek to renew their dredging license and they are no longer allowed to dispose of dredged material in the current active disposal site. In this event a new disposal site would have to be secured and the cost of this would be for the port to cover. Furthermore should a site be secured the travel to and from a new site may render dredging unviable, leading to the eventual closure of the port. If this proves a possible scenario the inclusion of this rMCZ within the network should be reconsidered for economic reasons. **Given this assumption, there are still the following concerns:** o Inability to dredge navigational channels, complete

	maintenance dredging and disposal of sediment from harbour would have a significant economic impact on the port. (The Port of Padstow has a significant role in serving the local, regional and national economy and is of strategic significance to the County of Cornwall. The Port facilitates a diverse range of activities with marine-based industry generating significant socio-economic value for the local Cornish economy. It is a key source of employment for the region currently estimated as over 500 jobs directly by marine related activities and in the tourism industry. Estimated annual input of port and associated marine activity into economy - both directly and by supporting tourism in the area is in the region of £20 million.) o A thorough environmental analysis of this site is required to assess the reality of a disposal site and MCZ coexisting. Furthermore, an Economic Impact Assessment is outstanding and essential in order to assess the immediate and future economic impact of this rMCZ on the port. A serious question should be raised about the viability of an active port and this rMCZ in such close proximity and in this case the economic significance of the port should take priority.
Anchoring of large vessels will not be allowed (except in emergencies) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o There are small port and harbour facilities in the area, and a wider concern has been raised about whether they would be impacted by an MCZ designation. **Given this assumption, there are still the following concerns:** o A Steering Group member commented to as what is the definition of a 'large vessel' and 'small vessel' e.g. a large vessel in Padstow could be a small vessel in a port like Plymouth. o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.

Netting and longlining will not be allowed *This assumption was recorded early on in the process, in order to protect nursery habitats and juveniles in all sites with draft conservation objectives for mobile FOCI. Stakeholder feedback has indicated that the assumption about longlining is inappropriate, as the activity does not happen inshore. An uncertainty remains around netting, where the activity may have an impact on nursery habitat - this uncertainty was not resolved through the VA* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o Loss of ground for netters o Displacement of netters o Increased competition for fishing groundso o Reduced diversity and flexibility of fishing o Cumulative impact on netters where protected areas are close together **Given this assumption, there are still the following concerns:** o SAFFA fixed net restrictions apply.

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	**Implications**
Tourism and recreational activities will be permitted. Following JWG5, the Wildlife Trust have advised a voluntary code of conduct to avoid disturbance / collisions with cetaceans.	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Local economy will suffer significantly if activities constrained. **Benefits:** o By publicising Codes of Conduct you increase the public awareness of species of interest within an area and this encourages increased tourism with benefits to the local economy.

Static fishing gear (except netting and longlining in the combined water column and seafloor protection zone) will be permitted, but there may need to be a limit on the amount of static gear used in the area. The VA meeting concluded that removal of spiny lobster would not be permitted in the site.	**Direct implications:** o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) **Given this assumption, there are still the following concerns:** o Static gear fishermen might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed o A Steering Group member commented to state that longlining in this area is small scale only from small vessels and for tagged Bass scheme.
The installation, operation and maintenance of renewable energy devices will be permitted *Based on SAP feedback the assumption cannot apply to all sites in the network, although it can apply to any given site on its own.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: - additional costs to the renewables industry, e.g. for licensing mitigation and monitoring - delays to renewables development - delays, lost revenue and additional costs associated with cable repair activity restrictions o Attracting the funding (for development) may be harder in the first place as sites with MPA designations within them will be less attractive to potential investors. o Costs and delays associated with co-location of renewables in MCZs, could result in long term implications in terms of renewables deployment which could have serious implications for industry and Government in terms of loss of operational revenue and missing EU climate change targets. o Enforced co-location with MCZs would dramatically restrict deployment. **If the assumption turns out to be wrong:** o If co-location assumptions are not correct the impacts would/could be: site locations that can't be developed, increased costs (the implications could be re-routing of cables around a feature could cost an additional £600,000 - £1.3m/km depending on cable type, size and seabed geology), construction delays, failure to meet renewables targets, impacts on acidification, additional monitoring requirements, increased uncertainty and declining investor

	confidence in renewables activities. o Increased competition for sea space with other sea users. o This rMCZ is located in an area of long term near-shore wave energy potential.
Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o Waste water outfalls are currently located in this area, these would be impacted if there were any changes to the current way of managing them.
Aquaculture of fin fish and shell fish will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Crab tiling / bait digging will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o A Steering Group member commented to state that, since the area appears to be outside the estuary, there may not be crab tiling undertaken.
Beach replenishment will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o If replenishment not permitted the local economy may suffer. **Given this assumption, there are still the following concerns:** o There are current coastal protection works in the area, and there has been concern around whether there would be any impacts on them arising from an MCZ designation. o A Steering Group member commented to state that the material used for replenishment should be allowed to be dredged from within the area. o The shoreline management policy is to hold the line at various locations within the estuary (which empties into the rMCZ but is not currently part of the rMCZ).

Activities assumed to be allowed to continue / occur within the site	
Assumptions	**Implications**
Padstow Port will be involved in developing management measures for the rMCZ. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o It is vital that Padstow Port is consulted on all management measures proposed.
Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Handliners might face possible additional costs if mitigation or monitoring needed **Benefits:** o Potential for increased and enhanced leisure and recreational activity
Pelagic trawls will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
The installation and maintenance of cables will be permitted and will not be made prohibitively expensive within the site. This applies to power cables (including cables for renewable energy devices), and telecommunications cables. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption there are still the following concerns:** o Cable installation cost increases and delay o Cable repair cost, delays and lost revenue could increase due to activity restrictions on cable repair. o There is no definition of what 'prohibitively expensive' means; the cables representative would like assurance that no additional cost will result from MCZ designation (beyond costs associated with existing management and mitigation requirements). **If the assumption turns out to be wrong:** o For renewables/power cables, re-routing of cables around a feature or site might mean longer cable routes, at

	a cost of £600,000 - £1.3 million/km depending on cable type, size and seabed geology. o There may be other costs, e.g. costs associated with licensing, mitigation measures and monitoring requirements. o Increased licensing requirements and costs of cabling may have serious implications for industry and Government in terms of loss of operational revenue, missing EU climate change targets etc. o Possible cable route to renewables resources.
The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Maintenance dredging in ports (to enable access to ports) will be permitted *The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.* This activity was discussed at the VA meeting, and it is expected that disposal of material would be permitted.	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Note that the boundary of this rMCZ was modified to not include the estuary, to help counteract serious concerns about the impacts that an MCZ designation might have on navigational dredging. o There are small port and harbour facilities in the area, and a wider concern has been raised about whether they would be impacted by an MCZ designation. **If the assumption turns out to be wrong:** o If assumption turns out to be wrong the Port will suffer catastrophically as it will silt/sand up and restrict vessel access. o Inability to dredge navigational channels, complete maintenance dredging and dispose of sediment from harbour.

Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o (No heritage wrecks currently present in the site)
Anchoring of small vessels will be permitted *There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o There are small port and harbour facilities in the area, and a wider concern has been raised about whether they would be impacted by an MCZ designation. o A Steering Group member stated that it is imperative that 'small vessel' is defined and definition is universally accepted and clear of ambiguity – consultation should take place on the meaning/ definition. This comment was recorded on a sheet that related to this specific rMCZ but would presumably apply to all rMCZs where this assumption about small vessels anchoring has been made. o No clear working group definition exists of what counts as a 'small' vessel - 24m was proposed some time ago by the RYA, but no decision was reached as to whether we would adopt that size in MCZ planning.
Passage of ships will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o There are small port and harbour facilities in the area, and a wider concern has been raised about whether they would be impacted by an MCZ designation.
Seaweed harvesting will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Table II.3.38g VA Snapshot table: This table records the point which the vulnerability assessment discussions had reached regarding site management, at the time of the final Joint Working Group meeting in May 2011. The outcome is not definitive, and the VA did not carry out an exhaustive review of all the working assumptions recorded in the longer table above. The Steering Group were not directly involved in the VA discussions, and at their final meeting, expressed considerable reservations about the VA outcome (see section II.2.1). The reason this VA snapshot table is included here is so that readers have a record of what the VA snapshot was showing at the time the final stakeholder comments were recorded for this site. For a full explanation of the VA snapshot, please refer to part I. The maps in appendix 13 show a visual representation of the information in all the VA snapshot tables in the rMCZ site reports.

Sector	**Potential Management**
Commercial Fishing	Management - Removal of *palinurus elephas* (crawfish) not permitted Measures - Option 1: Voluntary - Option 2: Byelaw
Disposal at Sea	Management: - Impacts on the rMCZ conservation objectives would need to be considered in any licence application for disposal of material at the Padstow disposal site. It is not yet known whether additional mitigation is likely to be required in order to dispose of material at the site Measure : - Marine Licence
Tourism & Leisure	Management - Education and awareness of conduct for encounters with harbour porpoise and other cetaceans in the rMCZ Measure - Voluntary code of conduct - Voluntary 'Wise accreditation'
Navigational Dredging	Management: - Impacts on the rMCZ conservation objectives would need to be considered in any licence application or by the Harbour Authority. It is expected that disposal of material at the site would be permitted with no additional mitigation likely to be required as a result of the rMCZ Measure : - Marine Licence or Harbour Acts and Orders

Stakeholder narrative: Uncertainties and Additional Comments

Uncertainties

The most significant uncertainty faced by the project was the lack of knowledge on management of MCZs, and this uncertainty still applies to all rMCZs in the network. There was uncertainty over what activities will be affected by MCZ designations: what activities will be permitted to continue within (or near) MCZs, what activities will not be permitted, and what activities will require mitigation or some form of restriction other than a complete ban. There was also uncertainty over what measures will be taken to ensure any activity restrictions are put in place (e.g. byelaws, voluntary measures).

The following additional uncertainty was recorded for this site:

- No working assumptions have been recorded with respect to hard engineering structures e.g. slipways. A Steering Group representative was concerned that they should be permitted, and pointed out that there is an RNLI slipway at Trevose Head in the area of this rMCZ.

Additional comments

The following is a set of additional comments made by stakeholder representatives over the course of the planning work. Some of these comments were made specifically about this site, others were more generic comments which the project team consider to be relevant to this site.

- *Mobile bottom gear*
    - Seasonal closures are an inappropriate measure for benthic conservation.
    - The local group proposed an extension to this site which was not agreed because the fishing industry stated there were significant trawls that occur in this area. It was requested that it be noted that this was a high area of biodiversity and there would have been extra ecological value had this extension been added (see the report from the fifth JWG meeting).

- *Ports*
    - Possible restriction on laying/moving moorings.
    - Restrictions on anchoring.
    - Possible restriction of construction works.
    - Possible restrictions on aquaculture operations.
    - Possible economic effects for the harbour, boat repair and construction businesses if boat moorings impacted.
    - Safety concerns for commercial fishing vessels seeking refuge from storms.
    - Loss of income from tourism, recreational sector and commercial fishing.
    - The Camel Estuary has not been included in the rMCZ due to concerns raised by fishermen and the ports and harbours sector over whether MCZ status would affect dredging by Padstow harbour. There is a separate rMCZ in the upper reaches of the Camel, but this does not include the areas most heavily used, or the area of the Doom Bar which needs dredging regularly in order to keep access open to Padstow harbour.

- *Anchoring and aggregates*
    - This rMCZ was realigned to take account of anchoring and aggregate export.

- *Netting and longlining*
    - When the detailed assumptions were drafted for rMCZs in the network during the third planning iteration, all sites with 'water column protection' had an assumption that 'netting and longlining will not be allowed'. This applied to all sites considered for the protection of seabirds, cetaceans, or any of the three mobile FOCI listed in the ENG – smelt, undulate ray and European eel. Longlining does not occur in inshore sites in the region, and feedback from stakeholders was that the longlining assumption is not appropriate for any site. For sites that still have draft conservation objectives for seabirds or cetaceans in the final recommendations, the netting / longlining assumption has been superseded by the fact that the stakeholder group agreed on a different set of assumptions for these features (largely around the need for monitoring, and some possible voluntary codes of conduct, but no fishing restrictions). However, for sites that have draft conservation objectives for mobile FOCI, an uncertainty remains with respect to netting, where it may have an impact on nursery habitats or juvenile FOCI. This particular rMCZ was added to the network in the final planning stages, after the detailed work on developing assumptions had already happened, but given that the site has a draft conservation objective for *Anguilla anguilla*, European eel, the uncertainty around netting applies.

- *Environment Agency*
    - The Environment Agency provided evidence/data to demonstrate the important fish nursery area function of the Camel estuary and their supporting FOCI habitats of mudflats and saltmarsh which currently have limited protection. They suggested re-consideration of the inclusion of the estuary based this evidence, and look at solutions to concerns (mainly to do with dredging of the Doom Bar to enable shipping access to Padstow harbour), rather than the solution being exclusion. This input led to the inclusion of the upper Camel estuary as a separate rMCZ.

- *Seabirds and cetaceans*
    - Codes of practice may be a better way to achieve management of leisure boats (if necessary) than byelaws.
    - The resident pod of bottlenose dolphins has shown a significant decline in numbers over the last 20 years. There is the potential for boat strike from pleasure craft which is a cause for concern. Monitoring of numbers and activities and impacts on these species, dissemination of codes of conduct for encounters, encouraging boat operators to become WiSE accredited and a 3 year review of baseline numbers (estimated from ERCCIS sightings data) would all help to maintain healthy populations of these mobile species. Healthy populations of harbour porpoises and basking sharks would suggest a healthy ecosystem within the site and would be an attraction for the general public and ecotourism. Mitigation measures would be required if there was a decline in species numbers due to activities within the rMCZ (e.g. disturbance from pleasure craft, boat strike, bycatch from fishing activity)
    - The conservation sector has proposed that, for the protection of summer foraging birds, monitoring of disturbance and any by-catch issues and annual productivity monitoring would be necessary to determine that no deterioration in/loss of conservation status of the species making up the assemblage using the site (Fulmar, Razorbill, Guillemot, Puffin, Kittiwake) due to death, injury or disturbance. Mitigation measures would be required if there was a decline in species numbers due to activities within the rMCZ (e.g. disturbance from recreational disturbance, bycatch from fishing activity, built developments, pollution). Healthy populations of

these species would suggest a healthy ecosystem within the site and would be an attraction for the general public and ecotourism.

- Local Group feedback suggested either a 1 or 2 km extension around the current SSSI at Pentire Point, in order to protect the areas of sea used by seabird colonies, and wintering divers (red throated divers). Another Local Group suggestion was to include the Moul's, Gulland Rock and Newland Rock seabird colonies (present April-July). Currently, the boundary of the zone that includes seabird protection encompasses The Mouls island, but not Newlands (which lies just beyond the rMCZ boundary), nor Gulland Rock (which is located further in the estuary, currently not part of the rMCZ).

- *General benefits of MCZs*
  - Some stakeholder representatives would like the following recorded and for these to be considered during the impact assessment:
    - Fisheries spill-over.
    - Improvements for the local economy.
    - Education opportunities.
    - Benefits to science.
    - Focus for voluntary groups.
    - Potential increase in the amount and quality of recreational activities (diving, sea angling, environmental tourism, etc).
    - The designation as an MCZ will be a selling point and will undoubtedly be used as an identifier to the area to highlight it as somewhere to visit.

- *Monitoring*
  - There are two main types of monitoring which will need to take place within rMCZs:
    - Monitoring the activities within a site and the various levels at which they are occurring.
    - Monitoring the ENG features for changes in condition.

- *Reaction to the vulnerability assessment process and outcomes*
  - At the sixth Joint Working Group meeting in June 2011, the results from the regional vulnerability assessment (VA) discussions were presented to the group, as shown in table II.3.38g (the VA process is described in part I). This generated concern within the JWG, for two reasons. Firstly, several members of the group had serious misgivings over the outcome of the management discussions, especially with respect to those inshore rMCZs (including this one) for which no management of bottom-towed mobile fishing gear was highlighted as necessary. Secondly, the group had serious misgivings about the process itself, from which they felt disenfranchised.
  - The Steering Group made a statement at their final meeting, articulating those concerns in more detail. They recommended that there should be a process that allows them to review potential management measures for MCZs, before public consultation. The full statement made by the Steering Group is in section II.2.1.

Levels of support

The network report (section II.2) includes a project team reflection on levels of support for the network recommendations as a whole, and the site specific reflection presented here should be read within the wider network context.

The Crown Estate indicated that this rMCZ is in an area with waste water outfalls, coastal protection works and small port/harbour facilities, and highlighted the disposal site that overlaps this rMCZ. They are supportive with the assumption that MCZ designation would not restrict ongoing activities described.

Padstow harbour authority have concerns over the fact that the site overlaps with a disposal area in the north, and are concerned that his might affect future renewal of the licence to use the disposal area. Despite this concern, they are more supportive of the final rMCZ than they were of a precursor site which included the Camel estuary and the Doom Bar, where regular dredging takes place which is vital to enable access to the port of Padstow.

Supporting documentation

GIS data used for reporting the quantitative habitat and species figures in the tables above includes the following sources: UKSeaMap modelled broad-scale habitat data, Cornwall Wildlife Trust, MB102, and Environment Agency intertidal habitat data. Refer to appendix 8 for details, and to the tables above for data sources for specific features in this site.

Further evidence underpinning the site can be found in the publications and datasets referred to in the detailed site description. Information and data on seabirds from the area of the rMCZ can be obtained from the RSPB.

Site map series

On the following pages there are three maps of this site.

- The first map (FR_052a) is the main site map showing the rMCZ boundary and includes points with coordinates (in WGS84 UTM30N). The map also shows charted depth and existing Marine Protected Areas for reference. Please note: the lat/long coordinates of the vertices in the following maps have been calculated in decimal degrees, and in degrees, minutes and seconds. For plotting on a standard Admiralty (UKHO) chart, the seconds of each coordinate need to be converted to decimal. An MS Excel table showing all coordinates in degrees, minutes and decimal seconds has been provided in the additional materials section (see Appendix 14) for plotting purposes.
- The second map (FR_052b) shows the rMCZ boundary over broad-scale habitats, and records of habitat and species FOCI. The data shown on this map corresponds with the information in tables II.3.38b, II.3.38c and II.3.38e, data sources are indicated in the tables.
- The third map (FR_052c) shows socio-economic datasets. For spatial data showing the distribution of fishing effort, please refer to the interactive PDF maps supplied with the additional materials (see appendix 14).
- Because of the large number of features shown on the site maps (especially inshore biophysical maps), it has not been possible to embed comprehensive legends within the site maps themselves. A comprehensive map legend is therefore provided in appendix 7, which explains the symbology used on all the maps within this final report.
- Appendix 8 describes the data sources for the information shown on the final report maps in detail.

Map: FR_052a

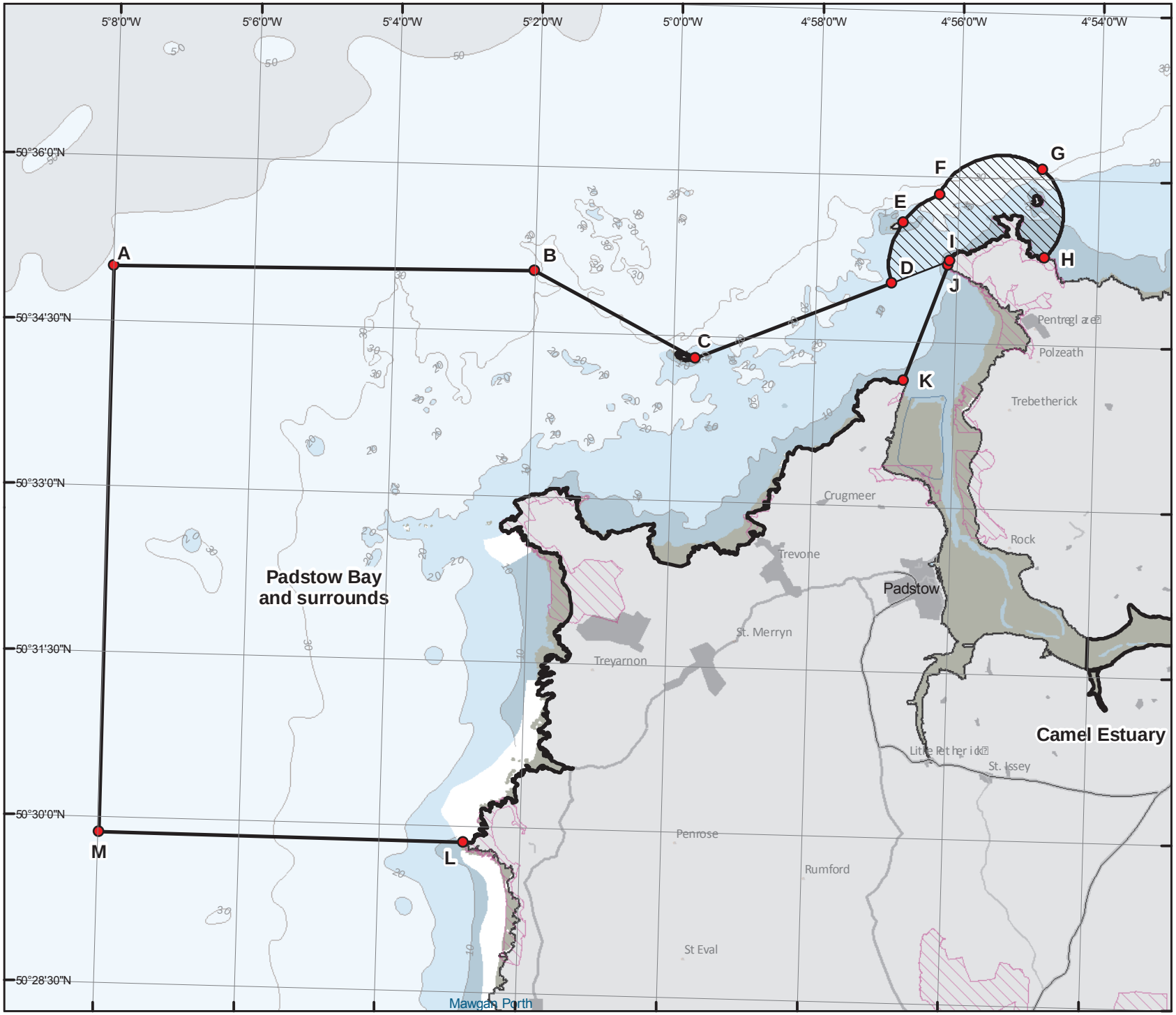
Version:26Aug11

Padstow Bay and Surrounds rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 1 2 4 km N

FINDING SANCTUARY



Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.5833	-5.1333	50° 34' 59" N	5° 7' 59" W
B	50.5843	-5.0335	50° 35' 3" N	5° 2' 0" W
C	50.5717	-4.9948	50° 34' 18" N	4° 59' 41" W
D	50.5838	-4.9486	50° 35' 1" N	4° 56' 55" W
E	50.5930	-4.9463	50° 35' 34" N	4° 56' 46" W
F	50.5974	-4.9378	50° 35' 50" N	4° 56' 16" W
G	50.6016	-4.9135	50° 36' 5" N	4° 54' 48" W
H	50.5882	-4.9125	50° 35' 17" N	4° 54' 45" W
I	50.5874	-4.9350	50° 35' 14" N	4° 56' 6" W
J	50.5867	-4.9354	50° 35' 12" N	4° 56' 7" W
K	50.5692	-4.9453	50° 34' 9" N	4° 56' 42" W
L	50.4977	-5.0467	50° 29' 51" N	5° 2' 48" W
M	50.4977	-5.1330	50° 29' 51" N	5° 7' 58" W

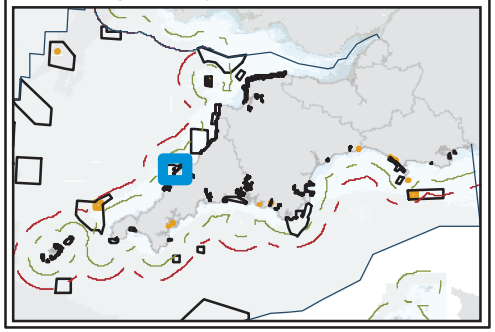
Map Legend

- Recommended MCZ (rMCZ)
- Zone within a rMCZ
- Named Sea Feature (The Doom Bar)

Existing MPAs

- SSSI (not part of MPA network)

A comprehensive legend is provided in the appendices of the Finding Sanctuary final report.



Map: FR_052b

Version:30Aug11

Padstow Bay and Surrounds rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with biophysical information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 1 2 4 km

N

FINDING SANCTUARY

5°10'0"W 5°7'30"W 5°5'0"W 5°2'30"W 5°0'0"W 4°57'30"W 4°55'0"W 4°52'30"W

50°36'0"N 50°34'30"N 50°33'0"N 50°31'30"N 50°30'0"N 50°28'30"N

Padstow Bay and surrounds

Pentreglaze

Polzeath

Trelights

Trebetherick

St Minver

Crugmeer

Rock

Trevone

Padstow

St. Merryn

Treyarnon

Little Petherick

St Issey

Penrose

Rumford

St Eval

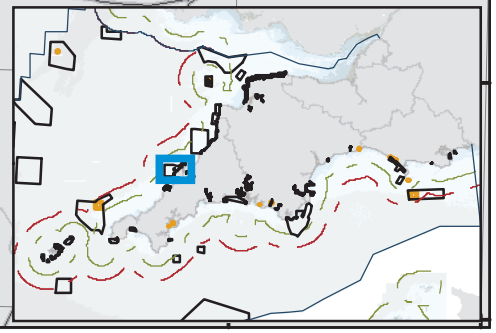
Trenance

Map Legend

Recommended MCZ (rMCZ)

Zone within a rMCZ

These maps contain data from the following sources: Defra contracts MB102/MB106, the JNCC and Natural England, the Environment Agency, Wildlife NGOs and local records centres. Full details and a comprehensive legend are provided in the appendices of the Finding Sanctuary final report.



Map: FR_052c

Version:5Sep11

Padstow Bay and Surrounds rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with socio-economic information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 1 2 4 km

N

FINDING SANCTUARY

5°10'0"W 5°8'0"W 5°6'0"W 5°4'0"W 5°2'0"W 5°0'0"W 4°58'0"W 4°56'0"W 4°54'0"W 4°52'0"W 4°50'0"W

50°36'0"N 50°34'30"N 50°33'0"N 50°31'30"N 50°30'0"N 50°28'30"N

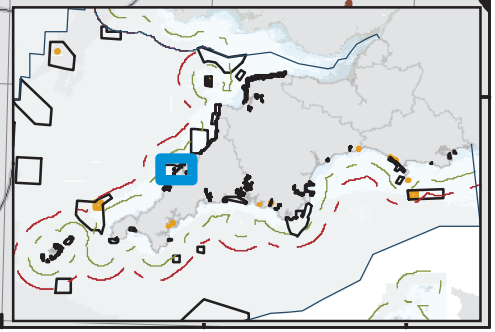
Padstow Bay and surrounds

Pentreglaze Polzeath Trelights Port Isaac St Endellion Trebetherick Crugmeer Trevone Rock Padstow St. Merryn Treyarnon Little Petherick St. Issey Penrose Rumford St Eval Trenance

Map Legend

- Recommended MCZ (rMCZ)
- Zone within a rMCZ
- Fixed net restrictions
- Open disposal site
- Harbour administration region
- Anchorages, berths & docks
- Anchorage
- Marina
- Consented discharge
- Charted wrecks
- Flood or coastal defence structure

This map series contains data from a variety of sources including the UKHO, the Environment Agency, and The Crown Estate. A full list and a comprehensive legend can be found in the appendices of the Finding Sanctuary final report.



II.3.39 Camel Estuary rMCZ

Basic site information

***Site centre location (datum used: ETRS89)*:**

Decimal Degrees		Degrees Minutes Seconds	
Lat	**Long**	**Lat**	**Long**
50.5294	-4.8698	50° 31' 45'' N	4° 52' 11'' W

Due to the shape of this site the centroid falls outside the rMCZ boundary.
***Site surface area*:** 2.2 km^2 (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea
OSPAR region: Region III: Celtic Waters

Site boundary: The site encompasses the upper reaches of the Camel Estuary, following the OS Boundary Line mean high water mark inland as far as the normal tidal limit near Polbrock Bridge, over 3km upstream of Wadebridge. The lower boundary of the site is a straight line across the estuary from the western shore of Pinkson Creek (a small tributary to the Camel, located just over 2.5km upstream of Padstow), to Cant Hill on the opposite shore of the Camel.

Sites to which the site is related: The upstream portion of this rMCZ overlaps with the River Camel Valley and Tributaries SSSI. Amble Marshes SSSI is located adjacent to the rMCZ.

Maps of the site are included at the end of this site report. The main site map shows points with coordinates along the site boundary (in WGS84 UTM30N).

Features proposed for designation within Camel Estuary rMCZ

Table II.3.39a Draft conservation objectives for the Camel Estuary rMCZ. M = maintain in favourable condition, R = recover to favourable condition. This is an extract of the conservation objective summary tables in section II.2.6. ***The full text of the draft conservation objectives can be found in appendix 15****.*

Broad-scale habitats	Coastal saltmarshes and saline reedbeds		**M**
	Intertidal coarse sediment		**M**
	Intertidal mud		**? M / R [1]**
	Low energy intertidal rock		**M**
Habitat FOCI	Estuarine rocky habitats		**M**
Species FOCI	*Anguilla anguilla*	European eel	**? M / R [2]**

[1]At the time of the vulnerability assessment meetings, no decision was taken whether the conservation objective for this feature should be 'maintain' or 'recover'. Since then, advice from regional Natural England advisers has been to assume a 'maintain' objective.
[2]At the time of the vulnerability assessment meetings, no decision was taken whether the conservation objective for this feature should be 'maintain' or 'recover'. No quantitative information is included for the mobile FOCI species *A. anguilla* in the tables below, as the GIS data available was too coarse resolution to be meaningful. However, the species has been included in the draft conservation objectives on the basis of evidence provided to the project by the Environment Agency (see appendix 8).

The following tables show ENG-related statistics for this site, reported from spatial data available in Finding Sanctuary's GIS datasets. Greyed out rows indicate features for which GIS data exists within the site boundary, but which have not been included on the list of draft conservation objectives (the reasons are stated in table footnotes).

Table II.3.39b ***Intertidal broad-scale habitats*** *recorded in this rMCZ, based on an analysis of Finding Sanctuary's EUNIS level 3 broad-scale habitat GIS data (see appendix 8). Data sources: 2 - MESH, 3 - Environment Agency, 4 – MB102.*

Habitat	Area covered within rMCZ (km^2)	% of total in study area	Source(s)
Low energy intertidal rock	<0.01	0.3%	4, 2
Intertidal coarse sediments	0.04	0.2%	3
Intertidal mud	1.77	1.0%	4, 3
Coastal saltmarshes and saline reedbeds	0.15	4.8%	3

Table II.3.39c ***FOCI habitats*** *recorded in this rMCZ, based on an analysis of Finding Sanctuary's amalgamated GIS FOCI datasets (see appendix 8). Data sources: 1 - MB102; 2 - JNCC/ MESH Canyons survey data; 3 - ERCCIS/Isles of Scilly Wildlife Trust; 4 - DORIS.*

Habitat	Area covered (km^2)	Number of point records (total)	Number of point records (pre-1980)	Source(s)
Estuarine rocky habitats		2		1

For additional understanding on how this site is located in relation to environmental data layers, including areas of high benthic biodiversity, offshore bird aggregation areas, or areas of seasonal sea surface temperature fronts, please refer to the interactive PDF maps presented alongside this report.

Site summary

The Camel estuary is the largest and most sheltered marine inlet on the north Cornwall coast (Buck, 1993; Davies 1998). It is predominantly shallow and sandy, deepening at the mouth, with a narrow channel at low water that meanders from one side of the estuary to the other. Water quality has been classified as grade A (Buck, 1993). One of the reasons for the inclusion of this and other estuarine rMCZs in the network was in recognition of the added ecological importance of estuaries in terms of productivity, and their ecological function as nursery areas.

Detailed site description

The Camel has a large range of estuarine communities, e.g. a variable salinity rock community, with considerable local nature conservation importance (Davies, 1998). It is an AONB and there are five SSSIs and a bird sanctuary within the estuary (Davies, 1998). Much of the literature reviewed here describes the estuary as a whole, including the lower estuary, which are not within the rMCZ boundary. Some of the description of the areas at the mouth of the estuary may be relevant to the Padstow Bay and surrounds rMCZ, which includes the area outside the mouth of the estuary.

At Trebetherick (beyond the rMCZ boundary), there is an extensive area of rocky intertidal shore with mussel beds. At low water, a large area of the estuary is extensive intertidal flats. The outer flats are sandy and very mobile, and the innermost flats are muddy and more sheltered, but subject

to tidal scour. Small patches of saltmarsh occur in the small bays and inlets, and are more extensive in the upper parts (Buck, 1993). Burd (1989) also surveyed the Camel during the Saltmarsh survey of Great Britain.

At the entrance to the estuary (not part of the rMCZ), there are moderately exposed rocky shores with extensive rockpools on the low shore on the eastern side of the estuary. Extremely sheltered bedrock and boulder shores are dominated by the fucoid *Ascophyllum nodosum*. Such sheltered communities are rarely encountered within the marine inlets of north Cornwall and north Devon (Davies, 1991). Predominantly sandy sediments have rich populations of polychaetes and there are dense beds of the edible cockle *Cerastoderma edule*. Muddier sediments are also dominated by polychaete worms (ragworm most abundant). Bivalve *Schrobicularia plana* and oligochaete worms are locally abundant (Davies, 1991).

Gill & Mercer (1989) surveyed substratum types, tidal streams, intertidal habitats and communities in the Camel. Sublittoral rock habitats at the mouth were subject to strong tidal streams. Dense growths of sponges, sea squirts, hydroids and anemones were found on steep bedrock and on gully walls. Notable species recorded included the small sea squirt *Pycnoclavella aurilucens* which nears its northern limit within the estuary, and four species of the nationally important genus of red algae *Pterosiphonia* (Gill & Mercer, 1989).

Pirrie *et al*. (2000a) examined the mineralogy and geochemistry of the inter-tidal sediments in the Camel and Gannel estuaries. Reynolds *et al*. (2003) sampled the low water pools in the upper estuary *Spartina* marsh and high water at Trewornan Dam and creek for Bass.

Smith (1981) sampled populations of *Littorina saxatilis* at some 30 coastal and offshore stations, most of them in Cornwall (including the Isles of Scilly), and at 35 stations along the banks of the estuaries of the Rivers Camel, Tamar and Fal. The authors described the Camel as 'open at its entrance to a long Atlantic wave-fetch for some 5 km along its eastern bank, a very exposed estuary flanked by cliffs and intertidal reefs of predominantly blue-black slates which alternate with extensive embayments of mobile, wind-blown sand'.

During 2007-2008, the Environment Agency conducted Sea Area Saltmarsh Surveys in the Camel area. Bryan & Hummerstone (1978; 1978b) collected *Scrobicularia* of different sizes and samples of surface sediment from the intertidal zone at low tide. Luoma & Bryan (1978) also collected sediment samples from the oxidized surface layer of intertidal sediments.

There is only anecdotal evidence to support Seahorses in the outer reaches of the estuary and it is more than likely to be Short Snouted Seahorses (Neil Garrick-Maidment, *pers. comm*).

Stakeholder narrative: Assumptions and Implications

As explained in part I, the stakeholder narrative is a vital underpinning of the site recommendations. Working assumptions and implications are presented here, and additional comments are presented in the following section.

The following fundamental assumption was recorded to apply to all activities in all sites: **The fundamental assumption about human activities within MCZs is that activities can continue (under current licensing regimes where applicable), as long as they do not prevent the conservation objectives from being achieved.** This assumption applies to all activities.

Table II.3.39d shows more specific working assumptions and implications that were recorded for this site over the course of the planning process. This site was a relatively late addition to the network (it was added after the third progress report). Most of the detailed work on recording assumptions and implications for the sites within the developing network configuration had already taken place before this site was added. Therefore, some of the content of table II.3.39d is based on what had previously been recorded for other sites in the network, based on assumptions that were implicit in the discussions over whether the site should be added to the network or not. Many of the assumptions and implications highlighted for this site are generic, and will apply to other rMCZs in the network as well. Site-specific comments from the later planning meetings (when the site was within the network) have also been added to the table.

Following that, table II.3.39e shows the vulnerability assessment (VA) snapshot for this site. The VA meetings took place at the end of the project, and they did not involve the Steering Group. They started to discuss site management, but did not reach any firm conclusions. The VA snapshot table reflects the point that the VA discussions had reached at the time of the last Joint Working Group meeting in May 2011. Many Steering Group members expressed concerns about the VA process and its outcomes (see section II.2.1 for full details).

Table II.3.39d Specific assumptions and implications relating to Camel Estuary rMCZ. Black text reflects the working assumptions and implications recorded throughout the planning discussions. The development of the narrative recorded in black can be traced back through the Working Group and Steering Group meeting reports from 2009 to 2011. Red and green text in the first column comments on how the snapshot of the vulnerability assessment (VA) relates to each of the working assumptions that had been made as planning took place (refer to part I for a full explanation of the VA snapshot).

Activities assumed to not be allowed within the site	
Assumptions	**Implications**
Aggregate extraction will not be allowed Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o Aggregate dredging can only occur where the mineral resources are geologically located – in highly localised and discrete areas. If aggregate operations are not allowed in MCZs (subject to appropriate monitoring, mitigation and management), and MCZs coincide with aggregate resource, then this will have significant impact on national construction aggregate supply and coast defence. **Given this assumption, there are still the following concerns:** o If aggregate operations (subject to appropriate monitoring, mitigation and management) are restricted in areas adjacent to an MCZ, then this will have significant impact on national construction aggregate supply and coast defence.
Bottom-towed fishing gear will not be allowed (includes benthic trawling and hydraulic dredging) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not	**Direct implications:** o Loss of ground for bottom-towed gear fishermen *(may not be relevant in this area.)* o Displacement of bottom-towed gear o Increased competition for fishing grounds o Reduced diversity and flexibility of fishing o Cumulative impact on bottom-towed gear fleet where

considered during the VA meetings	protected areas are close together o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers. (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) o Potential safety implications derived from displacement from sheltered areas. o Potential environmental implications derived from concentrating effort in alternative grounds or due to new fishing ground searching activity.
Anchoring of large vessels will not be allowed (except in emergencies) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Netting and longlining will not be allowed *This assumption was recorded early on in the process, in order to protect nursery habitats and juveniles in all sites with draft conservation objectives for mobile FOCI. Stakeholder feedback has indicated that the assumption about longlining is inappropriate, as the activity does not happen inshore. An uncertainty remains around netting, where the activity may have an impact on nursery habitat - this uncertainty was not resolved through the VA* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not	**Direct implications:** o Loss of ground for netters o Displacement of netters o Increased competition for fishing grounds o Reduced diversity and flexibility of fishing o Cumulative impact on netters where protected areas are close together **Given this assumption, there are still the following concerns:** o SAFFA fixed net restrictions apply.

considered during the VA meetings.	

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	**Implications**
Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) **Given this assumption, there are still the following concerns:** o Static gear fishermen might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed
The installation, operation and maintenance of renewable energy devices will be permitted *Based on SAP feedback the assumption cannot apply to all sites in the network, although it can apply to any given site on its own.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: - additional costs to the renewables industry, e.g. for licensing mitigation and monitoring - delays to renewables development - delays, lost revenue and additional costs associated with cable repair activity restrictions o Costs and delays associated with co-location of renewables in MCZs, could result in long term implications in terms of renewables deployment which could have serious implications for industry and Government in terms of loss of operational revenue and missing EU climate change targets. o Enforced co-location with MCZs would dramatically restrict deployment. **If the assumption turns out to be wrong:** o If co-location assumptions are not correct the impacts would/could be: site locations that can't be developed, increased costs (the implications could be re-routing of cables around a feature could cost an additional £600,000 - £1.3m/km depending on cable type, size and seabed geology), construction delays, failure to meet renewables targets, impacts on acidification, additional monitoring requirements, increased uncertainty and declining investor

	confidence in renewables activities. o Increased competition for sea space with other sea users. o Tidal range potential has historically been identified.
Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Aquaculture of fin fish and shell fish will be permitted with mitigation / management Following VA meetings, a potential need for managing aquaculture activities in this site has been identified.	**Direct implications:** o
Crab tiling / bait digging will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o A steering group member stated that this activity does take place within this site. o The Duchy of Cornwall have highlighted that there is a licence for crab tiles in the estuary, and that this activity would in all likelyhood continue even if the license was revoked.
Beach replenishment will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Shoreline management Policy for this area is hold the line at various locations within the estuary. o A Steering Group member commented on the importance of taking into account shoreline management plan policies and planned activities.

Activities assumed to be allowed to continue / occur within the site	
Assumptions	**Implications**
Handlining (recreational angling and commercial handlining) will be permitted Handlining includes sea angling and trolling. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed **Benefits:** o Potential for increased and enhanced leisure and recreational activity
Pelagic trawls will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
The installation and maintenance of cables will be permitted and will not be made prohibitively expensive within the site. This applies to power cables (including cables for renewable energy devices), and telecommunications cables. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption there are still the following concerns:** o Cable installation cost increases and delay o Cable repair cost, delays and lost revenue could increase due to activity restrictions on cable repair. o There is no definition of what 'prohibitively expensive' means; the cables representative would like assurance that no additional cost will result from MCZ designation (beyond costs associated with existing management and mitigation requirements). **If the assumption turns out to be wrong:** o For renewables/power cables, re-routing of cables around a feature or site might mean longer cable routes, at a cost of £600,000 - £1.3 million/km depending on cable type, size and seabed geology. o There may be other costs, e.g. costs associated with licensing, mitigation measures and monitoring requirements. o Increased licensing requirements and costs of cabling may have serious implications for industry and Government in terms of loss of operational revenue, missing EU climate change targets etc.

The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Tourism and recreational activities will be permitted. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Maintenance dredging in ports (to enable access to ports) will be permitted *The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o (No heritage wrecks currently present in the site)

Anchoring of small vessels will be permitted *There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o No clear working group definition exists of what counts as a 'small' vessel - 24m was proposed some time ago by the RYA, but no decision was reached as to whether we would adopt that size in MCZ planning.
Passage of ships will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Seaweed harvesting will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Table II.3.39e VA Snapshot table: This table records the point which the vulnerability assessment discussions had reached regarding site management, at the time of the final Joint Working Group meeting in May 2011. The outcome is not definitive, and the VA did not carry out an exhaustive review of all the working assumptions recorded in the longer table above. The Steering Group were not directly involved in the VA discussions, and at their final meeting, expressed considerable reservations about the VA outcome (see section II.2.1). The reason this VA snapshot table is included here is so that readers have a record of what the VA snapshot was showing at the time the final stakeholder comments were recorded for this site. For a full explanation of the VA snapshot, please refer to part I. The maps in appendix 13 show a visual representation of the information in all the VA snapshot tables in the rMCZ site reports.

Sector	Potential Management
Aquaculture	Management - Reduce risk of introduction of non-indigenous species from relaying of mussel seed. Most likely mechanism to achieve this to be determined. Measure - To be determined

Stakeholder narrative: Uncertainties and Additional Comments

Uncertainties

The most significant uncertainty faced by the project was the lack of knowledge on management of MCZs, and this uncertainty still applies to all rMCZs in the network. There was uncertainty over what activities will be affected by MCZ designations: what activities will be permitted to continue within (or near) MCZs, what activities will not be permitted, and what activities will require mitigation or some form of restriction other than a complete ban. There was also uncertainty over what measures will be taken to ensure any activity restrictions are put in place (e.g. byelaws, voluntary measures).

Additional comments

The following is a set of additional comments made by stakeholder representatives over the course of the planning work. Some of these comments were made specifically about this site, others were more generic comments which the project team consider to be relevant to this site.

- *Commercial fishing*
  - Commercial fishing raised concerns that estuaries are surplus to the requirement of the ENG.

- *Environment Agency*
  - Suggest using existing estuarine partnership agreements already in place as basis for protection measures.
  - The Environment Agency has provided detailed evidence/data to demonstrate the important fish nursery area function of the Camel estuary and their supporting FOCI habitats of mudflats and saltmarsh which currently have limited protection.

- *The Wildlife Trusts*
  - Excluding lower estuary areas from MCZ limits ecological value.

- *Aggregate and maintenance dredging*
  - It was highlighted that there is unmonitored maintenance dredging within the sand of the estuary, which is then sold. It was noted that if sand and muddy sands is the feature to be protected then an rMCZ in the estuary would definitely affect these activities.
  - Padstow Harbour needs a navigational channel.
  - The port authorities requested that sediment dredging can continue in the mouth of the estuary if this becomes a rMCZ.
  - The proposal for this rMCZ was adopted assuming the channel for fast boats is maintained.

- *Netting and longlining*
  - When the detailed assumptions were drafted for rMCZs in the network during the third planning iteration, all sites with 'water column protection' had an assumption that 'netting and longlining will not be allowed'. This applied to all sites considered for the protection of seabirds, cetaceans, or any of the three mobile FOCI listed in the ENG – smelt, undulate ray and European eel. Longlining does not occur in inshore sites in the region, and feedback from stakeholders was that the longlining assumption is not appropriate for any site. For sites that still have draft conservation

objectives for seabirds or cetaceans in the final recommendations, the netting / longlining assumption has been superseded by the fact that the stakeholder group agreed on a different set of assumptions for these features (largely around the need for monitoring, and some possible voluntary codes of conduct, but no fishing restrictions). However, for sites that have draft conservation objectives for mobile FOCI, an uncertainty remains with respect to netting, where it may have an impact on nursery habitats or juvenile FOCI. This particular rMCZ was added to the network in the final planning stages, after the detailed work on developing assumptions had already happened, but given that the site has a draft conservation objective for *Anguilla anguilla,* European eel, the uncertainty around netting applies.

- *General benefits of MCZs*
    - Some stakeholder representatives would like the following recorded and for these to be considered during the impact assessment:
        - Fisheries spill-over.
        - Improvements for the local economy.
        - Education opportunities.
        - Benefits to science.
        - Focus for voluntary groups.
        - Potential increase in the amount and quality of recreational activities (diving, sea angling, environmental tourism, etc).
        - The designation as an MCZ will be a selling point and will undoubtedly be used as an identifier to the area to highlight it as somewhere to visit.

- *Monitoring*
    - There are two main types of monitoring which will need to take place within rMCZs:
        - Monitoring the activities within a site and the various levels at which they are occurring.
        - Monitoring the ENG features for changes in condition.

- *Reaction to the vulnerability assessment process and outcomes*
    - At the sixth Joint Working Group meeting in June 2011, the results from the regional vulnerability assessment (VA) discussions were presented to the group, as shown in table II.3.39e (the VA process is described in part I). This generated concern within the JWG, for two reasons. Firstly, several members of the group had serious misgivings over the outcome of the management discussions, especially with respect to those inshore rMCZs (including this one) for which no management of bottom-towed mobile fishing gear was highlighted as necessary. Secondly, the group had serious misgivings about the process itself, from which they felt disenfranchised.
    - The Steering Group made a statement at their final meeting, articulating those concerns in more detail. They recommended that there should be a process that allows them to review potential management measures for MCZs, before public consultation. The full statement made by the Steering Group is in section II.2.1.

Levels of support

The network report (section II.2) includes a project team reflection on levels of support for the network recommendations as a whole, and the site specific reflection presented here should be read within the wider network context.

Padstow harbour authority are concerned about ensuring that the high speed channel into Wadebridge can remain open. Because of the length of the estuary, and the fact that boats can only navigate to and from Wadebridge on a high tide, any speed restrictions would hamper boat access. They have been assured by Natural England that this will not be affected.

Supporting documentation

GIS data used for reporting the quantitative habitat and species figures in the tables above includes the following sources: MESH, MB102, and Environment Agency intertidal habitat data. Refer to appendix 8 for details, and to the tables above for data sources for specific features in this site.

Further evidence underpinning the site can be found in the publications and datasets referred to in the detailed site description.

Site map series

On the following pages there are two maps of this site.

- The first map (FR_053a) is the main site map showing the rMCZ boundary and includes points with coordinates (in WGS84 UTM30N). The map also shows charted depth and existing Marine Protected Areas for reference. Please note: the lat/long coordinates of the vertices in the following maps have been calculated in decimal degrees, and in degrees, minutes and seconds. For plotting on a standard Admiralty (UKHO) chart, the seconds of each coordinate need to be converted to decimal. An MS Excel table showing all coordinates in degrees, minutes and decimal seconds has been provided in the additional materials section (see Appendix 14) for plotting purposes.
- The second map (FR_053b) shows the rMCZ boundary over broad-scale habitats, and records of habitat and species FOCI. The data shown on this map corresponds with the information in tables II.3.39b and II.3.39c, data sources are indicated in the tables.
- Most rMCZ site reports contain a map showing socio-economic datasets. This one does not, as there is limited human activity mapped in the site.
- Because of the large number of features shown on the site maps (especially inshore biophysical maps), it has not been possible to embed comprehensive legends within the site maps themselves. A comprehensive map legend is therefore provided in appendix 7, which explains the symbology used on all the maps within this final report.
- Appendix 8 describes the data sources for the information shown on the final report maps in detail.

Map: FR_053a

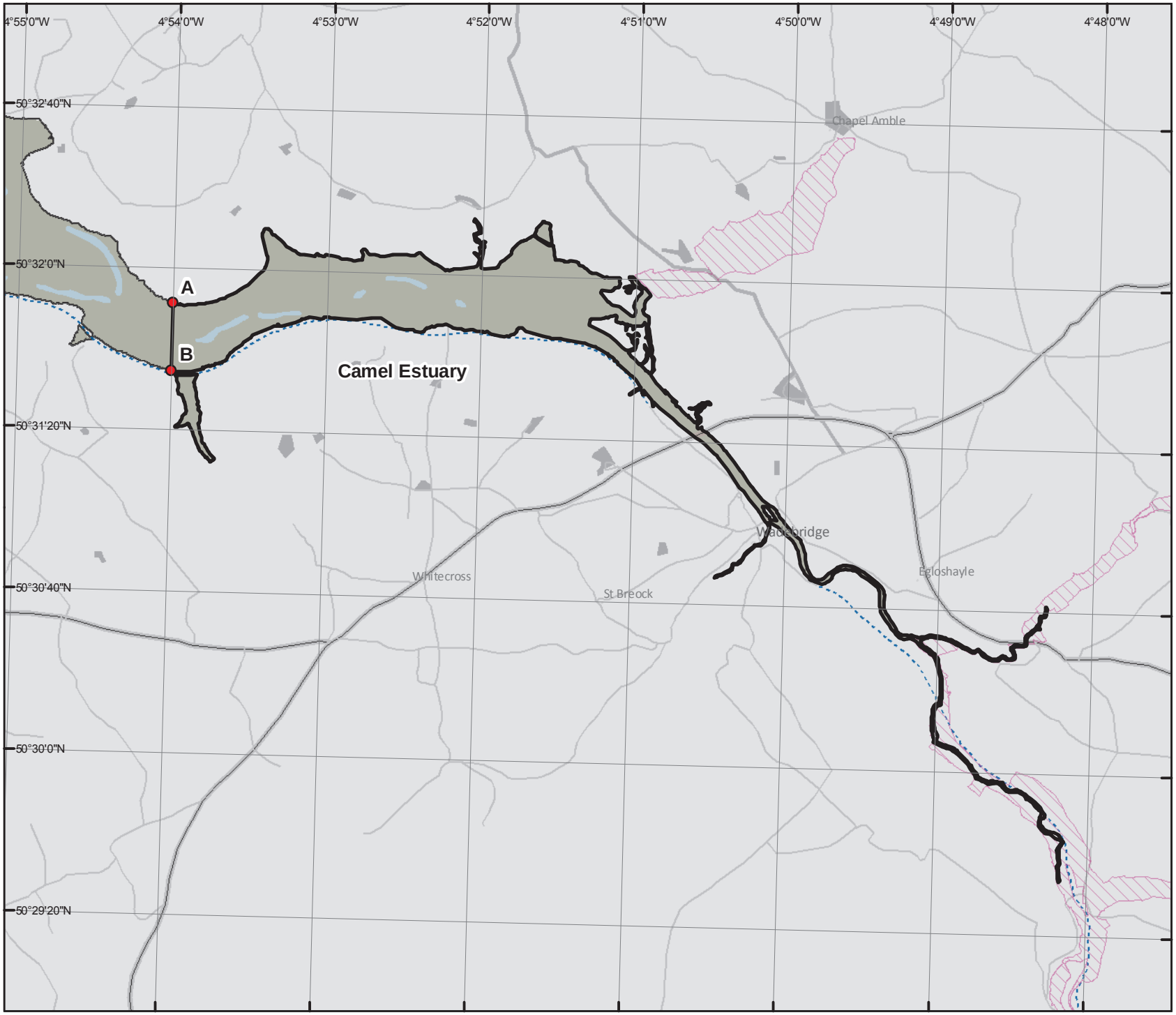
Version:26Aug11

Camel Estuary rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 0.5 1 2 km N

FINDING SANCTUARY



Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.5310	-4.9000	50° 31' 51" N	4° 54' 0" W
B	50.5263	-4.9000	50° 31' 34" N	4° 53' 59" W

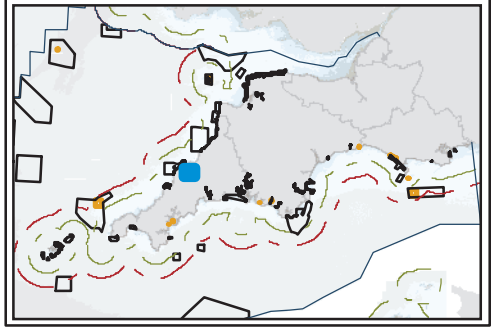
Map Legend

Recommended MCZ (rMCZ)

Existing MPAs

SSSI (not part of MPA network)

A comprehensive legend is provided in the appendices of the Finding Sanctuary final report.



Map: FR_053b

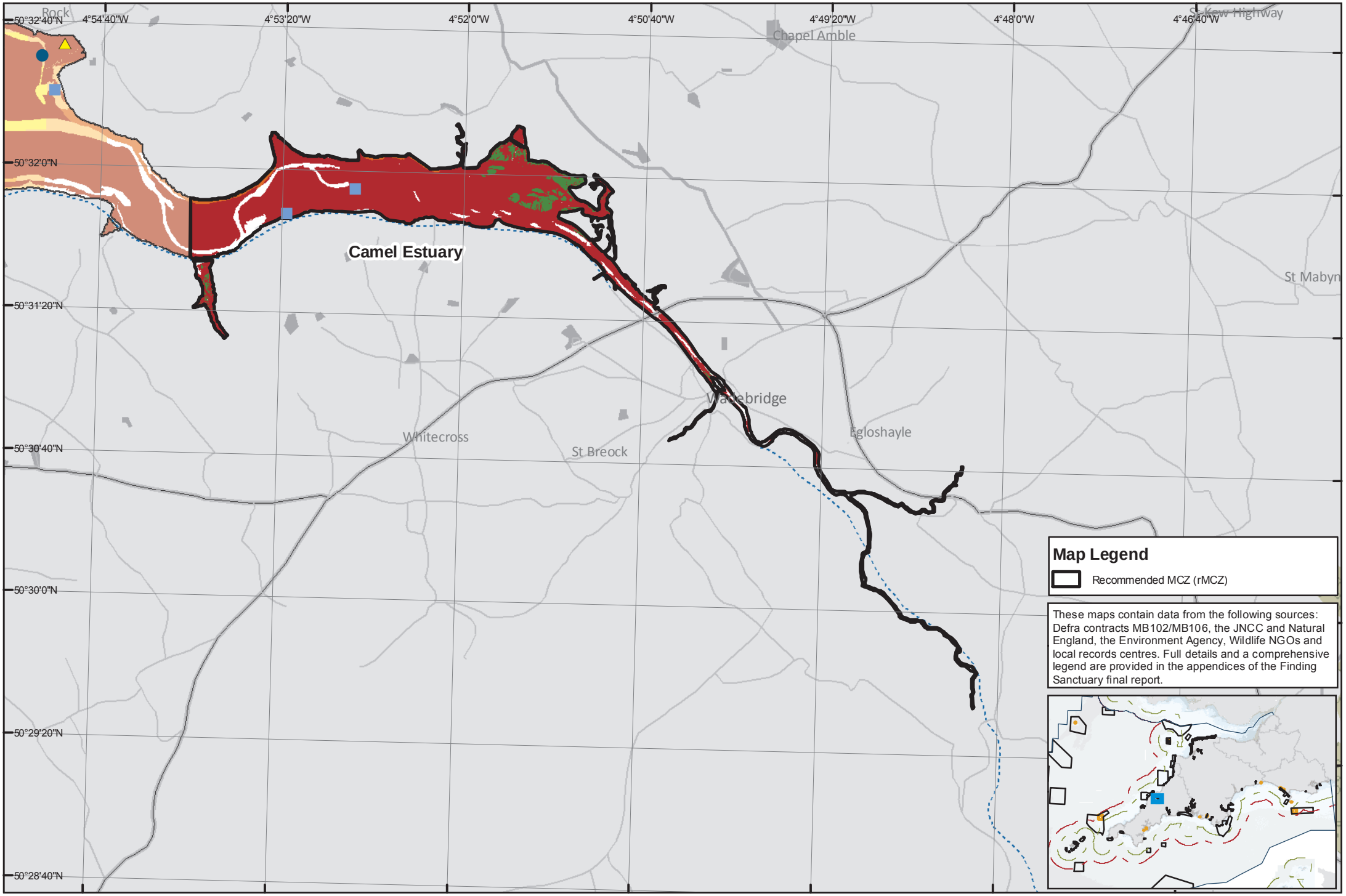
Version:30Aug11

Camel Estuary rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with biophysical information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 0.5 1 2 km N

FINDING SANCTUARY



Map Legend

Recommended MCZ (rMCZ)

These maps contain data from the following sources: Defra contracts MB102/MB106, the JNCC and Natural England, the Environment Agency, Wildlife NGOs and local records centres. Full details and a comprehensive legend are provided in the appendices of the Finding Sanctuary final report.

II.3.40 Hartland Point to Tintagel rMCZ

Basic site information

***Site centre location (datum used: ETRS89)*:**

Decimal Degrees		Degrees Minutes Seconds	
Lat	**Long**	**Lat**	**Long**
50.7965	-4.7094	50° 47' 47'' N	4° 42' 33'' W

***Site surface area*:** 303.8 km^2 (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea
OSPAR region: Region III: Celtic Waters

Site boundary: The site boundary follows the coastline along the OS Boundary Line mean high water mark from Tintagel Head to Hartland Point. The seaward boundary is made up of three distinct areas. The first is a rectangular area to the north of Tintagel Head, which intersects with the 6nm limit: From Tintagel, the seaward boundary extends in a rectangular shape, approximately 5.4 km west, 18.6km north, 13km east, and 11km south to just off Cambeak. The second is a relatively narrow stretch along the coast (of 500m to 1km in width) extending as far as Lower Sharpnose Point, north of Bude. The third section is a double rectangular shape to the west of Hartland Point. The first part extends about 3.5 km west off Lower Sharpnose Point and extends 8.5km north, and then the boundary runs eastwards to about 2.5km off South Hole (north of Welcombe). The second rectangular shape runs north and eastwards at Hartland Point. The double rectangular area that forms the northern part of the site is marked on site map FR_054a (at the end of this site report) as a distinct, but not spatially separate, zone. This area had been discussed within the Working Groups as an area where draft conservation objectives might be added for cetaceans, but ultimately, that did not happen.

Sites to which the site is related: Virtually the entire stretch of coastline along this rMCZ is designated as a SSSI, for the most part including the intertidal area and therefore intersecting with the rMCZ. The only coastal stretch not designated as a SSSI is between Bude and Widemouth. The SSSIs along this stretch of coast are: Tintagel Cliffs, Boscastle to Widemouth, Bude Coast, Duckpool to Furzey Cove, Steeple Point to Marsland Mouth, and Marsland to Clovelly Coast.

Maps of the site are included at the end of this site report. The main site map shows points with coordinates along the site boundary (in WGS84 UTM30N).

Features proposed for designation within Hartland Point to Tintagel rMCZ

Table II.3.40a Draft conservation objectives for the Hartland Point to Tintagel rMCZ. M = maintain in favourable condition, R = recover to favourable condition. This is an extract of the conservation objective summary tables in section II.2.6. ***The full text of the draft conservation objectives can be found in appendix 15****.*

Broad-scale habitats	Subtidal coarse sediment		**M**
	Subtidal sand		**M**
	High energy infralittoral rock		**M**

	Coastal saltmarshes and saline reedbeds[1]		**M**
	High energy intertidal rock		**M**
	Intertidal coarse sediment		**M**
	Intertidal mixed sediment		**M**
	Intertidal mud[2]		**M**
	Intertidal sand and muddy sand		**M**
	Moderate energy intertidal rock		**M**
Habitat FOCI	Fragile sponge & anthozoan communities on subtidal rocky habitats		**M**
	Sabellaria alveolata reefs[3]	Honeycomb worm reefs	**M**
Species FOCI	*Eunicella verrucosa*	Pink sea-fan	**? M / R (tbc)**
	Padina pavonica	Peacock's tail seaweed	**M**

[1] There is only a very small area of this habitat present within the site, at the river estuary at Bude.

[2] This is unlikely to be present along this stretch of wave exposed coastline. What is mapped as intertidal mud in this area is probably sand – there is a known problem in translating between habitat classification systems which has led to an overestimate of the intertidal mud area within the region (see appendix 8).

[3] There are no records in our dataset, but there is pers. comm. from the Steering Group science representative, a member of the SAP, and members of the MBA of recent records of this FOCI habitat at Duckpool near Bude, surveyed as part of the MarClim project.

The northern zone of this site was discussed within the Working Groups as an area where draft conservation objectives should be added for cetaceans. Local Group feedback indicates that breeding seabird colonies use the area between April and July, and suggested a standard 1km extension around seabird colonies to protect the areas used by the birds during this time period. However, when the Wildlife Trusts were tasked with providing specific suggestions for draft conservation objectives for non-ENG listed mobile species, they did not include any for this site, because upon reviewing evidence they had access to (survey work & sightings databases), the area contained fewer sightings than the other rMCZs that have draft conservation objectives for cetaceans.

The following tables show ENG-related statistics for this site, reported from spatial data available in Finding Sanctuary's GIS datasets. Greyed out rows indicate features for which GIS data exists within the site boundary, but which have not been included on the list of draft conservation objectives (the reasons are stated in table footnotes).

*Table II.3.40b **Subtidal broad-scale habitats** recorded in this rMCZ, based on an analysis of Finding Sanctuary's EUNIS level 3 broad-scale habitat GIS data (see appendix 8). Data sources: 1 - UKSeaMap, 2 - MESH, 3 - Environment Agency.*

Habitat	Area covered within rMCZ (km^2)	% of total in study area	Source(s)
High energy infralittoral rock	1.43	0.2%	1
Subtidal coarse sediment	155.64	0.5%	1
Subtidal sand	141.07	0.4%	1

*Table II.3.40c **Intertidal broad-scale habitats** recorded in this rMCZ, based on an analysis of Finding Sanctuary's EUNIS level 3 broad-scale habitat GIS data (see appendix 8). Data sources: 2 - MESH, 3 - Environment Agency, 4 – MB102.*

Habitat	Area covered within rMCZ (km^2)	% of total in study area	Source(s)
High energy intertidal rock	1.76	24.2%	4
Moderate energy intertidal rock	<0.01	0.1%	4
Intertidal coarse sediments	1.56	8.1%	4, 3
Intertidal sand and muddy sand	0.22	1.9%	4
Intertidal mud[1]	1.40	0.8%	4, 3
Intertidal mixed sediments	0.79	17.4%	4
Coastal saltmarshes and saline reedbeds[2]	<0.01	<0.1%	3

[1] This is unlikely to be present along this stretch of wave exposed coastline. What is mapped as intertidal mud in this area is probably sand – there is a known problem in translating between habitat classification systems which has led to an overestimate of the intertidal mud area within the region (see appendix 8).
[2] There is only a very small area of this habitat present within the site, at the river estuary at Bude.

*Table II.3.40d **FOCI habitats** recorded in this rMCZ, based on an analysis of Finding Sanctuary's amalgamated GIS FOCI datasets (see appendix 8). Data sources: 1 - MB102; 2 - JNCC/ MESH Canyons survey data; 3 - ERCCIS/Isles of Scilly Wildlife Trust; 4 - DORIS.*

Habitat	Area covered (km^2)	Number of point records (total)	Number of point records (pre-1980)	Source(s)
Fragile sponge & anthozoan communities on subtidal rocky habitats		1	1	1
Subtidal sands and gravels[1]	224.75			1

[1] Conservation objectives have not been included for subtidal sands and gravels as we have considered any conservation requirements met by listed broad-scale habitats.

*Table II.3.40e **FOCI species** recorded in this rMCZ, based on an analysis of Finding Sanctuary's amalgamated GIS FOCI datasets (see appendix 8). Data Sources: 1 - MB102; 2 - Dorset Wildlife Trust; 3 - Cornwall Wildlife Trust; 4 - DERC; 5 - SeaSearch 2009; 6 - Steve Trewhella Survey Log 2010.*

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
Eunicella verrucosa	5	4	1, 3, 5
Padina pavonica	1	1	1

This rMCZ also intersects with polygonal data which The Seahorse Trust provided via our interactive map, indicating the stretches of the south-west coastline along which one or both species of seahorse are found. This site intersects with 1.42 km^2 of seahorse area polygon (refer to appendix 8 for more information).

For additional understanding on how this site is located in relation to environmental data layers, including areas of high benthic biodiversity, offshore bird aggregation areas, or areas of seasonal sea surface temperature fronts, please refer to the interactive PDF maps presented alongside this report.

Site summary

The stretch of coastline between the landmarks of Tintagel Head and Hartland Point is exposed to high levels of wave energy, and is characterised by steep rocky cliffs, sea caves, and stretches of sandy surf beaches. Compared to most of England's coastline, the area can be described as remote, especially around Hartland Point. The site extends from the shore line to depths of approximately 50 metres. The rMCZ intersects with an area of higher than average benthic species diversity, and the Bude and Boscastle sections intersect with areas of higher than average benthic habitat diversity. Local Group feedback has commented on the importance of this area for connectivity, also pointing out the different nature of the sediment habitats found in this area compared to other parts of the region, i.e. a broad-scale habitat mapped along this stretch of coast is likely to differ in the biota it supports, compared to the same broad-scale habitat along the south coast, because of the different exposure regime. The northern stretch of this rMCZ (marked as a separate 'zone'), was highlighted as potentially important for cetaceans, and the Local Group indicated it may be important for porbeagle sharks.

Detailed site description

Sublittoral habitats and communities between Hartland Point and Tintagel were studied during the South West Britain Sublittoral Survey (Maggs & Hiscock, 1979). Nearshore sublittoral regions were composed of gently sloping bedrock, occasionally very broken, with boulders at some sites; rock surfaces had an even covering of sand. These habitats were dominated by algae although at some sites a kelp forest was absent (Davies, 1998). Burd (1989) describes the coastal saltmarshes within the area from The Saltmarsh Survey of Great Britain.

Infralittoral algal communities covered a very wide depth range (to 26 m below chart datum at Boscastle). Infralittoral communities were dominated by foliose red algae *Dictyota dichotoma,* and *Dictyopteris membranacea* were abundant (Davies, 1998). A number of notable species of algae were recorded, for example, the Mediterranean species *Choristocarpus tenellus*. Vertical and upward facing rock was dominated by bryozoans, sea squirts and sponges; erect sponges such as *Raspailia hispida* were common (Davies, 1998).

Although none of the feature is mapped within the GIS datasets available to Finding Sanctuary, Local Group feedback highlighted the presence of *Sabellaria* reef in the area relatively early on. The species is not specified in the Local Group report, but it is likely that they were referring to *Sabellaria alveolata* reef, as there has since been feedback from several scientists at the Marine Biological Association that this FOCI habitat is present at Duckpool (north of Bude), and this is confirmed in the scientific literature. Duckpool is a small sheltered sandy bay near the border between Devon and Cornwall, which was considered to be a site of primary marine biological importance by Powell *et al*. (1978). Lower shore habitats have exceptionally fine colonies of the reef-building tubeworm *Sabellaria alveolata* (considered to be the finest in Britain by Cunningham *et al*. 1984). Long-term studies on the formation and duration of these reefs at Duckpool were reported by Wilson (1971; 1974; 1976).

In 1985 Bude Bay on the north Cornish coast was chosen for long-term surveillance by Gibbs *et al*. (1999). The bay faces west and is fully exposed to the Atlantic; north of Bude the shoreline is a long sandy beach interrupted by high rock outcrops, some extending to the level of low water neap tides, whilst to the south of Bude the mid-low intertidal zone is a rock platform of east-west orientated reefs except for a long stretch of sand at Widemouth. Mussel (*Mytilus edulis*) beds are extensive in the northern half of the bay, but colonies are scarce in the south.

Eunicella verrucosa was reported in the rMCZ area during the 1979 South West Britain Sublittoral Survey (Tintagel Head to the Devon border - Maggs & Hiscock, 1979). During Seasearch dives, Sharrock (2008) describes results from two trips to attempt to survey the area around Hartland Point. Only one dive was achieved and that in very poor underwater visibility, but large frequent clumps of potato crisp bryozoan together with frequent branching sponges indicated a probable fragile sponge and anthozoan community.

Although there have only been a few sightings of the Short Snouted Seahorse in this region, there is no reason to suspect that there is not a reasonable population living here. For breeding purposes, there needs to be an existing population and divers have spotted them for a number of years. Most of the sightings have been anecdotal but there is no reason to doubt them (Neil Garrick-Maidment, *pers. comm*).

Stakeholder narrative: Assumptions and Implications

As explained in part I, the stakeholder narrative is a vital underpinning of the site recommendations. Working assumptions and implications are presented here, and additional comments are presented in the following section.

The following fundamental assumption was recorded to apply to all activities in all sites: **The fundamental assumption about human activities within MCZs is that activities can continue (under current licensing regimes where applicable), as long as they do not prevent the conservation objectives from being achieved.** This assumption applies to all activities. Table II.3.40f shows more specific working assumptions and implications that were recorded for this site over the course of the planning process.

Following that, table II.3.40g shows the vulnerability assessment (VA) snapshot for this site. The VA meetings took place at the end of the project, and they did not involve the Steering Group. They started to discuss site management, but did not reach any firm conclusions. The VA snapshot table reflects the point that the VA discussions had reached at the time of the last Joint Working Group meeting in May 2011. Many Steering Group members expressed concerns about the VA process and its outcomes (see section II.2.1 for full details).

Table II.3.40f Specific assumptions and implications relating to Hartland Point to Tintagel rMCZ. Black text reflects the working assumptions and implications recorded throughout the planning discussions. The development of the narrative recorded in black can be traced back through the Working Group and Steering Group meeting reports from 2009 to 2011. Red and green text in the first column comments on how the snapshot of the vulnerability assessment (VA) relates to each of the working assumptions that had been made as planning took place (refer to part I for a full explanation of the VA snapshot).

Activities assumed to not be allowed within the site	
Assumptions	**Implications**
Aggregate extraction will not be allowed Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not	**Direct implications:** o Aggregate dredging can only occur where the mineral resources are geologically located – in highly localised and discrete areas. If aggregate operations are not allowed in MCZs (subject to appropriate monitoring, mitigation and management), and MCZs coincide with aggregate resource,

considered during the VA meetings	then this will have significant impact on national construction aggregate supply and coast defence. **Given this assumption, there are still the following concerns:** o If aggregate operations (subject to appropriate monitoring, mitigation and management) are restricted in areas adjacent to an MCZ, then this will have significant impact on national construction aggregate supply and coast defence.
Bottom-towed fishing gear will not be allowed (includes benthic trawling and hydraulic dredging) The VA discussed this activity and stated that the site might be partially closed to bottom-towed fishing gear, in order to protect the more sensitive habitats & species.	**Direct implications:** o Loss of ground for bottom-towed gear fishermen o Will affect day boats in particular, which are less able to travel far for alternative grounds than larger boats would be o Displacement of bottom-towed gear o Increased competition for fishing grounds o Reduced diversity and flexibility of fishing o Cumulative impact on bottom-towed gear fleet where protected areas are close together o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers. (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) o Potential safety implications derived from displacement from sheltered areas. o Potential environmental implications derived from concentrating effort in alternative grounds or due to new fishing ground searching activity. **Benefits:** o MCZ boundaries already changed to reduce impacts on mobile fishing gear o Unanimous support from Local Group for exclusion of mobile fishing gear
Anchoring of large vessels will not be allowed (except in emergencies) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.

Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	**Implications**
Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) **Given this assumption, there are still the following concerns:** o Local Group feedback indicates that this is an important area for potting, and restricting potting could have negative impacts on North Devon fishermen. o Static gear fishermen might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed
Pelagic trawls will be permitted, but in the water column and seafloor protection zone will require mitigation against bycatch of cetaceans Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
The installation, operation and maintenance of renewable energy devices will be permitted *Based on SAP feedback the assumption cannot apply to all sites in the network, although it can apply to any given site on its own.*	**Direct implications:** o **Given this assumption, there are still the following concerns:** o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: - additional costs to the renewables industry, e.g. for

Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	licensing mitigation and monitoring - delays to renewables development - delays, lost revenue and additional costs associated with cable repair activity restrictions o Attracting the funding (for development) may be harder in the first place as sites with MPA designations within them will be less attractive to potential investors. o Costs and delays associated with co-location of renewables in MCZs, could result in long term implications in terms of renewables deployment which could have serious implications for industry and Government in terms of loss of operational revenue and missing EU climate change targets. o Enforced co-location with MCZs would dramatically restrict deployment. **If the assumption turns out to be wrong:** o If co-location assumptions are not correct the impacts would/could be: site locations that can't be developed, increased costs (the implications could be re-routing of cables around a feature could cost an additional £600,000 - £1.3m/km depending on cable type, size and seabed geology), construction delays, failure to meet renewables targets, impacts on acidification, additional monitoring requirements, increased uncertainty and declining investor confidence in renewables activities. o Increased competition for sea space with other sea users. o Good Wind resource, but landscape buffer requirements make deployment less likely. o Limited near-shore wave energy potential. o Overlaps one of the few headland tidal resources.
Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o There are current coastal protection works in the area, and there has been concern around whether there would be any impacts on them arising from an MCZ designation.

Aquaculture of fin fish and shell fish will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Crab tiling / bait digging will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o A Steering Group member commented to state that it is not clear where this occurs on the site, so there may not be implications from this assumption
Beach replenishment will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o There are current coastal protection works in the area, and there has been concern around whether there would be any impacts on them arising from an MCZ designation.

Activities assumed to be allowed to continue / occur within the site	
Assumptions	**Implications**
Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Handliners might face possible additional costs if mitigation measures/monitoring needed **Benefits:** o Potential for increased and enhanced leisure and recreational activity
The installation and maintenance of cables will be permitted and will not be made prohibitively expensive within the site. This applies to power cables (including cables for renewable energy devices), and telecommunications cables.	**Direct implications:** o **Given this assumption there are still the following concerns:** o Cable installation cost increases and delay o Cable repair cost, delays and lost revenue could increase

Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	due to activity restrictions on cable repair. o There is no definition of what 'prohibitively expensive' means; the cables representative would like assurance that no additional cost will result from MCZ designation (beyond costs associated with existing management and mitigation requirements). **If the assumption turns out to be wrong:** o For renewables/power cables, re-routing of cables around a feature or site might mean longer cable routes, at a cost of £600,000 - £1.3 million/km depending on cable type, size and seabed geology. o There may be other costs, e.g. costs associated with licensing, mitigation measures and monitoring requirements. o Increased licensing requirements and costs of cabling may have serious implications for industry and Government in terms of loss of operational revenue, missing EU climate change targets etc. o One proposed power cable in site.
The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **If the assumption turns out to be wrong:** o There are active telecommunication cables interconnecting the UK mainland from Bude overseas. There would be implications for telecommunications if these cables were not able to stay operational, including access for maintenance purposes. Six active telecoms cables.
Tourism and recreational activities will be permitted. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Maintenance dredging in ports (to enable access to ports) will be permitted *The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o There are small port and harbour facilities in the area, and a wider concern has been raised about whether they would be impacted by an MCZ designation.
Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o (No heritage wrecks currently present in the site)
Anchoring of small vessels will be permitted *There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o There are small port and harbour facilities in the area, and a wider concern has been raised about whether they would be impacted by an MCZ designation. o No clear working group definition exists of what counts as a 'small' vessel - 24m was proposed some time ago by the RYA, but no decision was reached as to whether we would adopt that size in MCZ planning.
Passage of ships will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o There are small port and harbour facilities in the area, and a wider concern has been raised about whether they would be impacted by an MCZ designation.

Seaweed harvesting will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Wildfowling would be permitted *This was not an agreed assumption from the Working Group, but was been highlighted in feedback as an activity that currently is ongoing in the area, prior to the February 2011 Steering Group meeting* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Table II.3.40g VA Snapshot table: This table records the point which the vulnerability assessment discussions had reached regarding site management, at the time of the final Joint Working Group meeting in May 2011. The outcome is not definitive, and the VA did not carry out an exhaustive review of all the working assumptions recorded in the longer table above. The Steering Group were not directly involved in the VA discussions, and at their final meeting, expressed considerable reservations about the VA outcome (see section II.2.1). The reason this VA snapshot table is included here is so that readers have a record of what the VA snapshot was showing at the time the final stakeholder comments were recorded for this site. For a full explanation of the VA snapshot, please refer to part I. The maps in appendix 13 show a visual representation of the information in all the VA snapshot tables in the rMCZ site reports.

Sector	Potential Management
Commercial Fishing – all mobile bottom gears	Management: - Option 1: Prohibition of fishing over specific BSH/FOCIs in the rMCZ. These are: fragile sponge & anthozoan communities on subtidal rocky habitats, *Eunicella verrucosa, Padina pavonica.* - Option 2: no management Measure: - Option 1: voluntary - Option 2: byelaw

Stakeholder narrative: Uncertainties and Additional Comments

Uncertainties

The most significant uncertainty faced by the project was the lack of knowledge on management of MCZs, and this uncertainty still applies to all rMCZs in the network. There was uncertainty over what activities will be affected by MCZ designations: what activities will be permitted to continue within (or near) MCZs, what activities will not be permitted, and what activities will require mitigation or some form of restriction other than a complete ban. There was also uncertainty over what measures will be taken to ensure any activity restrictions are put in place (e.g. byelaws, voluntary measures).

Additional comments

The following is a set of additional comments made by stakeholder representatives over the course of the planning work. Some of these comments were made specifically about this site, others were more generic comments which the project team consider to be relevant to this site.

- *Mobile bottom gear*
    - Feedback from a fishing representative indicated that some trawling takes place in the area that looks like it has been 'cut out' from this site, where the site boundary runs in a narrow strip along the shoreline. The stakeholder group was expecting better co-ordinates to be provided for a trawling area to be cut out, but this did not happen – as a result, the shape of this rMCZ is more irregular than that of others in the network.

- *Renewables*
    - The Crown Estate requested slight movement to secure tidal resource but this was rejected by working group.

- By making a large area of coastline a rMCZ it could have large implications for the renewables sector if cabling is restricted in rMCZs, as it might block potential cable routes across the coastline to areas further offshore
- It was noted that the high biodiversity found in the area of Hartland Point is only present because of the tidal stream which is a resource that the renewables sector would like to be able to exploit

- *Generic implications for ports (applicable to all rMCZs where port jurisdictions and activities overlap with the site, or are adjacent to the site)*
  - Harbour Revision Orders, General Directions, Pilotage Directions etc.
  - Ports and harbours are limited to their jurisdiction.
  - Ability of port to comply with legal responsibilities e.g. Oil Spill Response Planning etc.
  - Administration, resource on and off the water, legal and technical specialists requirements associated with additional management and legal responsibilities should co-location be pursued.
  - Additional time and cost triggered by all of the above both to the port
  - Implications on other industries using the port or who wish to use the port in the future.
  - Existing management practices on and off water e.g vessel and activity management, speed, timing restrictions etc.
  - Existing emergency response – weather, pollution, security.
  - Dredging to ensure maintenance of safe navigable depths.
  - Berthing, mooring & anchoring or small & large vessels.
  - Ship building, maintenance, refurbishment & repair.
  - Maintenance, refurbishment & repair of port and harbour infrastructure.
  - New port and harbour infrastructure.
  - Access & egress to and from harbour.
  - Recreational activities within harbour.
  - Ship access and egress to and from berths.
  - Significance of timescales, delays and cost to management practices.

- *General benefits of MCZs*
  - Some stakeholder representatives would like the following recorded and for these to be considered during the impact assessment:
    - Fisheries spill-over.
    - Improvements for the local economy.
    - Education opportunities.
    - Benefits to science.
    - Focus for voluntary groups.
    - Potential increase in the amount and quality of recreational activities (diving, sea angling, environmental tourism, etc).
    - The designation as an MCZ will be a selling point and will undoubtedly be used as an identifier to the area to highlight it as somewhere to visit.

- *Monitoring*
  - There are two main types of monitoring which will need to take place within rMCZs:
    - Monitoring the activities within a site and the various levels at which they are occurring.
    - Monitoring the ENG features for changes in condition.

- *Management measures*
    - Part of this rMCZ lies beyond the 6 nautical mile limit. There may be non-UK vessels with historical fishing rights in the area. For sites beyond 6nm, stakeholder representatives repeatedly voiced concern over how the activity of non-UK fishing vessels might be managed, and stated opposition to any unilateral measures that would apply to UK vessels only. At the time of the third progress report, we had received the following statement from the SNCBs and Defra: 'When considering the impacts of fishing restrictions on non UK vessels, it is the Government's intention that fishing restrictions will not be imposed unilaterally on UK vessels before they can be applied to equivalent EU vessels operating within the relevant areas. In the case of those EU fishing vessels with historic fishing rights in UK waters between 6 and 12 nm, Defra will negotiate with the relevant Member States and the European Commission before introducing byelaws, or orders that are applicable to all EU vessels, or seeking Common Fisheries Policy (CFP) regulation measures. Once introduced, these would apply to all EU vessels (including UK vessels) equally and at the same time.'

- *Reaction to the vulnerability assessment process and outcomes*
    - At the sixth Joint Working Group meeting in June 2011, the results from the regional vulnerability assessment (VA) discussions were presented to the group, as shown in table II.3.40g (the VA process is described in part I). This generated concern within the JWG, for two reasons. Firstly, several members of the group had serious misgivings over the outcome of the management discussions, especially with respect to those inshore rMCZs for which no management of bottom-towed mobile fishing gear was highlighted as necessary. Secondly, the group had serious misgivings about the process itself, from which they felt disenfranchised.
    - The Steering Group made a statement at their final meeting, articulating those concerns in more detail. They recommended that there should be a process that allows them to review potential management measures for MCZs, before public consultation. The full statement made by the Steering Group is in section II.2.1.

Levels of support

The network report (section II.2) includes a project team reflection on levels of support for the network recommendations as a whole, and the site specific reflection presented here should be read within the wider network context.

There is support for this site from local stakeholders on the North Devon Biosphere Reserve Marine Working Group (www.northdevonbiosphere.org.uk) who worked on sites in North Devon on behalf of the Devon Local Group. The northern boundary of this site represents the outcome of a negotiation between conservation interests (who wanted the site boundary to extend further east around Harland Point, to capture an area of high benthic biodiversity), and renewables interests (who wanted the site boundary drawn further south of Hartland Point, as they were concerned about future obstacles to exploiting the high tidal resource present in the area).

The Crown Estate indicated that there are active telecommunication cables interconnecting the UK mainland and overseas running from Bude. They also highlighted that licensed wildfowling, recreation boat moorings, port activities, coastal protection works, and waste water outfalls are

located in the area. They are supportive with the assumption that MCZ designation would not restrict maintenance / repair of cables, or the other activities described.

Supporting documentation

GIS data used for reporting the quantitative habitat and species figures in the tables above includes the following sources: UKSeaMap modelled broad-scale habitat data, Cornwall Wildlife Trust, Seasearch 2009, MB102, and Environment Agency intertidal habitat data. Refer to appendix 8 for details, and to the tables above for data sources for specific features in this site.

Further evidence underpinning the site can be found in the publications and datasets referred to in the detailed site description. Dr Nova Mieszkowska from the Marine Biological Association may be able to provide more recent information on *Sabellaria alveolata* reefs at Duckpool.

The North Devon Biosphere Reserve Marine Working Group has supplied additional information that is relevant to this site. This information includes a detailed description of the site, details of the species and habitats present, and recommendations for the management of the site if designated as an MCZ. These recommendations have been included in their entirety in the additional materials supplied with this final report.

Site map series

On the following pages there are three maps of this site.

- The first map (FR_054a) is the main site map showing the rMCZ boundary and includes points with coordinates (in WGS84 UTM30N). The map also shows charted depth and existing Marine Protected Areas for reference. Please note: the lat/long coordinates of the vertices in the following maps have been calculated in decimal degrees, and in degrees, minutes and seconds. For plotting on a standard Admiralty (UKHO) chart, the seconds of each coordinate need to be converted to decimal. An MS Excel table showing all coordinates in degrees, minutes and decimal seconds has been provided in the additional materials section (see Appendix 14) for plotting purposes.
- The second map (FR_054b) shows the rMCZ boundary over broad-scale habitats, and records of habitat and species FOCI. The data shown on this map corresponds with the information in tables II.3.40b to II.3.40e, data sources are indicated in the tables.
- The third map (FR_054c) shows socio-economic datasets. For spatial data showing the distribution of fishing effort, please refer to the interactive PDF maps supplied with the additional materials (see appendix 14).
- Because of the large number of features shown on the site maps (especially inshore biophysical maps), it has not been possible to embed comprehensive legends within the site maps themselves. A comprehensive map legend is therefore provided in appendix 7, which explains the symbology used on all the maps within this final report.
- Appendix 8 describes the data sources for the information shown on the final report maps in detail.

Map: FR_054a

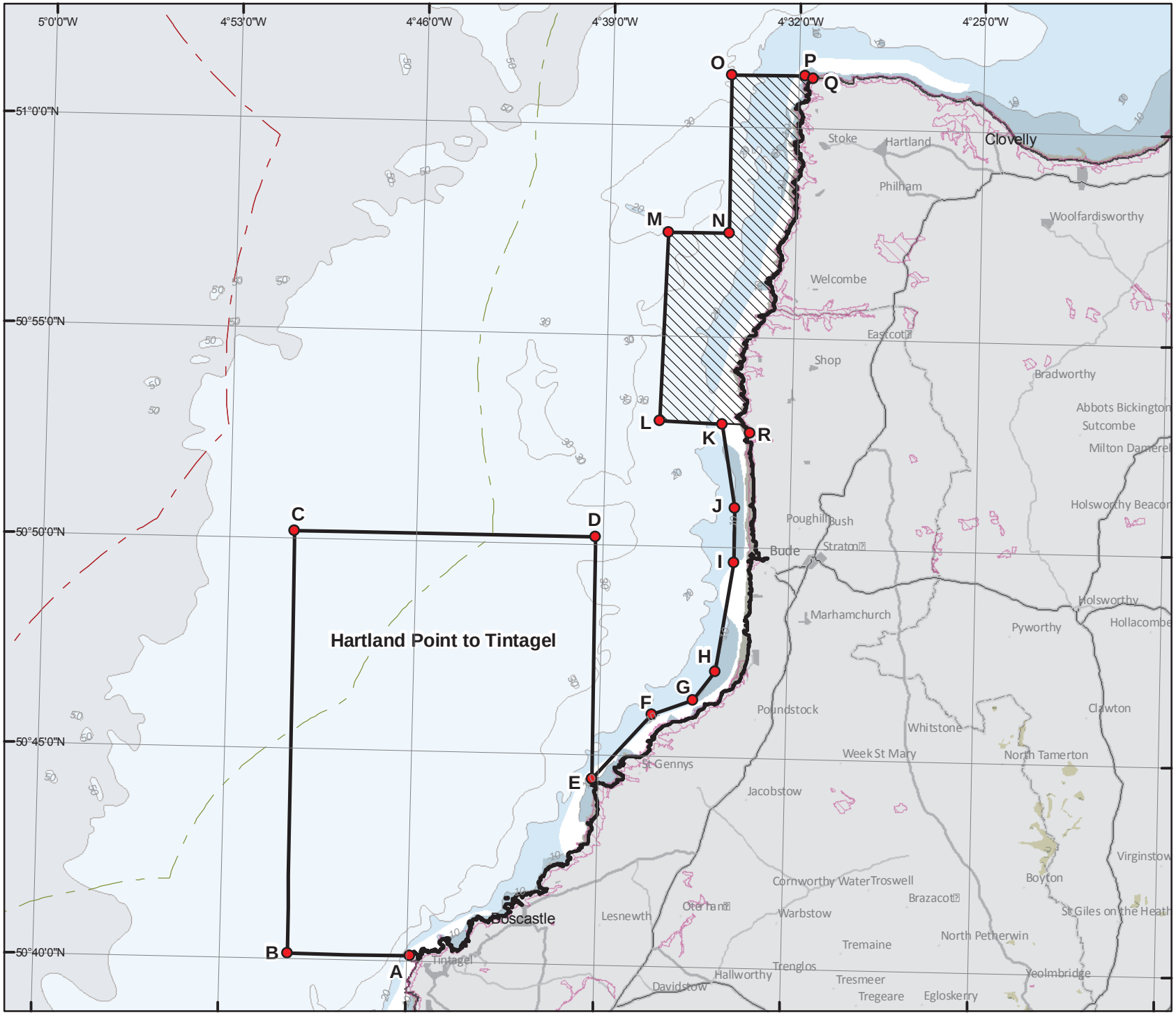
Version:30Aug11

Hartland Point to Tintagel rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 3 6 12 km N

FINDING SANCTUARY



Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.6693	-4.7647	50° 40' 9" N	4° 45' 52" W
B	50.6690	-4.8411	50° 40' 8" N	4° 50' 28" W
C	50.8368	-4.8429	50° 50' 12" N	4° 50' 34" W
D	50.8371	-4.6544	50° 50' 13" N	4° 39' 15" W
E	50.7410	-4.6537	50° 44' 27" N	4° 39' 13" W
F	50.7669	-4.6172	50° 46' 0" N	4° 37' 2" W
G	50.7730	-4.5913	50° 46' 22" N	4° 35' 28" W
H	50.7846	-4.5778	50° 47' 4" N	4° 34' 40" W
I	50.8280	-4.5674	50° 49' 40" N	4° 34' 2" W
J	50.8497	-4.5677	50° 50' 58" N	4° 34' 3" W
K	50.8829	-4.5769	50° 52' 58" N	4° 34' 36" W
L	50.8835	-4.6160	50° 53' 0" N	4° 36' 57" W
M	50.9583	-4.6130	50° 57' 29" N	4° 36' 46" W
N	50.9585	-4.5750	50° 57' 30" N	4° 34' 30" W
O	51.0214	-4.5750	51° 1' 16" N	4° 34' 30" W
P	51.0215	-4.5290	51° 1' 17" N	4° 31' 44" W
Q	51.0205	-4.5244	51° 1' 13" N	4° 31' 27" W
R	50.8827	-4.5656	50° 52' 57" N	4° 33' 56" W

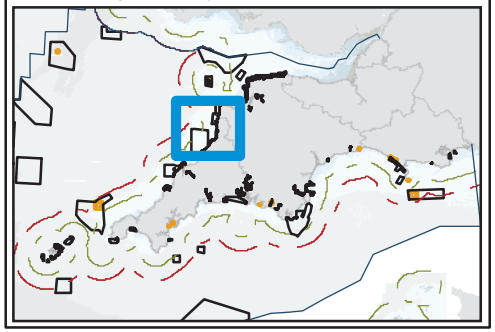
Map Legend

- 6 nautical mile limit
- 12 nautical mile limit
- Recommended MCZ (rMCZ)
- Zone within a rMCZ

Existing MPAs

- SSSI (not part of MPA network)

A comprehensive legend is provided in the appendices of the Finding Sanctuary final report.



Map: FR_054b

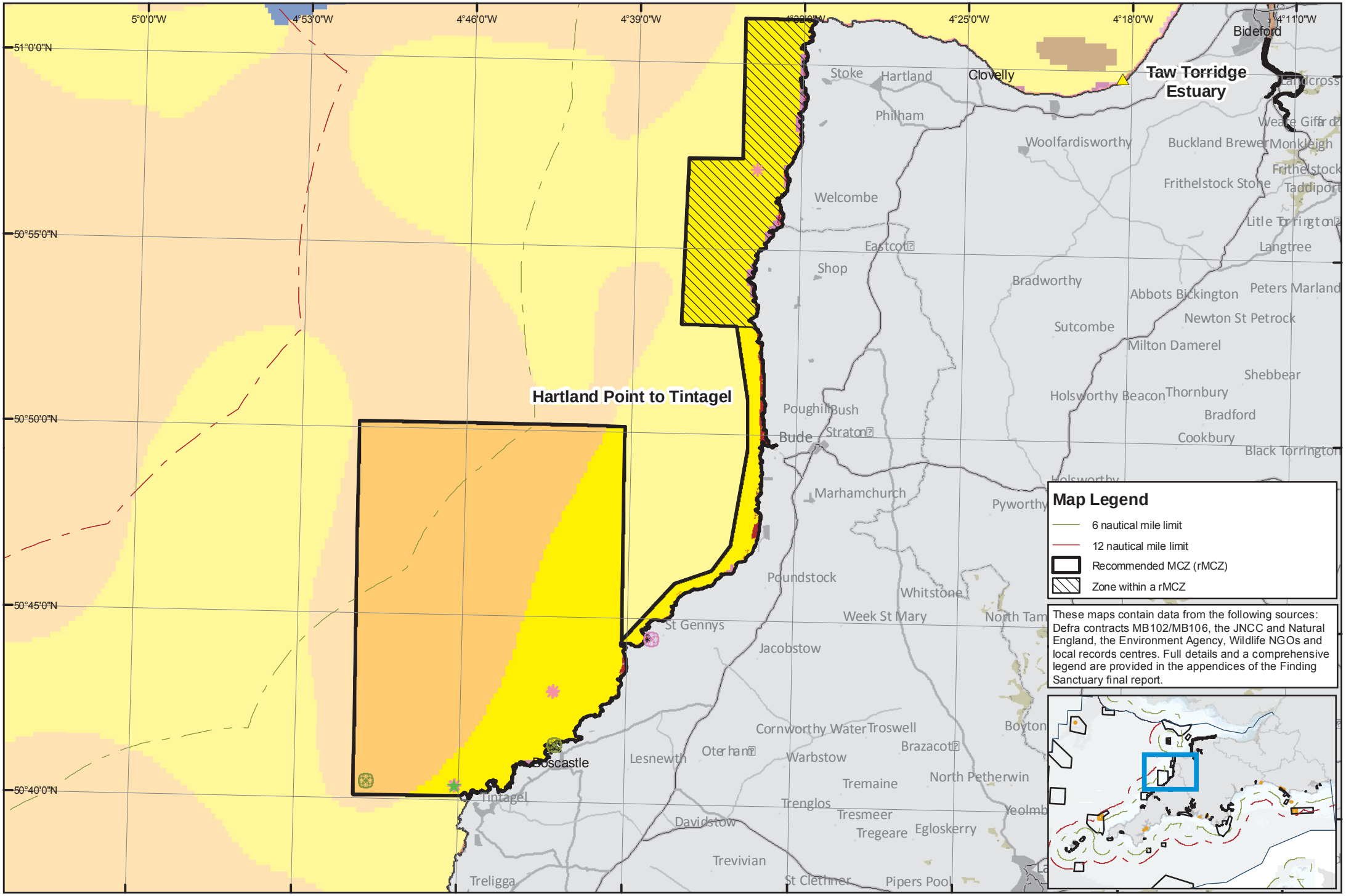
Version:30Aug11

Hartland Point to Tintagel rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with biophysical information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 5 10 km N

FINDING SANCTUARY



These maps contain data from the following sources: Defra contracts MB102/MB106, the JNCC and Natural England, the Environment Agency, Wildlife NGOs and local records centres. Full details and a comprehensive legend are provided in the appendices of the Finding Sanctuary final report.

Map: FR_054c

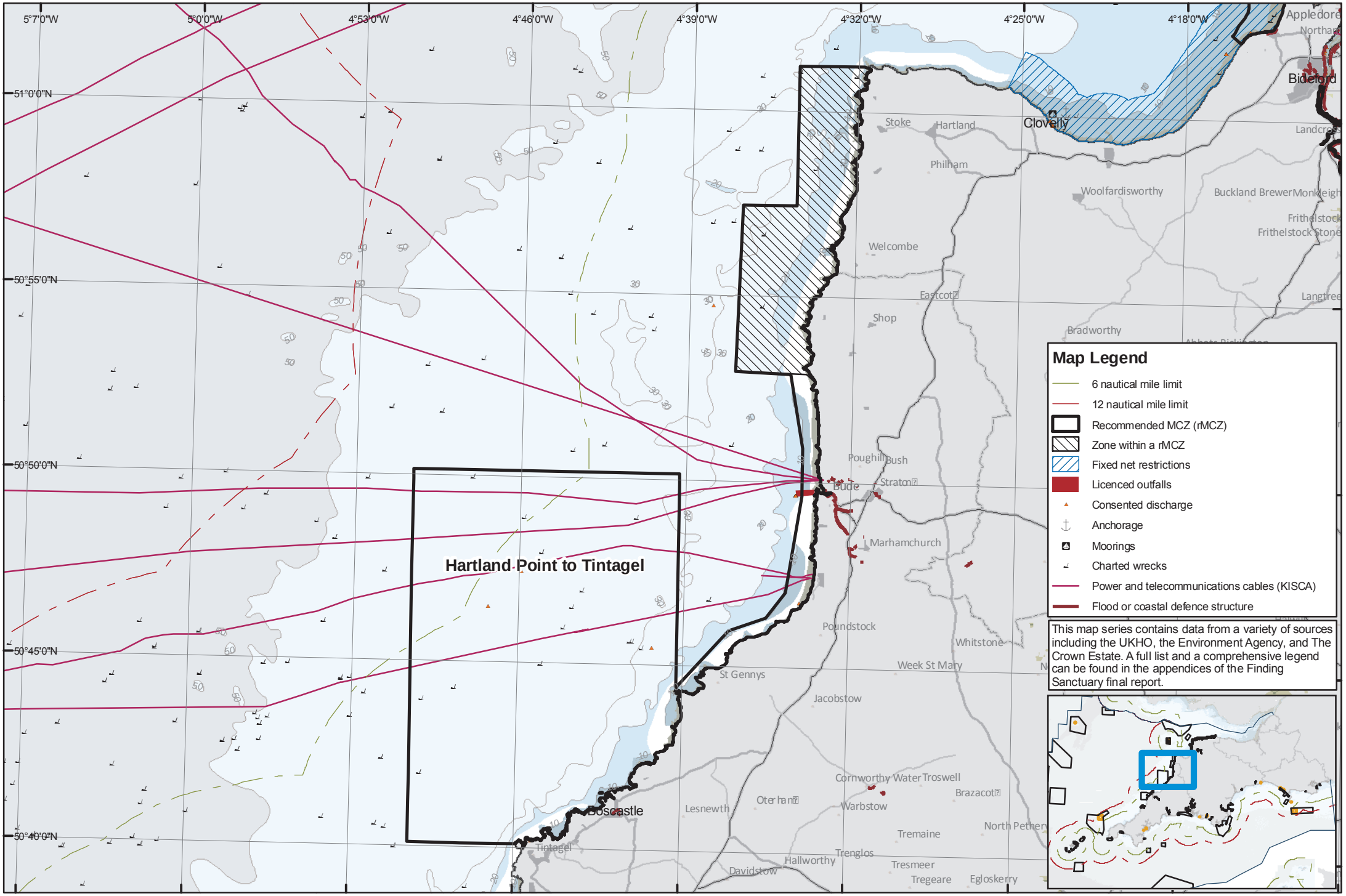
Version:5Sep11

Hartland Point to Tintagel rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with socio-economic information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 3 6 12 km N

FINDING SANCTUARY



Map Legend

- 6 nautical mile limit
- 12 nautical mile limit
- Recommended MCZ (rMCZ)
- Zone within a rMCZ
- Fixed net restrictions
- Licenced outfalls
- Consented discharge
- Anchorage
- Moorings
- Charted wrecks
- Power and telecommunications cables (KISCA)
- Flood or coastal defence structure

This map series contains data from a variety of sources including the UKHO, the Environment Agency, and The Crown Estate. A full list and a comprehensive legend can be found in the appendices of the Finding Sanctuary final report.

II.3.41 Lundy MCZ

Basic site information

***Site centre location (datum used: ETRS89)*:**

Decimal Degrees		Degrees Minutes Seconds	
Lat	**Long**	**Lat**	**Long**
51.1841	-4.6685	51° 11' 2'' N	4° 40' 6'' W

This MCZ encircles Lundy Island. The centroid falls on the centre of the island, which is outside the site boundary.

***Site surface area*:** 30.69 km^2 (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea
OSPAR region: Region III: Celtic Waters

Site boundary: The MCZ boundary is a rectangle centred on Lundy Island, of approximately 7.3 x 4.6 km.

***Sites to which the site is related**:* The MCZ boundary is identical to the boundary of Lundy SAC. It contains the Lundy recommended reference area, which has the same boundary as the existing Lundy no-take zone. Most of Lundy Island itself is designated as a SSSI. Lundy is within the North Devon Biosphere Reserve region.

Maps of the site are included at the end of this site report. The main site map shows points with coordinates along the site boundary (in WGS84 UTM30N).

Features proposed for designation with the Lundy MCZ

Finding Sanctuary has been tasked with developing conservation objectives for the Lundy MCZ, the only MCZ that has already been designated in our region at the time of writing this report. The boundary of the MCZ coincides with the boundary of the Lundy SAC, which already protects a long list of features present within the site (all of the broad-scale habitats and most of the FOCI mapped within the boundary of Lundy MCZ). The features contained within and to be protected within Lundy MCZ have not been explicitly discussed within the Working Groups, as the work has focussed on developing new rMCZs.

Table II.3.41a Draft conservation objectives for the Lundy MCZ. M = maintain in favourable condition, R = recover to favourable condition. This is an extract of the conservation objective summary tables in section II.2.6. ***The full text of the draft conservation objectives can be found in appendix 15****.*

Species FOCI	*Palinurus elephas*	Spiny lobster	**R**
Habitat FOCI	Mud habitats in deep water		**M**
Mobile species not listed in ENG	*Puffinus puffinus*	Manx shearwater	**M**
	Uria aalge	Guillemot	**M**
	Alca torda	Razorbill	**M**
	Fratercula arctica	Puffin	**M**

The validity of the records of the 'mud habitats in deep water' FOCI habitat at Lundy has been strongly questioned by a member of the Science Advisory Panel, who has in-depth personal knowledge of the area and has stated that the habitat is not present at Lundy (K. Hiscock, *pers. comm.*). In this report, given the records in MB102, the habitat is included on the draft conservation objectives list for Lundy, and Lundy has been counted as a replicate for the habitat in the network statistics in section II.2.8. However, the key rMCZ for this FOCI habitat within the network is the Celtic Deep rMCZ, not Lundy.

The Joint Working Group discussed at length whether to add a wider 'buffer' zone around the current MCZ boundary, and recommend conservation objectives for seabirds within that buffer area, given Lundy's importance to the listed range of seabird species. The suggestion to do this had come from the Local Group, who indicated that speed restrictions on boats might be put in place to avoid disturbance to birds. The decision was taken not to add the buffer zone, because the group considered there to be no known activities causing significant levels of disturbance to the birds beyond the current site boundaries (refer to the Joint Working Group meeting report series for further details of this discussion).

The following tables show ENG-related statistics for this site, reported from spatial data available in Finding Sanctuary's GIS datasets. Greyed out rows indicate features for which GIS data exists within the site boundary, but which have not been included on the list of draft conservation objectives (the reasons are stated in table footnotes).

*Table II.3.41b **Subtidal broad-scale habitats** recorded in this MCZ, based on an analysis of Finding Sanctuary's EUNIS level 3 broad-scale habitat GIS data (see appendix 8). Data sources: 1 - UKSeaMap, 2 - MESH, 3 - Environment Agency.*

Habitat	Area covered within MCZ (km^2)	% of total in study area	Source(s)
High energy infralittoral rock[1]	2.58	0.4%	1
Moderate energy infralittoral rock[1]	3.89	1.2%	1
High energy circalittoral rock[1]	3.39	0.3%	1
Moderate energy circalittoral rock[1]	3.75	<0.1%	1
Subtidal coarse sediment[1]	2.78	<0.1%	1
Subtidal sand[1]	14.14	<0.1%	1, 2

[1] Features / areas already protected within an overlapping MPA. See appendix 11 for details.

*Table II.3.41c **FOCI habitats** recorded in this MCZ, based on an analysis of Finding Sanctuary's amalgamated GIS FOCI datasets (see appendix 8). Data sources: 1 - MB102; 2 - JNCC/ MESH Canyons survey data; 3 - ERCCIS/Isles of Scilly Wildlife Trust; 4 - DORIS.*

Habitat	Area covered (km^2)	Number of point records (total)	Number of point records (pre-1980)	Source(s)
Mud habitats in deep water		14	14	1
Fragile sponge & anthozoan communities on subtidal rocky habitats[1]		6	6	1
Subtidal sands and gravels[2]	27.78			1

[1] Features / areas already protected within an overlapping MPA. See appendix 11 for details.
[2] Conservation objectives have not been included for subtidal sands and gravels as we have considered any conservation requirements met by listed broad-scale habitats.

*Table II.3.41d **FOCI species** recorded in this MCZ, based on an analysis of Finding Sanctuary's amalgamated GIS FOCI datasets (see appendix 8). Data Sources: 1 - MB102; 2 - Dorset Wildlife Trust; 3 - Cornwall Wildlife Trust; 4 - DERC; 5 - SeaSearch 2009; 6 - Steve Trewhella Survey Log 2010.*

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
Amphianthus dohrnii[1]	1		1
Eunicella verrucosa[1]	76	37	1, 5
Leptopsammia pruvoti[1]	12	1	1, 5
Palinurus elephas	8	2	1
Phymatolithon calcareum[2]	5	5	1

[1] Features / areas already protected within an overlapping MPA. See appendix 11 for details.
[2] There are a small number of records of this species of maërl present within the boundaries of this site, all of which are older than 30 years. This was discussed during the vulnerability assessment, and given the wider environmental characteristics of the site, it was considered a likely erroneous record, or a small fragment of maërl washed in from elsewhere. The species was therefore not included on the list of draft conservation objectives for the site.

This MCZ also intersects with polygonal data which The Seahorse Trust provided via our interactive map, indicating the stretches of the south-west coastline along which one or both species of seahorse are found. This site intersects with 5.77 km^2 of seahorse area polygon (refer to appendix 8 for more information).

For additional understanding on how this site is located in relation to environmental data layers, including areas of high benthic biodiversity, offshore bird aggregation areas, or areas of seasonal sea surface temperature fronts, please refer to the interactive PDF maps presented alongside this report.

Site summary

Lundy is the only MCZ in the region that is already designated. It contains an existing no-take zone, which has been recommended separately as a reference area. Lundy MCZ intersects with an area of higher than average benthic species and habitat diversity (within the south-west context). Lundy is not just a hotspot of benthic diversity; it is also of added importance for seabirds, as a foraging and

loafing area, particularly for Manx shearwaters, puffins, razorbills and guillemots. The MCZ extends from the shoreline to depths of approximately 40 metres.

Detailed site description

Lundy is made of a granite and slate reef system, exposed to a wide range of wave action and tidal stream strength. Combined with significant topographical variation, this has resulted in a diverse complex of biological communities. The full salinity reefs are both infralittoral and circalittoral (>50 m depth), and are highly influenced by coastal processes. Several communities at their northern limit of distribution occur here. Fragile long-lived species, such as the soft coral *Parerythropodium coralloides*, sea-fans *Eunicella verrucosa* and erect branching sponges, are present, as are all five British species of cup-coral (English Nature, 2000).

The communities of benthic fauna around Lundy are unusually rich with many rare and delicate slow-growing species (McDouall, 2006). A number of nationally rare and scarce species have been recorded from coarse sediments around Lundy, including the sea squirt *Molgula oculata* and the brown seaweed *Choristocarpus tenellus*. The red band fish *Cepola rubescens* occurs in subtidal mud around Lundy (McDouall, 2006). Warwick & Davies (1977) surveyed the sublittoral sediments and macrofauna in the Bristol Channel and around Lundy.

There are a particularly rich diversity of seaweeds - 316 species have been recorded (this is getting on for 50% of the UK total). This is partly a reflection of the study it has received by phycologists over 60 years but it is genuinely very rich. It is the most northerly site for *Laminaria ochroleuca* in the UK. The biggest change found in 2008 was the presence of alien species of seaweed that had not been reported in earlier studies (Brodie *et al*. 2007).

Hall-Spencer *et al.* (2007) and Munn *et al*. (2008) examined bacterial cultures from two cold coral *Eunicella verrucosa* specimens (which were described as necrotic) from Lundy to compare differences in the activity levels of bacterial enzymes.
The Local Group noted the presence of HeloMsim and MedLumVen biotopes (as defined in Connor *et al.* 2004), as well as subtidal sand and gravel, tide swept channels, submerged or partially submerged sea caves, maërl, pink sea fan, sea fan anemone (N. Lundy), spiny lobster (W & E Lundy), and grey seal *Halichoerus grypus.*

Lundy is of recognised importance for a range of seabirds. Small populations of Manx shearwater, guillemot, razorbill and puffin breed on Lundy, the puffins nesting in disused rabbit burrows in cliff grassland. While the numbers of guillemot and razorbill seemed to be stable, puffins were described as being in serious decline by McDouall (2006) predation by rats being a contributory factor. Gannets bred on Lundy, the last nesting site in south west England, up until the early 1900s. Persistent nest robbing and disturbance were the likely reasons for the demise of this colony (McDouall, 2006).

The Seabird Recovery project put together a rat eradication project on Lundy Island which took place between January 2003 and March 2006. Lock (2006) summarized the restoration of breeding populations of seabirds on Lundy Island. Manx Shearwaters have increased from 308 to 1120 pairs on Lundy since rats were eradicated (RSPB unpubl. data from Ratcliffe *et al*. 2009). Observations of juvenile Manx Shearwater in 2004, 2005, and 2006 proved successful breeding and led to a more detailed study in 2007. In a study by Booker *et al*. (2008), young birds emerging from burrows prior to fledging were captured and ringed (Booker *et al*. 2008; Booker & Price, 2008).

Changes in the populations of seabirds breeding on Lundy, which holds the largest colonies in the Bristol Channel, have been summarised by Davis & Jones (2007). Aside from Lesser Black-backed and Herring Gulls, small numbers of Great Black-backed Gulls and Kittiwakes (*Rissa tridactyla)* also breed on Lundy. Numbers of Kittiwakes fell from an estimated 3000 pairs in 1939 (Perry, 1940) to 148 in 2004. The Guillemot (*Uria aalge)* population also fell from an estimated 19,000 pairs in 1939 (Perry, 1940) to 1647 individuals in 1969 and the Razorbill (*Alca torda)* population from 10,500 pairs in 1939 to 761 individuals in 1986. Numbers of these species in 2004 were 2321 and 841 individuals respectively. A population of 3500 pairs of Puffins (*Fratercula arctica)* in 1939 was reduced to a low of just nine pairs in 2003 (Burton *et al.* 2010). Estimates of the numbers of Manx Shearwaters (*Puffinus puffinus)* breeding on Lundy have varied greatly, from 100 to 1000 pairs (Dymond, 1980) to 1000 to 10,000 pairs (Thomas, 1981). A more comprehensive study using tape playback suggested a population of 166 pairs in 2001 (Price & Booker, 2001). In addition to these species, Fulmars (*Fulmarus glacialis)*, Shags (*Phalacrocorax aristotelis)* and possibly Storm Petrels (*Hydrobates pelagicus)* also breed in small numbers. Seabirds on Lundy were formerly subject to heavy human persecution, though the declines of most species in the latter half of the 20th century have been particularly associated with predation by both Brown Rats (*Rattus norvegicus)* and Black Rats (*R. rattus)* (Burton *et al.* 2010). A Seabird Recovery Programme instigated by English Nature (now Natural England) in 2001 led to the island being declared rat-free in 2006, helping both Manx Shearwaters and Puffins to nest successfully (Appleton *et al*., 2006; Lock, 2006; Davis & Jones, 2007). Guilford *et al.* (2008) conducted GPS tracking of the foraging movements of Manx Shearwaters (*Puffinus puffinus)* breeding on Skomer Island, Wales.

Lundy is home to Short Snouted Seahorses and even though the actual sightings have been low in number, the habitat is perfect to support a reasonable population in this area (Neil Garrick-Maidment, *pers. comm.*).

Stakeholder narrative: Assumptions and Implications

Assumptions and implications have not explicitly been discussed for Lundy within the Working Groups, as the work has focussed on developing new rMCZs. The project team prepared some working assumptions and implications for the Steering Group meeting, based primarily on the network-level assumptions for seafloor protection areas. Steering Group members had an opportunity to comment, and the comments are integrated into the table below.

The fundamental assumption about human activities within MCZs is that activities can continue (under current licensing regimes where applicable), as long as they do not prevent the conservation objectives from being achieved. This assumption applies to all activities. The table below specifies in more detail what this is likely to mean within this particular MCZ.

Following that, table II.3.40f shows the vulnerability assessment (VA) snapshot for this site. The VA meetings took place at the end of the project, and they did not involve the Steering Group. They started to discuss site management, but did not reach any firm conclusions. The VA snapshot table reflects the point that the VA discussions had reached at the time of the last Joint Working Group meeting in May 2011. Many Steering Group members expressed concerns about the VA process and its outcomes (see section II.2.1 for full details).

Table II.3.41e Specific assumptions and implications relating to Lundy MCZ. Black text reflects the working assumptions and implications recorded throughout the planning discussions. The development of the narrative recorded in black can be traced back through the Working Group and Steering Group meeting reports from 2009 to 2011. Red and green text in the first column comments

on how the snapshot of the vulnerability assessment (VA) relates to each of the working assumptions that had been made as planning took place (refer to part I for a full explanation of the VA snapshot).

Activities assumed to not be allowed within the site	
Assumptions	**Implications**
Aggregate extraction will not be allowed Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o Aggregate dredging can only occur where the mineral resources are geologically located – in highly localised and discrete areas. If aggregate operations are not allowed in MCZs (subject to appropriate monitoring, mitigation and management), and MCZs coincide with aggregate resource, then this will have significant impact on national construction aggregate supply and coast defence. **Given this assumption, there are still the following concerns:** o If aggregate operations (subject to appropriate monitoring, mitigation and management) are restricted in areas adjacent to an MCZ, then this will have significant impact on national construction aggregate supply and coast defence.
Bottom-towed fishing gear will not be allowed (includes benthic trawling and hydraulic dredging) *The last bullet point under 'implications' may not be a problem if there is a limit on the amount of static gear used.* Commercial fishing was discussed at the VA meetings, and the only activity that was identified that needed excluding from the site was the removal of spiny lobster. Assume other activities can continue at current levels.	**Direct implications:** o Loss of ground for bottom-towed gear fishermen o Displacement of bottom-towed gear o Increased competition for fishing grounds o Reduced diversity and flexibility of fishing o Cumulative impact on bottom-towed gear fleet where protected areas are close together o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers. (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) o Potential safety implications derived from displacement from sheltered areas. o Potential environmental implications derived from concentrating effort in alternative grounds or due to new fishing ground searching activity.
Anchoring of large vessels will not be allowed (except in emergencies) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Some English Heritage boats are 'large' (over 24m) so this activity should be noted as occurring and not be prevented (see assumption below on anchoring in order to access heritage wrecks) o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.

Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	**Implications**
Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area. Commercial fishing was discussed at the VA meetings, and the only activity that was identified that needed excluding from the site was the removal of spiny lobster. Assume other activities can continue at current levels.	**Direct implications:** o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) **Given this assumption, there are still the following concerns:** o Static gear fishermen might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed o Local Group feedback states that this is a major potting area and restriction to potting activity would be financially restricting to a large part of the fishing population in the North Devon area.
The installation, operation and maintenance of renewable energy devices will be permitted *Based on SAP feedback the assumption cannot apply to all sites in the network, although it can apply to any given site on its own.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: - additional costs to the renewables industry, e.g. for licensing mitigation and monitoring - delays to renewables development - delays, lost revenue and additional costs associated with cable repair activity restrictions. o Attracting the funding (for development) may be harder in the first place as sites with MPA designations within them will be less attractive to potential investors. o Costs and delays associated with co-location of renewables in MCZs, could result in long term implications

	in terms of renewables deployment which could have serious implications for industry and Government in terms of loss of operational revenue and missing EU climate change targets. o Enforced co-location with MCZs would dramatically restrict deployment. **If the assumption turns out to be wrong:** o If co-location assumptions are not correct the impacts would/could be: site locations that can't be developed, increased costs (the implications could be re-routing of cables around a feature could cost an additional £600,000 - £1.3m/km depending on cable type, size and seabed geology), construction delays, failure to meet renewables targets, impacts on acidification, additional monitoring requirements, increased uncertainty and declining investor confidence in renewables activities. o Increased competition for sea space with other sea users. o Good wind resource, landscape buffer requirements making deployment less likely. o Medium term wave resource present. o Tidal resource present at north and south headlands.
Beach replenishment will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Aquaculture of fin fish and shell fish will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Crab tiling / bait digging will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Activities assumed to be allowed to continue / occur within the site	
Assumptions	**Implications**
The existing no-take zone will be kept in place unchanged. This was acknowledged at the VA meetings.	**Direct implications:** o
Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed **Benefits:** o Potential for increased and enhanced leisure and recreational activity
The installation and maintenance of cables will be permitted and will not be made prohibitively expensive within the site. This applies to power cables (including cables for renewable energy devices), and telecommunications cables.	**Direct implications:** o **Given this assumption there are still the following concerns:** o Cable installation cost increases and delay o Cable repair cost, delays and lost revenue could increase due to activity restrictions on cable repair.

Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	o There is no definition of what 'prohibitively expensive' means; the cables representative would like assurance that no additional cost will result from MCZ designation (beyond costs associated with existing management and mitigation requirements). **If the assumption turns out to be wrong:** o For renewables/power cables, re-routing of cables around a feature or site might mean longer cable routes, at a cost of £600,000 - £1.3 million/km depending on cable type, size and seabed geology. o There may be other costs, e.g. costs associated with licensing, mitigation measures and monitoring requirements. o Increased licensing requirements and costs of cabling may have serious implications for industry and Government in terms of loss of operational revenue, missing EU climate change targets etc. o Possible cable route to renewable resources.
The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Tourism and recreational activities will be permitted. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Maintenance dredging in ports (to enable access to ports) will be permitted *The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Some English Heritage boats are 'large' (over 24m) so this activity should be noted as occurring in this site and not be prevented. o There are two heritage wrecks within Lundy MCZ: Gull Rock Wreck (within the no-take zone, which is also a recommended reference area), and Iona II (about 160m east of the no-take zone).
Anchoring of small vessels will be permitted *There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o No clear working group definition exists of what counts as a 'small' vessel. 24m was proposed some time ago by the RYA, but no decision was reached as to whether we would adopt that size in MCZ planning.
Passage of ships will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Seaweed harvesting will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Table II.3.41f VA Snapshot table: This table records the point which the vulnerability assessment discussions had reached regarding site management, at the time of the final Joint Working Group meeting in May 2011. The outcome is not definitive, and the VA did not carry out an exhaustive review of all the working assumptions recorded in the longer table above. The Steering Group were not directly involved in the VA discussions, and at their final meeting, expressed considerable reservations about the VA outcome (see section II.2.1). The reason this VA snapshot table is included here is so that readers have a record of what the VA snapshot was showing at the time the final stakeholder comments were recorded for this site. For a full explanation of the VA snapshot, please refer to part I. The maps in appendix 13 show a visual representation of the information in all the VA snapshot tables in the rMCZ site reports.

Sector	Potential Management
Commercial Fishing	Management - Removal of *Palinurus elephas* (crawfish) not permitted from the MCZ Measures - Option 1: Voluntary - Option 2: Byelaw

Stakeholder narrative: Uncertainties and Additional Comments

Uncertainties

The most significant uncertainty faced by the project was the lack of knowledge on management of MCZs, and this uncertainty still applies to all rMCZs in the network. There was uncertainty over what activities will be affected by MCZ designations: what activities will be permitted to continue within (or near) MCZs, what activities will not be permitted, and what activities will require mitigation or some form of restriction other than a complete ban. There was also uncertainty over what measures will be taken to ensure any activity restrictions are put in place (e.g. byelaws, voluntary measures).

Additional comments

The following is a set of additional comments made by stakeholder representatives over the course of the planning work. Some of these comments were made specifically about this site, others were more generic comments which the project team consider to be relevant to this site.

- *Mobile bottom gear*
    - Seasonal closures are an inappropriate measure for benthic conservation.

- *Renewables*
    - Existing SAC, possibly limiting tidal stream deployment. Tidal resource extends beyond SAC.

- *Seabirds and cetaceans*
    - Codes of practice may be a better way to achieve management of leisure boats (if necessary) than byelaws.
    - The conservation sector had proposed an extension to this MCZ for loafing birds assuming a restriction to fast moving vessels. The RSPB values these sites for breeding bird populations. It was agreed not to extend the existing MCZ but recognise this as an important sea bird colony and to suggest if future monitoring shows a threat and there is a known problem at this location then this needs to be addressed in any review. Monitoring of disturbance and any by-catch issues and annual productivity monitoring to determine that no deterioration in/ loss of conservation status of the species making up the assemblage using the site (Manx Shearwater, Guillemot, Razorbill, Puffin) due to death, injury or disturbance. Mitigation measures would be required if there was a decline in species numbers due to activities within the MCZ (e.g. disturbance from recreational activities, bycatch from fishing activity, built developments, pollution). Healthy populations of these species would suggest a healthy ecosystem within the site and would be an attraction for the general public and ecotourism.

- *General benefits of MCZs*
    - Some stakeholder representatives would like the following recorded and for these to be considered during the impact assessment:
        - Fisheries spill-over.
        - Improvements for the local economy.
        - Education opportunities.
        - Benefits to science.
        - Focus for voluntary groups.
        - Potential increase in the amount and quality of recreational activities (diving, sea angling, environmental tourism, etc).
        - The designation as an MCZ will be a selling point and will undoubtedly be used as an identifier to the area to highlight it as somewhere to visit.

- *Monitoring*
    - There are two main types of monitoring which will need to take place within rMCZs:
        - Monitoring the activities within a site and the various levels at which they are occurring.
        - Monitoring the ENG features for changes in condition.

- *Reaction to the vulnerability assessment process and outcomes*
    - At the sixth Joint Working Group meeting in June 2011, the results from the regional vulnerability assessment (VA) discussions were presented to the group, as shown in table II.3.41f (the VA process is described in part I). This generated concern within the JWG, for two reasons. Firstly, several members of the group had serious misgivings over the outcome of the management discussions, especially with respect to those inshore rMCZs (including this one) for which no management of bottom-

towed mobile fishing gear was highlighted as necessary. Secondly, the group had serious misgivings about the process itself, from which they felt disenfranchised.

- The Steering Group made a statement at their final meeting, articulating those concerns in more detail. They recommended that there should be a process that allows them to review potential management measures for MCZs, before public consultation. The full statement made by the Steering Group is in section II.2.1.

Levels of support

This site is already designated. It was not planned through the stakeholder process. The narrative above gives an indication of the concerns / support that stakeholders have voiced about the site.

Supporting documentation

GIS data used for reporting the quantitative habitat and species figures in the tables above includes the following sources: UKSeaMap modelled broad-scale habitat data, MESH, MB102, and Seasearch 2009. Refer to appendix 8 for details, and to the tables above for data sources for specific features in this site. Further information on the Natura 2000 sites to which this site is related may be found on the JNCC's website[47].

Further evidence underpinning the site can be found in the publications and datasets referred to in the detailed site description. There may be additional information relevant to this MCZ in Dalrymple (2008), Hiscock *et al.* (1973), and Wheatley & Saunders (2010). Multibeam survey of the seabed around Lundy has been carried out, details may be available from Natural England. Information and data on seabirds from the area of the rMCZ can be obtained from the RSPB.

The North Devon Biosphere Reserve Marine Working Group has supplied additional information that is relevant to this site. This information includes a detailed description of the site, details of the species and habitats present, and recommendations for the management of the site. These recommendations have been included in their entirety in the additional materials supplied with this final report.

Site map series

On the following pages there are four maps of this site.

- The first map (FR_055a) is the main site map showing the MCZ boundary and includes lat/lon points with coordinates (in WGS84 UTM30N). The map also shows charted depth and existing Marine Protected Areas for reference. Please note: the lat/long coordinates of the vertices in the following maps have been calculated in decimal degrees, and in degrees, minutes and seconds. For plotting on a standard Admiralty (UKHO) chart, the seconds of each coordinate need to be converted to decimal. An MS Excel table showing all coordinates in degrees, minutes and decimal seconds has been provided in the additional materials section (see Appendix 14) for plotting purposes.
- The second map (FR_055b) shows the MCZ boundary over broad-scale habitats. The data shown on this map corresponds with the information in table II.3.41b, data sources are indicated in the table.
- The third map (FR_055c) shows records of habitat and species FOCI. The data shown on this map corresponds with the information in tables II.3.41b, II.3.41c and II.3.41d, data sources

[47] http://jncc.defra.gov.uk/page-4

are indicated in the tables. In most site reports, broad-scale habitats and FOCI are shown on the same map, but because of the large number of FOCI records at Lundy, they have been separated in for this site.

- The fourth map (FR_55d) shows socio-economic datasets. For spatial data showing the distribution of fishing effort, please refer to the interactive PDF maps supplied with the additional materials (see appendix 14).
- Because of the large number of features shown on the site maps (especially inshore biophysical maps), it has not been possible to embed comprehensive legends within the site maps themselves. A comprehensive map legend is therefore provided in appendix 7, which explains the symbology used on all the maps within this final report.
- Appendix 8 describes the data sources for the information shown on the final report maps in detail.

Map: FR_055a

Version:30Aug11

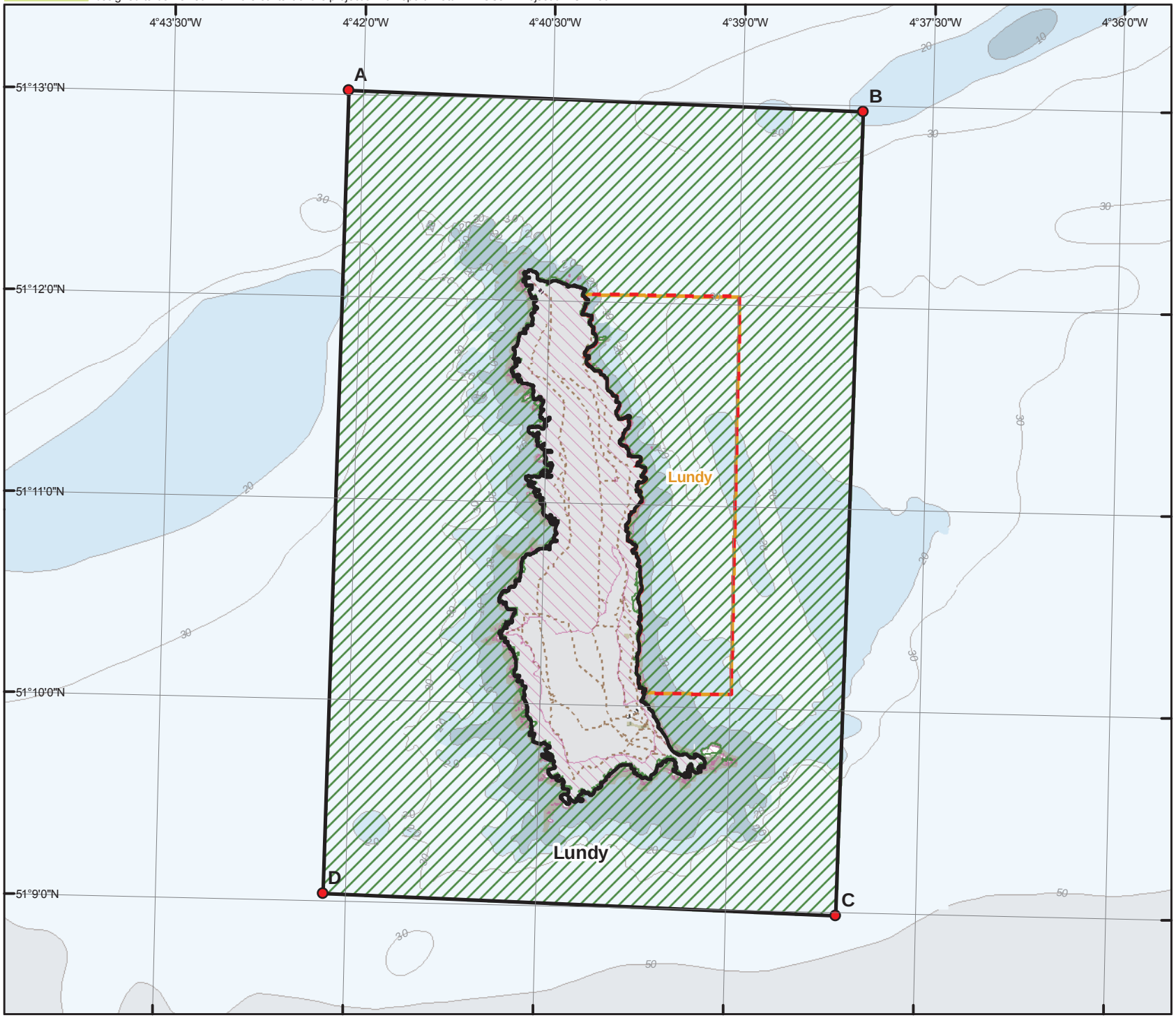
Lundy MCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 0.5 1 2 km

N

FINDING SANCTUARY



Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	51.2170	-4.7020	51° 13' 1" N	4° 42' 7" W
B	51.2162	-4.6342	51° 12' 58" N	4° 38' 3" W
C	51.1497	-4.6355	51° 8' 58" N	4° 38' 7" W
D	51.1506	-4.7029	51° 9' 2" N	4° 42' 10" W

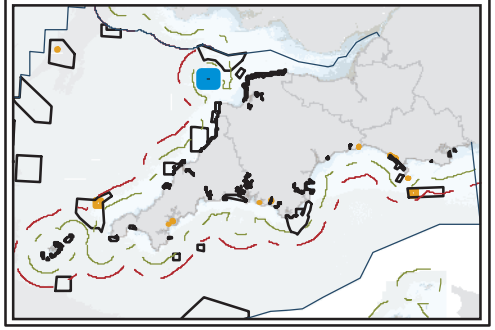
Map Legend

- MCZ
- Recommended reference area

Existing MPAs

- SAC
- Lundy NTZ
- SSSI (not part of MPA network)

A comprehensive legend is provided in the appendices of the Finding Sanctuary final report.



Map: FR_055b

Version:30Aug11

Lundy MCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with broad scale habitat information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 0.5 1 2 km

N

FINDING SANCTUARY

4°45'0"W 4°43'30"W 4°42'0"W 4°40'30"W 4°39'0"W 4°37'30"W 4°36'0"W 4°34'30"W

51°13'0"N

51°12'0"N

51°11'0"N

51°10'0"N

51°9'0"N

Lundy

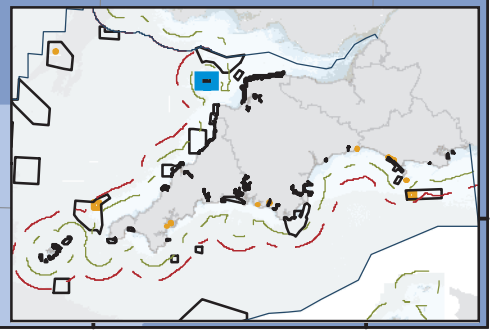
Lundy

Map Legend

MCZ

Recommended reference area

These maps contain data from the following sources: Defra contracts MB102/MB106, the JNCC and Natural England, the Environment Agency, Wildlife NGOs and local records centres. Full details and a comprehensive legend are provided in the appendices of the Finding Sanctuary final report.



Map: FR_055c

Version:30Aug11

Lundy MCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with FOCI information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 0.5 1 2 km

N

FINDING SANCTUARY

4°45'0"W 4°43'30"W 4°42'0"W 4°40'30"W 4°39'0"W 4°37'30"W 4°36'0"W 4°34'30"W

51°13'0"N 51°12'0"N 51°11'0"N 51°10'0"N 51°9'0"N

Lundy

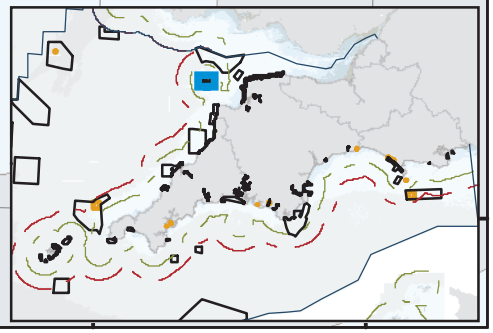
Lundy

Map Legend

MCZ

Recommended reference area

These maps contain data from the following sources: Defra contracts MB102/MB106, the JNCC and Natural England, the Environment Agency, Wildlife NGOs and local records centres. Full details and a comprehensive legend are provided in the appendices of the Finding Sanctuary final report.



Map: FR_055d

Version:5Sep11

Lundy MCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with socio-economic information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 0.5 1 2 km

N

FINDING SANCTUARY

4°43'30"W 4°42'0"W 4°40'30"W 4°39'0"W 4°37'30"W 4°36'0"W 4°34'30"W 4°33'0"W

51°13'0"N 51°12'0"N 51°11'0"N 51°10'0"N 51°9'0"N

A B C D

Lundy

Gull Rock Wreck

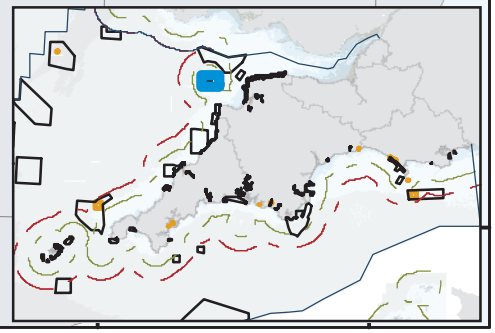
Iona II

Lundy

Map Legend

- MCZ (MCZ)
- Recommended reference area
- NDFA Ray Box
- Trawling and netting prohibition
- Anchorages, berths & docks
- Protected wreck (archaeological site)
- Protected wreck exclusion zone
- Charted wrecks
- Consented discharge
- Power and telecommunications cables (KISCA)

This map series contains data from a variety of sources including the UKHO, the Environment Agency, and The Crown Estate. A full list and a comprehensive legend can be found in the appendices of the Finding Sanctuary final report.



II.3.42 Taw Torridge Estuary rMCZ

Basic site information

This site consists of two component parts. The centroid lat/long is a centroid calculated for a two-part site polygon.

***Site centre location (datum used: ETRS89)*:**

Decimal Degrees		**Degrees Minutes Seconds**	
Lat	**Long**	**Lat**	**Long**
51.0722	-4.1188	51° 4' 19'' N	4° 7' 7'' W

This rMCZ occupies two distinct sites; the site centroid therefore falls outside the rMCZ boundary.

Site surface area: 5 km^2 (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea
OSPAR region: Region III: Celtic Waters

Site boundary: The site consists of two spatially separate parts, the upper Taw Estuary and the upper Torridge Estuary. In the Torridge, the rMCZ boundary follows the OS Boundary Line mean high water mark as far inland as the normal tidal limit at Weare Giffard, and the lower boundary is drawn across the estuary at the old bridge (Bideford Long Bridge) at Bideford. The upper Taw Estuary is included up to mean high water and the normal tidal limit at Tawstock, upstream of Barnstaple. The lower boundary is drawn across the estuary at Allen's Rock (Fremington) and Chivenor, downstream of Barnstaple.

***Sites to which site is related**:* In the Taw, the site overlaps with the Taw Torridge Estuary SSSI, in the Torridge, the rMCZ boundary starts where the SSSI ends (at the old bridge).

Maps of the site are included at the end of this site report. The main site map shows points with coordinates along the site boundary (in WGS84 UTM30N).

Features proposed for designation within Taw Torridge Estuary

Table II.3.42a Draft conservation objectives for the Taw Torridge Estuary rMCZ. M = maintain in favourable condition, R = recover to favourable condition. This is an extract of the conservation objective summary tables in section II.2.6. ***The full text of the draft conservation objectives can be found in appendix 15****.*

Broad-scale habitats	Subtidal mud		**M**
	Subtidal sand		**M**
	Coastal saltmarshes and saline reedbeds		**M**
	Intertidal coarse sediment		**M**
	Intertidal sand and muddy sand		**M**
	Low energy intertidal rock		**M**
Species FOCI	*Anguilla anguilla*	European eel	**? M / R** [1]

[1]At the time of the vulnerability assessment meetings, no decision was taken whether the conservation objective for this feature should be 'maintain' or 'recover'. No quantitative information is included for this mobile FOCI species in the tables below, as the GIS data available was too coarse resolution to be meaningful. However, the species has been included in the draft conservation objectives on the basis of evidence provided to the project by the Environment Agency (see appendix 8).

The following tables show ENG-related statistics for this site, reported from spatial data available in Finding Sanctuary's GIS datasets. Greyed out rows indicate features for which GIS data exists within the site boundary, but which have not been included on the list of draft conservation objectives (the reasons are stated in table footnotes). The figures are presented for the site as a whole, not the two areas separately. Any feature present in both parts is counted as a single replicate for the network-level statistics in section II.2.8.

Table II.3.42b ***Subtidal broad-scale habitats*** *recorded in this rMCZ, based on an analysis of Finding Sanctuary's EUNIS level 3 broad-scale habitat GIS data (see appendix 8). Data sources: 1 - UKSeaMap, 2 - MESH, 3 - Environment Agency.*

Habitat	Area covered within rMCZ (km^2)	% of total in study area	Source(s)
Subtidal sand	<0.01	<0.1%	1
Subtidal mud	0.68	<0.1%	1
Subtidal mud[1]	<0.01	<0.1%	1

[1] Features / areas already protected within an overlapping MPA. See appendix 11 for details.

*Table II.3.42c **Intertidal broad-scale habitats** recorded in this rMCZ, based on an analysis of Finding Sanctuary's EUNIS level 3 broad-scale habitat GIS data (see appendix 8). Data sources: 2 - MESH, 3 - Environment Agency, 4 – MB102.*

Habitat	Area covered within rMCZ (km^2)	% of total in study area	Source(s)
Low energy intertidal rock	0.02	0.5%	4
Intertidal coarse sediments	<0.01	<0.1%	3
Intertidal sand and muddy sand	0.14	1.2%	4
Coastal saltmarshes and saline reedbeds	0.08	2.6%	3
Intertidal mud[1]	3.08	1.8%	4, 3
Coastal saltmarshes and saline reedbeds[1]	0.17	5.4%	3
Intertidal mud[2]	0.42	0.2%	4, 3

[1] Features / areas already protected within an overlapping MPA. See appendix 11 for details.

[2] This habitat was not discussed at the vulnerability assessment meetings for this rMCZ, which may have been an oversight – the habitat is protected within the Taw Torridge SSSI, but the SSSI does not cover the whole rMCZ. As a general rule, all broad-scale habitats within rMCZs have a draft conservation objective, unless the whole area of habitat within the site is already protected. Therefore, this feature ought to be added to the conservation objective list. The full extent of this habitat within the rMCZ boundaries has been included in the overall network statistics in part II.2.8.

For additional understanding on how this site is located in relation to environmental data layers, including areas of high benthic biodiversity, offshore bird aggregation areas, or areas of seasonal sea surface temperature fronts, please refer to the interactive PDF maps presented alongside this report.

Site summary

The Taw Estuary drains an area of 1211 km^2 (Environment Agency, 2000) and forms, together with the Torridge Estuary, a twin estuarine system that discharges into the Bristol Channel. The Taw Estuary is 23 km in length, extending from its tidal limit at Newbridge to its mouth. The estuary is macro-tidal (tidal range >4 m) with a tidal range at the mouth during spring tides of ca. 7 m and 6.5 m during neaps. Further up the estuary, at Barnstaple, the tidal range is ca. 4m during springs and can be <1 m during neaps (Maier *et al*., 2009). The estuaries of the Taw and Torridge rivers together with the sand dune systems at Braunton Burrows and Northam Burrows, and the grazing marshes at Braunton are all key habitats in the area supporting many key species. One of the reasons for the inclusion of this and other estuarine rMCZs in the network was in recognition of the added ecological importance of estuaries in terms of productivity, and their ecological function as nursery areas.

Detailed site description

The Taw and Torridge Estuaries were surveyed by the FSC during the survey of Harbours, Rias and Estuaries in Southern Britain (Little, 1989). Shores in the lower estuary were considered very good examples of moderately exposed broken rocky shores colonised by a wide variety of algae and animals, particularly in the rockpools (Davies, 1998). Areas of sublittoral seabed were restricted to narrow current-swept channels with some extensive hard substrata including bedrock, cobbles and shell or pebbles in gravel colonised especially by hydroids, sponges, sea anemones, erect bryozoans, barnacles and mussels. Sublittoral sediments had a restricted fauna of species characteristic of

disturbed conditions, including the worms *Nephtys cirrosa* and *Lanice conchilega* and the amphipods *Haustorius arenarius* and *Bathyporeia sarsi* (Davies, 1998). The brackish water amphipod *Gammarus chevreuxi* has been noted from sediments and saltmarsh in the Taw-Torridge Estuary (McDouall, 2006). Burd (1989) also surveyed the Taw and Torridge during the Saltmarsh survey of Great Britain.

The estuaries 'support a variety of soft and hard substrate-based aquatic estuarine communities, which includes rocky outcrops and sea-walls with algal growths and mussel beds, and a reef of *Sabellaria alveolata'* (Buck, 1993). A large proportion of the estuary is intertidal flats and gravel beds, and sandy with areas of shingle towards the mouth at the foreshore. In the narrow Torridge the intertidal flats are predominantly mud-and-sand, while in the Taw there are extensive mudflats and sandbanks which support many marine worms and other invertebrates (Buck, 1993). Well mixed, the sands contain modern skeletal debris of consistent composition, which persists up to 18 km landward from the mouth of the Taw estuary. Although primarily a molluscan sand, remains of barnacles, bryozoans, echinoids, foraminifera, sponge spicules, decapods and coralline algae are common (Merefield, 1982).

The main freshwater inflow to the estuary is from the River Taw (Maier *et al*., 2009). There are also large areas of saltmarsh around Yelland and Penhill which show typical zonation of saltmarsh vegetation. Braunton Burrows at the north of the estuary is one of the largest dune systems on Britain, reaching 30 m in places (Buck, 1993). Williams & Newman (2006) assessed eutrophication in the River Taw catchment.

The Taw and Torridge estuaries are important nursery areas for sea Bass. Reynolds *et al.* (2003) sampled the low water pools in upper estuary *Spartina* marsh and at high water at Trewornan Dam and creek sampling for Bass. Luoma & Bryan (1978) also collected sediment samples from the oxidized surface layer of intertidal sediments.

Although there have only been a few sightings of the Short Snouted Seahorse in this region, there is no reason to suspect that there is not a reasonable population living here. For breeding purposes, there needs to be an existing population and divers have spotted them for a number of years. Most of the sightings have been anecdotal but there is no reason to doubt them (Neil Garrick-Maidment, *pers. comm*.).

Stakeholder narrative: Assumptions and Implications

As explained in part I, the stakeholder narrative is a vital underpinning of the site recommendations. Working assumptions and implications are presented here, and additional comments are presented in the following section.

The following fundamental assumption was recorded to apply to all activities in all sites: **The fundamental assumption about human activities within MCZs is that activities can continue (under current licensing regimes where applicable), as long as they do not prevent the conservation objectives from being achieved.** This assumption applies to all activities.

Table II.3.42d shows more specific working assumptions and implications that were recorded for this site over the course of the planning process. This site was a relatively late addition to the network (it was added after the third progress report). Most of the detailed work on recording assumptions and implications for the sites within the developing network configuration had already taken place before this site was added. Therefore, some of the content of table II.3.42d is based on what had previously been recorded for other sites in the network, based on assumptions that were implicit in

the discussions over whether the site should be added to the network or not. Many of the assumptions and implications highlighted for this site are generic, and will apply to other rMCZs in the network as well. Site-specific comments from the later planning meetings (when the site was within the network) have also been added to the table.

Following that, table II.3.42e shows the vulnerability assessment (VA) snapshot for this site. The VA meetings took place at the end of the project, and they did not involve the Steering Group. They started to discuss site management, but did not reach any firm conclusions. The VA snapshot table reflects the point that the VA discussions had reached at the time of the last Joint Working Group meeting in May 2011. Many Steering Group members expressed concerns about the VA process and its outcomes (see section II.2.1 for full details).

Table II.3.42d Specific assumptions and implications relating to Taw Torridge Estuary rMCZ. Black text reflects the working assumptions and implications recorded throughout the planning discussions. The development of the narrative recorded in black can be traced back through the Working Group and Steering Group meeting reports from 2009 to 2011. Red and green text in the first column comments on how the snapshot of the vulnerability assessment (VA) relates to each of the working assumptions that had been made as planning took place (refer to part Ifor a full explanation of the VA snapshot).

Activities assumed to not be allowed within the site	
Assumptions	**Implications**
Aggregate extraction will not be allowed Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings.	**Direct implications:** o Aggregate dredging can only occur where the mineral resources are geologically located – in highly localised and discrete areas. If aggregate operations are not allowed in MCZs (subject to appropriate monitoring, mitigation and management), and MCZs coincide with aggregate resource, then this will have significant impact on national construction aggregate supply and coast defence. **Given this assumption, there are still the following concerns:** o If aggregate operations (subject to appropriate monitoring, mitigation and management) are restricted in areas adjacent to an MCZ, then this will have significant impact on national construction aggregate supply and coast defence.
Bottom-towed fishing gear will not be allowed (includes benthic trawling and hydraulic dredging) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings.	**Direct implications:** o Loss of ground for bottom-towed gear fishermen *(may not be relevant in this area.)* o Displacement of bottom-towed gear o Increased competition for fishing grounds o Reduced diversity and flexibility of fishing o Cumulative impact on bottom-towed gear fleet where protected areas are close together o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers. (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that

	the comment is unrealistic.) o Potential safety implications derived from displacement from sheltered areas. o Potential environmental implications derived from concentrating effort in alternative grounds or due to new fishing ground searching activity.
Anchoring of large vessels will not be allowed (except in emergencies) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Netting and longlining will not be allowed *This assumption was recorded early on in the process, in order to protect nursery habitats and juveniles in all sites with draft conservation objectives for mobile FOCI. Stakeholder feedback has indicated that the assumption about longlining is inappropriate, as the activity does not happen inshore. An uncertainty remains around netting, where the activity may have an impact on nursery habitat - this uncertainty was not resolved through the VA* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o Loss of ground for netters o Displacement of netters o Increased competition for fishing grounds o Reduced diversity and flexibility of fishing o Cumulative impact on netters where protected areas are close together **Given this assumption, there are still the following concerns:** o SAFFA fixed net restrictions apply.

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site: none highlighted during the VA meetings.	
Assumptions	**Implications**
Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) **Given this assumption, there are still the following concerns:** o Static gear fishermen might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed
The installation, operation and maintenance of renewable energy devices will be permitted *Based on SAP feedback the assumption cannot apply to all sites in the network, although it can apply to any given site on its own.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: - additional costs to the renewables industry, e.g. for licensing mitigation and monitoring - delays to renewables development - delays, lost revenue and additional costs associated with cable repair activity restrictions o Costs and delays associated with co-location of renewables in MCZs, could result in long term implications in terms of renewables deployment which could have serious implications for industry and Government in terms of loss of operational revenue and missing EU climate change targets. o Enforced co-location with MCZs would dramatically restrict deployment. **If the assumption turns out to be wrong:** o If co-location assumptions are not correct the impacts would/could be: site locations that can't be developed, increased costs (the implications could be re-routing of cables around a feature could cost an additional £600,000 - £1.3m/km depending on cable type, size and seabed geology), construction delays, failure to meet renewables targets, impacts on acidification, additional monitoring requirements, increased uncertainty and declining investor confidence in renewables activities. o Increased competition for sea space with other sea users.

	o The rMCZ is located upstream of Appledore and Yelland which could be important to renewables development/operation.
Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Aquaculture of fin fish and shell fish will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Crab tiling / bait digging will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o A steering group member stated that this activity does take place within this site. o A steering group member suggested that there should be bait digging and crab tiling restrictions on the intertidal habitats of this site.
Beach replenishment will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o A Steering Group member commented on the importance of taking into account shoreline management plan policies and planned activities.

Activities assumed to be allowed to continue / occur within the site	
Assumptions	**Implications**
Handlining (recreational angling and commercial handlining) will be permitted Handlining includes sea angling and trolling. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed **Benefits:** o Potential for increased and enhanced leisure and recreational activity
Pelagic trawls will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
The installation and maintenance of cables will be permitted and will not be made prohibitively expensive within the site. This applies to power cables (including cables for renewable energy devices), and telecommunications cables. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption there are still the following concerns:** o Cable installation cost increases and delay o Cable repair cost, delays and lost revenue could increase due to activity restrictions on cable repair. o There is no definition of what 'prohibitively expensive' means; the cables representative would like assurance that no additional cost will result from MCZ designation (beyond costs associated with existing management and mitigation requirements). **If the assumption turns out to be wrong:** o For renewables/power cables, re-routing of cables around a feature or site might mean longer cable routes, at a cost of £600,000 - £1.3 million/km depending on cable type, size and seabed geology. o There may be other costs, e.g. costs associated with licensing, mitigation measures and monitoring requirements. o Increased licensing requirements and costs of cabling may have serious implications for industry and Government in terms of loss of operational revenue, missing EU climate change targets etc.

The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **If the assumption turns out to be wrong:** o Four active power cables, three active unknown cables.
Tourism and recreational activities will be permitted. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Maintenance dredging in ports (to enable access to ports) will be permitted *The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o (No heritage wrecks currently present in the site)
Anchoring of small vessels will be permitted *There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not	**Direct implications:** o **Given this assumption, there are still the following concerns:** o No clear working group definition exists of what counts as a 'small' vessel. 24m was proposed some time ago by the RYA, but no decision was reached as to whether we would adopt that size in MCZ planning.

considered during the VA meetings	
Passage of ships will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Seaweed harvesting will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Table II.3.42e VA Snapshot table: This table records the point which the vulnerability assessment discussions had reached regarding site management, at the time of the final Joint Working Group meeting in May 2011. The outcome is not definitive, and the VA did not carry out an exhaustive review of all the working assumptions recorded in the longer table above. The Steering Group were not directly involved in the VA discussions, and at their final meeting, expressed considerable reservations about the VA outcome (see section II.2.1). The reason this VA snapshot table is included here is so that readers have a record of what the VA snapshot was showing at the time the final stakeholder comments were recorded for this site. For a full explanation of the VA snapshot, please refer to part I. The maps in appendix 13 show a visual representation of the information in all the VA snapshot tables in the rMCZ site reports.

Sector	Potential Management
n/a	n/a

Stakeholder narrative: Uncertainties and Additional Comments

Uncertainties

The most significant uncertainty faced by the project was the lack of knowledge on management of MCZs, and this uncertainty still applies to all rMCZs in the network. There was uncertainty over what activities will be affected by MCZ designations: what activities will be permitted to continue within (or near) MCZs, what activities will not be permitted, and what activities will require mitigation or some form of restriction other than a complete ban. There was also uncertainty over what measures will be taken to ensure any activity restrictions are put in place (e.g. byelaws, voluntary measures).

The following is a set of additional uncertainties relevant to this site:

- There may be issues surrounding capital dredging especially for the Atlantic Array development.

Additional comments

The following is a set of additional comments made by stakeholder representatives over the course of the planning work. Some of these comments were made specifically about this site; others were more generic comments which the project team consider to be relevant to this site.

- *Commercial fishing*
    - Commercial fishing raised concerns that estuaries are surplus to the requirement of the ENG.

- *Commercial dredging*
    - Possible issues were highlighted around the capital dredging that happens in the estuary and it was agreed to propose a zone in the rMCZ where the already planned capital dredging can occur. As the rMCZ is above Yelland and Appledore where renewables developments are planned, and early in the process a network level assumption was made that maintenance dredging is allowed to continue, the requirement for a zone was not needed. This proposal was agreed to by the renewables sector as long as the area for planned development is avoided.

- *Environment Agency*
    - Suggest using existing estuarine partnership agreements (if already in place) as basis for protection measures.
    - The Environment Agency has provided data on the fish nursery function of the Taw/Torridge estuary and the importance of the supporting FOCI habitat of mudflat and saltmarsh.
    - Suggest no unlicensed netting activities & some protection from excessive crab tiling/bait digging causing disturbance of intertidal habitat. Again, we would suggest using the existing estuarine partnership agreements.
    - Taw/Torridge Estuary is a surveillance water body for Water Framework Directive.

- *English Heritage*
    - Taw Torridge Estuary rMCZ: Over time, pottery is exposed within the estuary and English Heritage undertakes the excavation of these pieces.

- *The Wildlife Trusts*
    - Excluding lower estuary areas from MCZ limits ecological value.

- *Netting and longlining*
    - When the detailed assumptions were drafted for rMCZs in the network during the third planning iteration, all sites with 'water column protection' had an assumption that 'netting and longlining will not be allowed'. This applied to all sites considered for the protection of seabirds, cetaceans, or any of the three mobile FOCI listed in the ENG – smelt, undulate ray and European eel. Longlining does not occur in inshore sites in the region, and feedback from stakeholders was that the longlining assumption is not appropriate for any site. For sites that still have draft conservation objectives for seabirds or cetaceans in the final recommendations, the netting / longlining assumption has been superseded by the fact that the stakeholder group agreed on a different set of assumptions for these features (largely around the need for monitoring, and some possible voluntary codes of conduct, but no fishing restrictions). However, for sites that have draft conservation objectives for mobile FOCI, an uncertainty remains with respect to netting, where it may have an impact

on nursery habitats or juvenile FOCI. This particular rMCZ was added to the network in the final planning stages, after the detailed work on developing assumptions had already happened, but given that the site has a draft conservation objective for *Anguilla anguilla*, European eel, the uncertainty around netting applies.

- *Generic implications for ports (applicable to all rMCZs where port jurisdictions and activities overlap with the site, or are adjacent to the site)*
    - Harbour Revision Orders, General Directions, Pilotage Directions etc.
    - Ports and harbours are limited to their jurisdiction.
    - Ability of port to comply with legal responsibilities e.g. Oil Spill Response Planning etc.
    - Administration, resource on and off the water, legal and technical specialists. requirements associated with additional management and legal responsibilities should co-location be pursued.
    - Additional time and cost triggered by all of the above both to the port.
    - Implications on other industries using the port or who wish to use the port in the future.
    - Existing management practices on and off water e.g. vessel and activity management, speed, timing restrictions etc.
    - Existing emergency response – weather, pollution, security.
    - Dredging to ensure maintenance of safe navigable depths.
    - Berthing, mooring & anchoring or small & large vessels.
    - Ship building, maintenance, refurbishment & repair
    - Maintenance, refurbishment & repair of port and harbour infrastructure.
    - New port and harbour infrastructure.
    - Access & egress to and from harbour.
    - Recreational activities within harbour.
    - Ship access and egress to and from berths.
    - Significance of timescales, delays and cost to management practices.

- *General benefits of MCZs*
    - Some stakeholder representatives would like the following recorded and for these to be considered during the impact assessment:
        - Fisheries spill-over.
        - Improvements for the local economy.
        - Education opportunities.
        - Benefits to science.
        - Focus for voluntary groups.
        - Potential increase in the amount and quality of recreational activities (diving, sea angling, environmental tourism, etc).
        - The designation as an MCZ will be a selling point and will undoubtedly be used as an identifier to the area to highlight it as somewhere to visit.

- *Monitoring*
    - There are two main types of monitoring which will need to take place within rMCZs:
        - Monitoring the activities within a site and the various levels at which they are occurring.
        - Monitoring the ENG features for changes in condition.

- *Reaction to the vulnerability assessment process and outcomes*
    - At the sixth Joint Working Group meeting in June 2011, the results from the regional vulnerability assessment (VA) discussions were presented to the group, as shown in table II.3.42e (the VA process is described in part I). This generated concern within the JWG, for two reasons. Firstly, several members of the group had serious misgivings over the outcome of the management discussions, especially with respect to those inshore rMCZs (including this one) for which no management of bottom-towed mobile fishing gear was highlighted as necessary. Secondly, the group had serious misgivings about the process itself, from which they felt disenfranchised.
    - The Steering Group made a statement at their final meeting, articulating those concerns in more detail. They recommended that there should be a process that allows them to review potential management measures for MCZs, before public consultation. The full statement made by the Steering Group is in section II.1.2.

Levels of support

The network report (section II.2) includes a project team reflection on levels of support for the network recommendations as a whole, and the site specific reflection presented here should be read within the wider network context.

There is a great deal of support for this site from local stakeholders on the North Devon Biosphere Reserve Marine Working Group (www.northdevonbiosphere.org.uk) who worked on sites in North Devon on behalf of the Devon Local Group.

The Environment Agency are in support of this site, as they are of other estuarine rMCZs. The MOD highlighted that amphibious vehicles are landed within the estuary, and are supportive as long as that activity can continue.

Supporting documentation

GIS data used for reporting the quantitative habitat and species figures in the tables above includes the following sources: UKSeaMap modelled broad-scale habitat data, MB102, and Environment Agency intertidal habitat data. Refer to appendix 8 for details, and to the tables above for data sources for specific features in this site.

Further evidence underpinning the site can be found in the publications and datasets referred to in the detailed site description.

The North Devon Biosphere Reserve Marine Working Group has supplied additional information that is relevant to this site. This information includes a detailed description of the site, details of the species and habitats present, and recommendations for the management of the site if designated as an MCZ. These recommendations have been included in their entirety in the additional materials supplied with this final report.

Site map series

On the following pages there are three maps of this site.

- The first map (FR_056a) is the main site map showing the rMCZ boundary and includes points with coordinates (in WGS84 UTM30N). The map also shows charted depth and existing Marine Protected Areas for reference. Please note: the lat/long coordinates of the vertices in the following maps have been calculated in decimal degrees, and in degrees, minutes and seconds. For plotting on a standard Admiralty (UKHO) chart, the seconds of each coordinate need to be converted to decimal. An MS Excel table showing all coordinates in degrees, minutes and decimal seconds has been provided in the additional materials section (see Appendix 14) for plotting purposes.
- The second map (FR_056b) shows the rMCZ boundary over broad-scale habitats, and records of habitat and species FOCI. The data shown on this map corresponds with the information in tables II.3.42b and II.3.42c, data sources are indicated in the tables.
- The third map (FR_056c) shows socio-economic datasets. For spatial data showing the distribution of fishing effort, please refer to the interactive PDF maps supplied with the additional materials (see appendix 14).
- Because of the large number of features shown on the site maps (especially inshore biophysical maps), it has not been possible to embed comprehensive legends within the site maps themselves. A comprehensive map legend is therefore provided in appendix 7, which explains the symbology used on all the maps within this final report.
- Appendix 8 describes the data sources for the information shown on the final report maps in detail.

Map: FR_056a

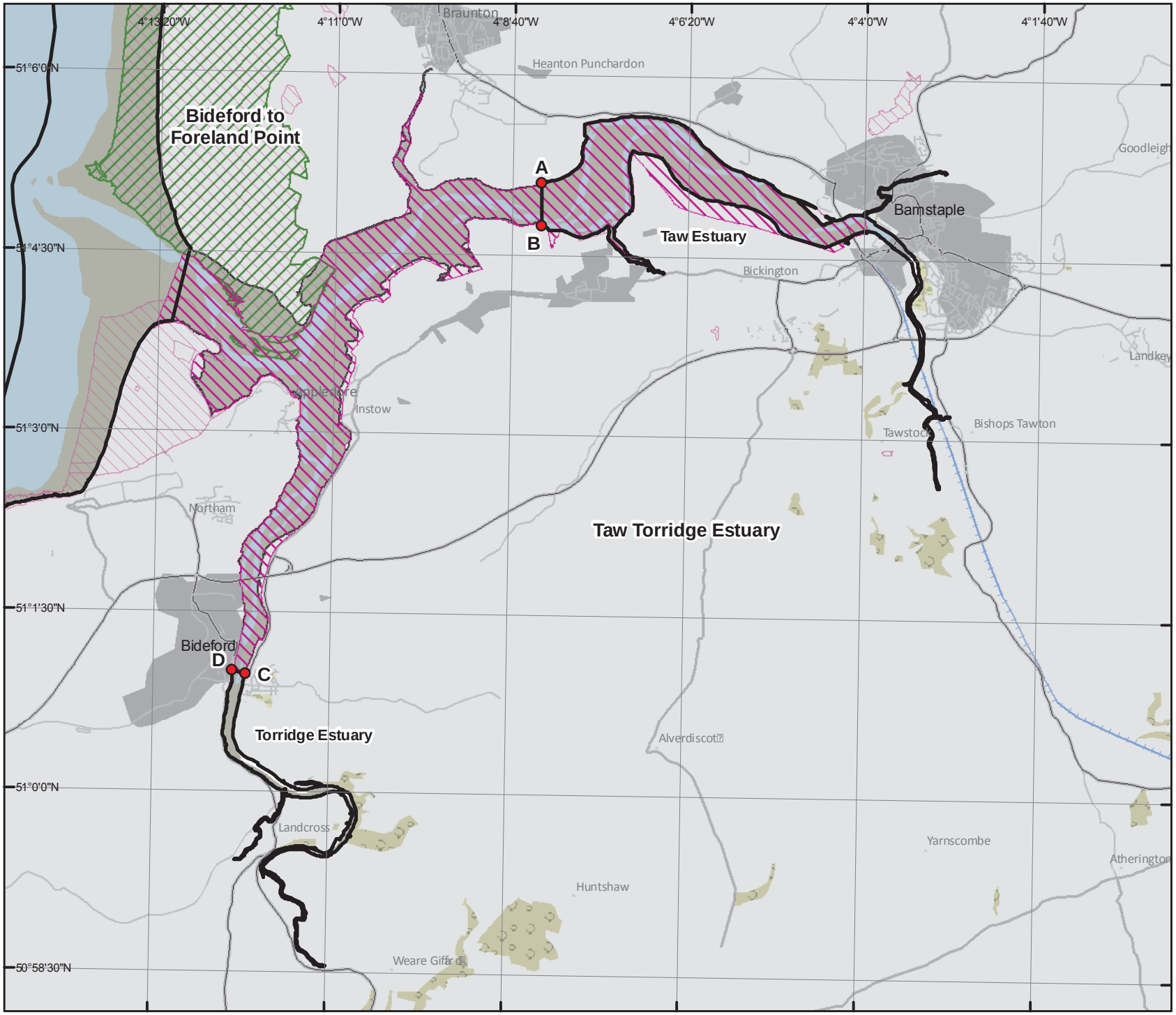
Version:31Aug11

Taw Torridge Estuary rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 1 2 4 km N

FINDING SANCTUARY



Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	51.0851	-4.1380	51° 5' 6" N	4° 8' 16" W
B	51.0792	-4.1381	51° 4' 45" N	4° 8' 16" W
C	51.0163	-4.2019	51° 0' 58" N	4° 12' 6" W
D	51.0168	-4.2046	51° 1' 0" N	4° 12' 16" W

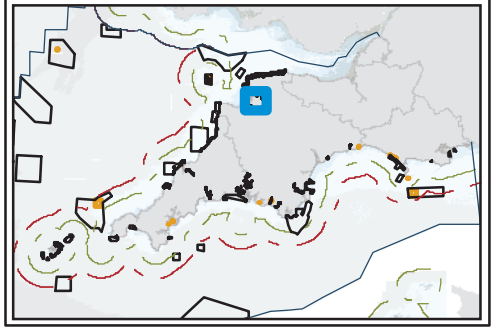
Map Legend

- Recommended MCZ (rMCZ)

Existing MPAs

- SAC
- SSSI (part of MPA network)
- SSSI (not part of MPA network)

A comprehensive legend is provided in the appendices of the Finding Sanctuary final report.



Map: FR_056b

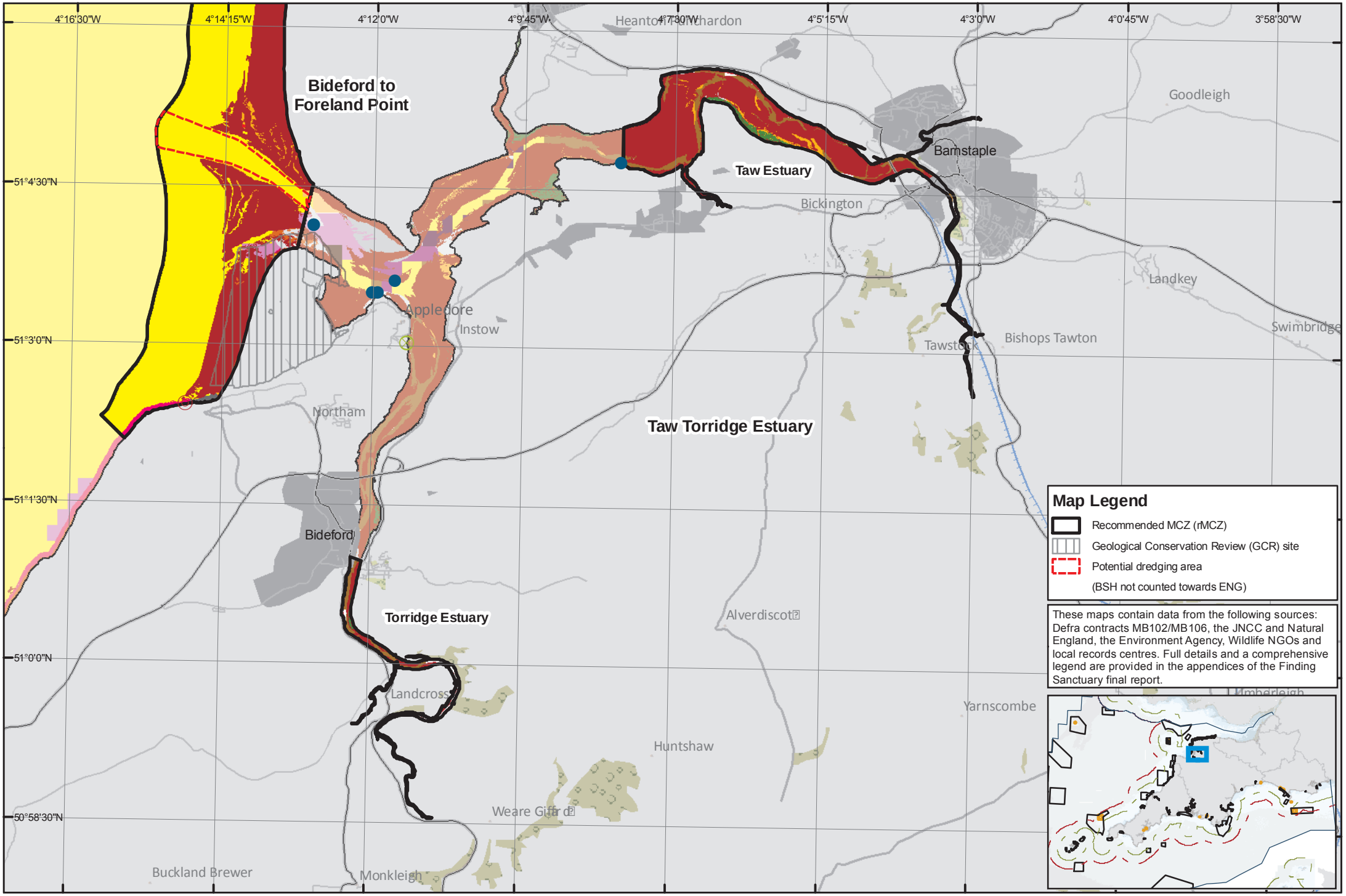
Version:30Aug11

Taw Torridge Estuary rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with biophysical information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 1 2 4 km N

FINDING SANCTUARY



Map Legend

- Recommended MCZ (rMCZ)
- Geological Conservation Review (GCR) site
- Potential dredging area (BSH not counted towards ENG)

These maps contain data from the following sources: Defra contracts MB102/MB106, the JNCC and Natural England, the Environment Agency, Wildlife NGOs and local records centres. Full details and a comprehensive legend are provided in the appendices of the Finding Sanctuary final report.

Map: FR_056c

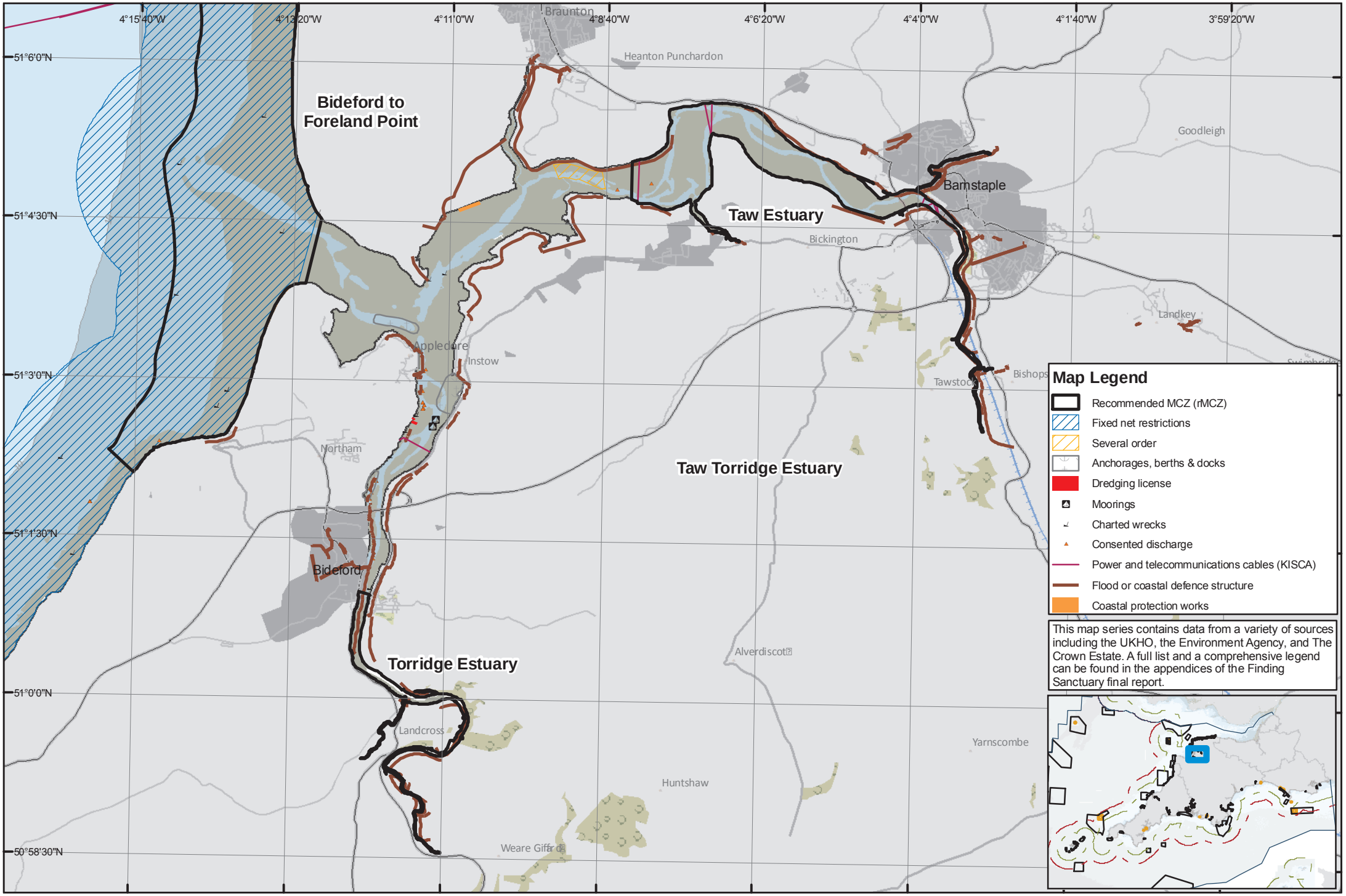
Version:5Sep11

Taw Torridge Estuary rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with socio-economic information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 1 2 4 km N

FINDING SANCTUARY



Map Legend

- Recommended MCZ (rMCZ)
- Fixed net restrictions
- Several order
- Anchorages, berths & docks
- Dredging license
- Moorings
- Charted wrecks
- Consented discharge
- Power and telecommunications cables (KISCA)
- Flood or coastal defence structure
- Coastal protection works

This map series contains data from a variety of sources including the UKHO, the Environment Agency, and The Crown Estate. A full list and a comprehensive legend can be found in the appendices of the Finding Sanctuary final report.

II.3.43 Bideford to Foreland Point rMCZ

Basic site information

***Site centre location (datum used: ETRS89)*:**

Decimal Degrees		Degrees Minutes Seconds	
Lat	**Long**	**Lat**	**Long**
51.1906	-4.0842	51° 11' 26'' N	4° 5' 3'' W

Due to the long, narrow shape of this rMCZ the centroid falls outside of the site boundary.

***Site surface area*:** 101 km^2 (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea
OSPAR region: Region III: Celtic Waters

Site boundary: The site boundary follows the coastline along the OS Boundary Line mean high water mark from Mermaid's Pool at Westward Ho! to Foreland Point, east of Lynton and Lynmouth on the Exmoor coast. Between Croyde and Foreland Point, the site runs in a strip of about 1.8km (1 nautical mile) width along the coastline, except for a short narrower stretch at Morte Point. Between Croyde and Westward Ho!, the width varies between ½ km and 2½ km. The site stretches across the mouth of the Taw Torridge estuary.

***Sites to which the site is related**:* The site overlaps with Braunton Burrows SAC and SSSI, and Northam Burrows SSSI, which which include the intertidal areas either side of the mouth of the Taw Torridge estuary. At the estuary mouth, there is a small area of overlap with the Taw Torridge Estuary SSSI. There are a number of coastal SSSIs along the stretch of coastline covered by the rMCZ, many of which include intertidal areas and therefore overlap with the rMCZ: Mermaid's Pool to Rowden Gut, Westward Ho! Cliffs, Saunton to Baggy Point Coast, Barricane Beach, Morte Point, Hele, Samson's and Combe Martin Bays, Exmoor Coastal Heaths, and West Exmoor Coast & Woods. The area is within the North Devon Biosphere Reserve region. The coastline between Combe Martin and Croyde is a voluntary marine conservation zone. Exmoor is a national park.

Maps of the site are included at the end of this site report. The main site map shows points with coordinates along the site boundary (in WGS84 UTM30N).

Features proposed for designation within Bideford to Foreland Point rMCZ

Table II.3.43a Draft conservation objectives for Bideford to Foreland Point rMCZ. M = maintain in favourable condition, R = recover to favourable condition. This is an extract of the conservation objective summary tables in section II.2.6. ***The full text of the draft conservation objectives can be found in appendix 15****.*

Broad-scale habitats	Subtidal coarse sediment		**M**
	Subtidal sand		**M**
	Moderate energy infralittoral rock		**M**
	High energy circalittoral rock		**R**

	High energy infralittoral rock		**M**
	High energy intertidal rock		**M**
	Intertidal coarse sediment		**M**
	Intertidal mixed sediments		**M**
	Intertidal mud		**M**
	Intertidal sand and muddy sand		**M**
	Low energy intertidal rock		**M**
	Moderate energy intertidal rock		**M**
Habitat FOCI	*Sabellaria alveolata* reefs		**M**
Species FOCI	*Eunicella verrucosa*	Pink sea-fan	**M**
	Paludinella littorina	Sea snail	**M**
Mobile species not listed in ENG	*Phocoena phocoena*	Harbour porpoise	**M**
	Halychoerus grypus	Grey Seals	**M**
	Uria aalge	Guillemot	**M**
	Alca torda	Razorbill	**M**

The following tables show ENG-related statistics for this site, reported from spatial data available in Finding Sanctuary's GIS datasets. Greyed out rows indicate features for which GIS data exists within the site boundary, but which have not been included on the list of draft conservation objectives (the reasons are stated in table footnotes). The site stretches across the mouth of the Taw Torridge estuary, which is dredged for maintenance of access to the harbours in the estuary system. The area that is dredged (see map FR_057b) is not included in the statistics presented in the tables below, nor does it count towards the network statistics in section II.2.8.

*Table II.3.43b **Subtidal broad-scale habitats** recorded in this rMCZ, based on an analysis of Finding Sanctuary's EUNIS level 3 broad-scale habitat GIS data (see appendix 8). Data sources: 1 - UKSeaMap, 2 - MESH, 3 - Environment Agency.*

Habitat	**Area covered within rMCZ (km^2)**	**% of total in study area**	**Source(s)**
High energy infralittoral rock	8.60	1.2%	1
Moderate energy infralittoral rock	3.99	1.3%	1
High energy circalittoral rock	1.42	0.1%	1
Subtidal coarse sediment	54.20	0.2%	1, 2
Subtidal sand	20.99	<0.1%	1, 2

*Table II.3.43c **Intertidal broad-scale habitats** recorded in this rMCZ, based on an analysis of Finding Sanctuary's EUNIS level 3 broad-scale habitat GIS data (see appendix 8). Data sources: 2 - MESH, 3 - Environment Agency, 4 – MB102.*

Habitat	Area covered within rMCZ (km^2)	% of total in study area	Source(s)
High energy intertidal rock	0.89	12.3%	4
Moderate energy intertidal rock	0.40	8.0%	4
Low energy intertidal rock	0.12	3.7%	4
Intertidal coarse sediments	0.76	3.9%	4, 3
Intertidal sand and muddy sand	0.33	2.9%	4
Intertidal mud	7.71	4.5%	4, 3
Intertidal mixed sediments	0.43	9.5%	4
Intertidal mud[1]	0.06	<0.1%	3

[1] Features / areas already protected within an overlapping MPA. See appendix 11 for details.

*Table II.3.43d **FOCI habitats** recorded in this rMCZ, based on an analysis of Finding Sanctuary's amalgamated GIS FOCI datasets (see appendix 8). Data sources: 1 - MB102; 2 - JNCC/ MESH Canyons survey data; 3 - ERCCIS/Isles of Scilly Wildlife Trust; 4 - DORIS.*

Habitat	Area covered (km^2)	Number of point records (total)	Number of point records (pre-1980)	Source(s)
Honeycomb worm (*Sabellaria alveolata*) reefs		1		1
Subtidal sands and gravels[1]	64.14			1

[1] Conservation objectives have not been included for subtidal sands and gravels as we have considered any conservation requirements met by listed broad-scale habitats.

*Table II.3.43e **FOCI species** recorded in this rMCZ, based on an analysis of Finding Sanctuary's amalgamated GIS FOCI datasets (see appendix 8). Data Sources: 1 - MB102; 2 - Dorset Wildlife Trust; 3 - Cornwall Wildlife Trust; 4 - DERC; 5 - SeaSearch 2009; 6 - Steve Trewhella Survey Log 2010.*

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
Eunicella verrucosa	3	1	1
Paludinella littorina	1		1
Hippocampus hippocampus[1]	1		1
Phymatolithon calcareum[2]	1		1

[1] This species was not included in the draft conservation objectives because during the vulnerability assessment meetings a query was raised over the veracity of the single record within the site boundaries.
[2] There is a single record of this species of maërl present within the boundaries of this site. This was discussed during the vulnerability assessment, and given the wider environmental characteristics of the site, it was considered a likely erroneous record, or a small fragment of maërl washed in from elsewhere. The species was therefore not included on the list of draft conservation objectives for the site.

This rMCZ also intersects with polygonal data which The Seahorse Trust provided via our interactive map, indicating the stretches of the south-west coastline along which one or both species of seahorse are found. This site intersects with 2.99 km^2 of seahorse area polygon (refer to appendix 8 for more information).

This rMCZ intersects with Northam Burrows Geological Conservation Review site.

For additional understanding on how this site is located in relation to environmental data layers, including areas of high benthic biodiversity, offshore bird aggregation areas, or areas of seasonal sea surface temperature fronts, please refer to the interactive PDF maps presented alongside this report.

Site summary

The stretch of coastline between Westward Ho! and Foreland Point is characterised by cliffs and rocky shores, with small sandy bays and inlets. The exception is Bideford Bay, an expanse of sandy shoreline backed by extensive sand dunes at the mouth of the Taw Torridge estuary system. The area intersects with an area of higher than average benthic species and habitat diversity (within the south-west context). The site's maximum depth is 36 metres. This stretch of coastline was suggested as an MCZ early on in the process, by the North Devon Biosphere Marine Working Group through the Devon Local Group.

Detailed site description

A long swept area of cliffs is broken by the extensive sand dunes and broad sandy beaches of Bideford Bay (Davies, 1998). Braunton Burrows at the north of the estuary is one of the largest dune systems in Britain, reaching 30 m in places (Buck, 1993).

Areas of sublittoral seabed are restricted to narrow current-swept channels with some extensive hard substrata including bedrock, cobbles and shell or pebbles in gravel colonised especially by hydroids, sponges, sea anemones, erect bryozoans, barnacles and mussels. Sublittoral sediments have a restricted fauna of species characteristic of disturbed conditions, including the worms *Nephtys cirrosa* and *Lanice conchilega* and the amphipods *Haustorius arenarius* and *Bathyporeia sarsi* (Davies, 1998).

The beaches at Woolacombe are known to include rocky shore communities adjacent to sand characterised by solitary and small colonies of the honeycomb worm *Sabellaria alveolata* and by the barnacle *Balanus perforatus*. The coarse sandy beaches are colonised by species characteristic of mobile sand including the isopod *Eurydice pulchra* and cirratulid polychaetes (K. Hiscock, unpublished). Sublittoral habitats from Morte Point to Lynmouth were surveyed during the South-West Britain sublittoral survey (Hiscock, 1981).

Eunicella verrucosa was surveyed during the 1978-79 North Devon Survey (Hiscock, 1981) and in 2002 and 2003 Seasearch surveys. Light & Killeen (2001) report records of *Paludinella littorina* in Woody Bay (Light, 1991) and Woolacombe (Conchological Society Records). Warwick & Davies (1977) surveyed sublittoral sediments and macrofauna in Bristol Channel in 155 subittoral stations which included areas within the Bideford to Foreland Point rMCZ.

Powell et al (1978) considered the rocky shores at Croyde a site of marine biological importance. Hiscock (1981) considered the sublittoral communities present to have a 'strong regional characteristic with sparse algal communities and rocks in many areas dominated by mussels'.

There is a rich littoral fauna off Ilfracoombe, where many species occur under overhangs on the lower shore (K. Hiscock, unpublished) where shaded, damp conditions and the turbid North Devon waters lead to the presence of many circalittoral species in the intertidal. Hiscock & Maggs (1984)

described the distribution of some uncommon algae encountered during the SWBSS in north Devon at Smallmouth; for example the red alga *Pterosiphonia pennata*.

The fauna of the hard bottom community dominated by reefs of the tube-building polychaete worm *Sabellaria spinulosa* a few kilometres north of Ilfracombe was studied in detail by George & Warwick (1985). *Sabellaria spinulosa* occurred in densities of over 3,000 individuals per m^2 and was accompanied by a wide variety of other species associated with hard bottoms. Ninety-four species were recorded (Davies, 1998).

One site within Coombe Martin Bay, Wild Pear beach, the midshore habitats are dominated by barnacles and limpets with sparse algal cover. The bladder-less form of bladder wrack *Fucus vesiculosus* var. *evesiculosus* is present on more exposed shores. Pools and overhangs are covered with encrusting sponges, mainly the breadcrumb sponge *Halichondria panacea* and the orange sponge *Hymeniacidon perleve* (Davies, 1998). Two species of interest are the uncommon strawberry anemone *Actinia fragacea* and the honeycomb worm *Sabellaria alveolata* (Davies, 1998). Crothers (1985) describes many of the shores of North Devon which was included in an extensive study on local populations of the dogwhelk *Nucella lapillus*.

The coastline from Combe Martin to beyond the Devon–Somerset border forms the seaward boundary of the Exmoor National Park. Holme & Nichols (1976) described the rocky shore habitats and communities within the National Park. The Exmoor coastline is predominantly boulder shores with occasional rocky reefs and some stretches of sand. Moderate to severe wave action reduces boulder stability which in turn reduces species richness within littoral communities (Davies, 1998).

It is felt within the Local Group that the SSSI does not offer enough protection for marshes outside of the system, nor protection for peeler crab exploitation. The Local Group highlighted a long list of interest features within this area: tide swept channels near the mouth of the Taw Torridge, fragile sponge and anthozoan communities on subtidal rocky habitats, intertidal underboulder communities, sheltered muddy gravels, *Sabellaria spinulosa* Ross worm, *Anguilla anguilla* European eel, *Padina pavonica* Peacock's tail, *Palinurus elephas* Spiny Lobster, *Lophius piscatorius* Anglerfish, common maërl, *Onchidela celtica*, *Asterina phylactica*, *Anthopleura thalia*, Leopard Spotted Goby, Allis Shad and *Ostrea edulis* Common Mussel. These features are not reflected in the tables above, as we lack GIS data to map them. Additional rare, scarce and sensitive species indicated as present by the Local Group are *Balanophyllia regia* scarlet & gold star coral, *Hoplangia durotrix* Weymouth carpet coral, *Mesacmaea mitchelli* policeman anemone, *Caryophyllia smithii* Devonshire cup coral, *Haliclystus auricula* Stalked jellyfish, *Hippocampus hippocampus* Short-snouted seahorse and *Solea solea* Sole.

The Locak Group also highlighted the importance of this area for seabirds, particularly guillemot and razorbills, and cetaceans *Halichoerus grypus* (Atlantic grey seals) and *Phocoena phocoena* (Harbour porpoise). The Local Group highlighted that Sea Bass, Grey Plover, Golden Plover, Sea Lavender and Atlantic Salmon present. The Local Group highlighted that the area is also a spawning, nursery and juvenile area for bass and salmon.

Stakeholder narrative: Assumptions and Implications

As explained in part I, the stakeholder narrative is a vital underpinning of the site recommendations. Working assumptions and implications are presented here, and additional comments are presented in the following section.

The following fundamental assumption was recorded to apply to all activities in all sites: **The fundamental assumption about human activities within MCZs is that activities can continue (under current licensing regimes where applicable), as long as they do not prevent the conservation objectives from being achieved.** This assumption applies to all activities. Table II.3.43f shows more specific working assumptions and implications that were recorded for this site over the course of the planning process.

Following that, table II.3.34g shows the vulnerability assessment (VA) snapshot for this site. The VA meetings took place at the end of the project, and they did not involve the Steering Group. They started to discuss site management, but did not reach any firm conclusions. The VA snapshot table reflects the point that the VA discussions had reached at the time of the last Joint Working Group meeting in May 2011. Many Steering Group members expressed concerns about the VA process and its outcomes (see section II.2.1 for full details).

Table II.3.43f Specific assumptions and implications relating to Bideford to Foreland Point rMCZ. Black text reflects the working assumptions and implications recorded throughout the planning discussions. The development of the narrative recorded in black can be traced back through the Working Group and Steering Group meeting reports from 2009 to 2011. Red and green text in the first column comments on how the snapshot of the vulnerability assessment (VA) relates to each of the working assumptions that had been made as planning took place (refer to part I for a full explanation of the VA snapshot).

Activities assumed to not be allowed within the site	
Assumptions	**Implications**
Aggregate extraction will not be allowed Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings.	**Direct implications:** o Aggregate dredging can only occur where the mineral resources are geologically located – in highly localised and discrete areas. If aggregate operations are not allowed in MCZs (subject to appropriate monitoring, mitigation and management), and MCZs coincide with aggregate resource, then this will have significant impact on national construction aggregate supply and coast defence. **Given this assumption, there are still the following concerns:** o If aggregate operations (subject to appropriate monitoring, mitigation and management) are restricted in areas adjacent to an MCZ, then this will have significant impact on national construction aggregate supply and coast defence.
Bottom-towed fishing gear will not be allowed (includes benthic trawling and hydraulic dredging) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings.	**Direct implications:** o Loss of ground for bottom-towed gear fishermen o Displacement of bottom-towed gear o Increased competition for fishing grounds o Reduced diversity and flexibility of fishing o Cumulative impact on bottom-towed gear fleet where protected areas are close together o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers. (This comment was

	recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) o Potential safety implications derived from displacement from sheltered areas. o Potential environmental implications derived from concentrating effort in alternative grounds or due to new fishing ground searching activity. **If the assumption turns out to be wrong:** o MCZ boundaries already changed to reduce impacts on mobile fishing gear
Anchoring of large vessels will not be allowed (except in emergencies) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o Possible effects on ports and harbours (this is a general concern, not just relating to the anchoring of large vessels). **Given this assumption, there are still the following concerns:** o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o General comment from SNCBs: a set distance is likely to be required from the edge of MCZ area where this activity is likely to impact on the MCZ features. **Given this assumption, there are still the following concerns:** o The Crown Estate have highlighted that there is a closed disposal site (Morte Bay) within 500m of the boundary of the rMCZ.

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	**Implications**
Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) o The area is already a fixed netting restricted area. **Given this assumption, there are still the following concerns:** o Static gear fishermen might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed o Local Group feedback states that this is a major potting area and restriction to potting activity would be financially restricting to a large part of the fishing population in the North Devon area.
The installation, operation and maintenance of renewable energy devices will be permitted *Based on SAP feedback the assumption cannot apply to all sites in the network, although it can apply to any given site on its own.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: - additional costs to the renewables industry, e.g. for licensing mitigation and monitoring - delays to renewables development - delays, lost revenue and additional costs associated with cable repair activity restrictions o Attracting the funding (for development) may be harder in the first place as sites with MPA designations within them will be less attractive to potential investors. o Costs and delays associated with co-location of renewables in MCZs, could result in long term implications in terms of renewables deployment which could have serious implications for industry and Government in terms of loss of operational revenue and missing EU climate change targets. o Enforced co-location with MCZs would dramatically restrict deployment. **If the assumption turns out to be wrong:** o If co-location assumptions are not correct the impacts would/could be: site locations that can't be developed,

	increased costs (the implications could be re-routing of cables around a feature could cost an additional £600,000 - £1.3m/km depending on cable type, size and seabed geology), construction delays, failure to meet renewables targets, impacts on acidification, additional monitoring requirements, increased uncertainty and declining investor confidence in renewables activities. o Increased competition for sea space with other sea users. o Tidal resource potential. Possible location for early demonstration sites. Two potential projects overlap with the rMCZ. o Good wind resource but landscape buffer requirements making deployment less likely. Access for wind farm infrastructure.
Tourism and recreational activities will be permitted. Feedback from the WT following JWG5 has highlighted the need for measures to avoid disturbance and collisions with cetaceans, this is not known to be a great problem currently, so the WT suggestions is for this to be done through codes of conduct and education. This was not discussed at the VA meetings.	**Direct implications:** o **Benefits:** o By publicising Codes of Conduct you increase the public awareness of species of interest within an area and this encourages increased tourism with benefits the local economy.
Coastal development and defence. Managed re-alignment will be taken account of within the site. This was discussed at the VA meetings, and the outcome was that it is uncertain whether additional mitigation might be needed for coastal development and defence as a result of this rMCZ.	**Direct implications:** o **Given this assumption, there are still the following concerns:** o The group would like this wording clarified to explain what kind of activities are meant by coastal development and defence. o There are current plans for the expansion of the harbour at Ilfracombe.
Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o The Crown Estate have highlighted that the rMCZ is located near an area with waste water outfalls which need to be able to continue.

Aquaculture of fin fish and shell fish will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Crab tiling / bait digging will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o The Local Group would like to see a reduction/status quo on crab tiling.
Beach replenishment will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o A Steering Group member stated that Flood and Erosion Risk Management activities needed to be permitted in the site, including managed realignment sites.

Activities assumed to be allowed to continue / occur within the site	
Assumptions	**Implications**
Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed **Benefits:** o Potential for increased and enhanced leisure and recreational activity

The installation and maintenance of cables will be permitted and will not be made prohibitively expensive within the site. This applies to power cables (including cables for renewable energy devices), and telecommunications cables. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption there are still the following concerns:** o Cable installation cost increases and delay o Cable repair cost, delays and lost revenue could increase due to activity restrictions on cable repair. o There is no definition of what 'prohibitively expensive' means; the cables representative would like assurance that no additional cost will result from MCZ designation (beyond costs associated with existing management and mitigation requirements). **If the assumption turns out to be wrong:** o For renewables/power cables, re-routing of cables around a feature or site might mean longer cable routes, at a cost of £600,000 - £1.3 million/km depending on cable type, size and seabed geology. o There may be other costs, e.g. costs associated with licensing, mitigation measures and monitoring requirements. o Increased licensing requirements and costs of cabling may have serious implications for industry and Government in terms of loss of operational revenue, missing EU climate change targets etc. o Cable route to tidal resources in the Bristol Channel.
The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o There are active cables bordering the offshore limit of the area which need to be maintained. Two active telecoms cables.

Maintenance dredging in ports (to enable access to ports) will be permitted *The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.* This activity was discussed during the VA meetings, and it was acknowledged that the rMCZ recommendation is contingent on being able to maintain a navigational channel at the estuary mouth. This maintenance dredging can continue, but would need to consider impacts on rMCZ features outside the dredged channel.	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Possible effects on ports and harbours (this is a general concern, not just relating to maintenance dredging in ports).
Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o (No heritage wrecks currently present in the site)
Anchoring of small vessels will be permitted *There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Possible effects on ports and harbours (this is a general concern, not just relating to the anchoring of small vessels). o The Local Group are only able to support this area if anchoring is allowed, particularly of small vessels. Anglers use the area seasonally (due to weather and species), go out 2-4nm and anchor. o No clear working group definition exists of what counts as a 'small' vessel - 24m was proposed some time ago by the RYA, but no decision was reached as to whether we would adopt that size in MCZ planning.

Passage of ships will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Possible effects on ports and harbours (this is a general concern, not just relating to the passage of ships).
Seaweed harvesting will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Military exercises – landings at Saunton Sands would continue to be permitted *Note, this is an new assumption added as a comment during the February 2011 Steering Group meeting* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **If the assumption turns out to be wrong:** o If this is wrong then the MOD could not support this rMCZ as Saunton Sands is an important landing area as it leads directly to a training area behind. Assumptions landings on Saunton Sands will have no impact on the specific items to be protected.

Table II.3.43g VA Snapshot table: This table records the point which the vulnerability assessment discussions had reached regarding site management, at the time of the final Joint Working Group meeting in May 2011. The outcome is not definitive, and the VA did not carry out an exhaustive review of all the working assumptions recorded in the longer table above. The Steering Group were not directly involved in the VA discussions, and at their final meeting, expressed considerable reservations about the VA outcome (see section II.2.1). The reason this VA snapshot table is included here is so that readers have a record of what the VA snapshot was showing at the time the final stakeholder comments were recorded for this site. For a full explanation of the VA snapshot, please refer to section II.2.1. The maps in appendix 13 show a visual representation of the information in all the VA snapshot tables in the rMCZ site reports.

Sector	Potential Management
Coastal Defence & Development	Management: - Impacts on the rMCZ conservation objectives would need to be considered in any licence application. It is not yet known whether any additional mitigation would be likely as a result of the rMCZ Measure : - Marine Licence

Tourism & Leisure	Management - Education and awareness of conduct for encounters with harbour porpoise and cetaceans in the rMCZ Measure - Voluntary code of conduct
Navigation Dredging	Management - A zone in the rMCZ explicitly permits dredging of the navigational channel at the estuary mouth. Impacts on the rMCZ conservation objectives outside this zone would need to be considered in any licence application or by the Harbour Authority. It is expected that maintenance dredging would be permitted with no additional mitigation likely to be required as a result of the rMCZ Measure - Marine Licence or Harbour Acts and Orders

Stakeholder narrative: Uncertainties and Additional Comments

Uncertainties

The most significant uncertainty faced by the project was the lack of knowledge on management of MCZs, and this uncertainty still applies to all rMCZs in the network. There was uncertainty over what activities will be affected by MCZ designations: what activities will be permitted to continue within (or near) MCZs, what activities will not be permitted, and what activities will require mitigation or some form of restriction other than a complete ban. There was also uncertainty over what measures will be taken to ensure any activity restrictions are put in place (e.g. byelaws, voluntary measures).

Additional comments

The following is a set of additional comments made by stakeholder representatives over the course of the planning work. Some of these comments were made specifically about this site, others were more generic comments which the project team consider to be relevant to this site.

- *Mobile bottom gear*
    - Seasonal closures are an inappropriate measure for benthic conservation.

- *Renewables*
    - There were concerns regarding access through the rMCZ to the port of Appledore and Yelland for the Atlantic Array development. Splitting the rMCZ was to be avoided by the boundary remaining but with a channel area that does not contribute to the ENG targets of the network and the Conservation Objectives recognise that this area may need to be developed in the future for renewables.
    - Capital development and dredging can continue for the development around Appledore.

- *English Heritage*
    - Westward Ho! has submerged forests and prehistoric footprints which may be needed to be excavated sometime in the future.

- *MOD*
    - There is military activity at Saunton Downs which will affect the efficacy of the rMCZ as there are landings of amphibious craft which heavily impact the benthos.

- *Seabirds and cetaceans*
    - Codes of practice may be a better way to achieve management of leisure boats (if necessary) than byelaws.
    - Current levels of human activity appear to be compatible with maintaining harbour porpoise numbers in this site. There is the potential for boat strike from pleasure craft which is a cause for concern. Monitoring of numbers and activities and impacts on this species, dissemination of codes of conduct for encounters, encouraging boat operators to become WiSE accredited and a 3 year review of baseline numbers (estimated from ERCCIS sightings data) would all help to maintain healthy populations of this mobile species. Healthy populations of harbour porpoises would suggest a healthy ecosystem within the site and would be an attraction for the general public and ecotourism. Mitigation measures would be required if there was a decline in species numbers due to activities within the rMCZ (e.g. disturbance from boat pleasure craft, boat strike, bycatch from fishing activity)
    - The conservation sector had proposed an extension to this MCZ for loafing birds assuming a restriction to fast moving vessels. The RSPB values these sites for breeding bird populations. It was agreed not to extend the existing MCZ but recognise this as an important sea bird colony and to suggest if future monitoring shows a threat and there is a known problem at this location then this needs to be addressed in any review. Monitoring of disturbance and any by-catch issues and annual productivity monitoring to determine that no deterioration in/loss of conservation status of the species making up the assemblage using the site (Guillemot, Razorbill) due to death, injury or disturbance. Mitigation measures would be required if there was a decline in species numbers due to activities within the rMCZ (e.g. disturbance from recreational disturbance, bycatch from fishing activity, built developments, pollution). Healthy populations of these species would suggest a healthy ecosystem within the site and would be an attraction for the general public and ecotourism.

- *General benefits of MCZs*
    - Some stakeholder representatives would like the following recorded and for these to be considered during the impact assessment:
        - Fisheries spill-over
        - Improvements for the local economy
        - Education opportunities
        - Benefits to science
        - Focus for voluntary groups
        - Potential increase in the amount and quality of recreational activities (diving, sea angling, environmental tourism, etc)
        - The designation as an MCZ will be a selling point and will undoubtedly be used as an identifier to the area to highlight it as somewhere to visit

- *Monitoring*
    - There are two main types of monitoring which will need to take place within rMCZs:
        - Monitoring the activities within a site and the various levels at which they are occurring.
        - Monitoring the ENG features for changes in condition.

- *Reaction to the vulnerability assessment process and outcomes*
    - At the sixth Joint Working Group meeting in June 2011, the results from the regional vulnerability assessment (VA) discussions were presented to the group, as shown in table II.3.43g (the VA process is described in part I). This generated concern within the JWG, for two reasons. Firstly, several members of the group had serious misgivings over the outcome of the management discussions, especially with respect to those inshore rMCZs for which no management of bottom-towed mobile fishing gear was highlighted as necessary. Secondly, the group had serious misgivings about the process itself, from which they felt disenfranchised.
    - The Steering Group made a statement at their final meeting, articulating those concerns in more detail. They recommended that there should be a process that allows them to review potential management measures for MCZs, before public consultation. The full statement made by the Steering Group is in section II.2.1.

Levels of support

The network report (section II.2) includes a project team reflection on levels of support for the network recommendations as a whole, and the site specific reflection presented here should be read within the wider network context.

Compared to other sites, this rMCZ is relatively less contentious. A boundary modification was carried out to exclude the area of Ilfracombe Harbour, reducing concerns about possible impacts on port activities and expansion. The site is put forward on the condition that maintenance dredging can take place in Bideford Bay, for shipping access to the ports and renewables infrastructure facilities (for the Atlantic Array wind farm) located in the Taw-Torridge area.

The site was originally suggested by the North Devon Biosphere Reserve Marine Working Group (www.northdevonbiosphere.org.uk) who worked on sites in North Devon on behalf of the Devon Local Group. This site was agreed in their cross-sector stakeholder meeting, which included renewable industry representatives and fishing representatives amongst many others. The North Devon Biosphere Reserve Marine Working Group are also supportive of the draft conservation objectives for seabirds and cetaceans in this rMCZ.

The Crown Estate are supportive of this rMCZ based on the assumptions that the potential deployment and maintenance of power cables is acceptable from Zone 8 Atlantic Array and does not require any additional mitigation; and on the assumption that the cables, port/harbour facilities, and water outfalls within the area would not be affected.

Supporting documentation

GIS data used for reporting the quantitative habitat and species figures in the tables above includes the following sources: UKSeaMap modelled broad-scale habitat data, MESH, MB102, and Environment Agency intertidal habitat data. Refer to appendix 8 for details, and to the tables above for data sources for specific features in this site.

Devon Biodiversity Records Centre (DBRC) data is included in the Devon Wildlife Trust (DWT) Sea Watch (seaquest) Database. This has over 1100 records of harbour porpoise for North Devon, dating from 1997, though most of the records are from 2006-2011. The data comes from effort-related survey and casual watches. Data can be obtained from Ellie Knott at the Devon Wildlife Trust.

Further evidence underpinning the site can be found in the publications and datasets referred to in the detailed site description. Members of the North Devon Biosphere Marine Working Group have in-depth knowledge of the area, and further information may be available from them. Information and data on seabirds from the area of the rMCZ can be obtained from the RSPB.

The North Devon Biosphere Reserve Marine Working Group has supplied additional information that is relevant to this site. This information includes a detailed description of the site, details of the species and habitats present, and recommendations for the management of the site if designated as an MCZ. These recommendations have been included in their entirety in the additional materials supplied with this final report.

Site map series

On the following pages there are three maps of this site.

- The first map (FR_057a) is the main site map showing the rMCZ boundary and includes points with coordinates (in WGS84 UTM30N). The map also shows charted depth and existing Marine Protected Areas for reference. Please note: the lat/long coordinates of the vertices in the following maps have been calculated in decimal degrees, and in degrees, minutes and seconds. For plotting on a standard Admiralty (UKHO) chart, the seconds of each coordinate need to be converted to decimal. An MS Excel table showing all coordinates in degrees, minutes and decimal seconds has been provided in the additional materials section (see Appendix 14) for plotting purposes.
- The second map (FR_057b) shows the rMCZ boundary over broad-scale habitats, and records of habitat and species FOCI. The data shown on this map corresponds with the information in tables II.3.43b to II.3.43e, data sources are indicated in the tables.
- The third map (FR_057c) shows socio-economic datasets. For spatial data showing the distribution of fishing effort, please refer to the interactive PDF maps supplied with the additional materials (see appendix 14).
- Because of the large number of features shown on the site maps (especially inshore biophysical maps), it has not been possible to embed comprehensive legends within the site maps themselves. A comprehensive map legend is therefore provided in appendix 7, which explains the symbology used on all the maps within this final report.
- Appendix 8 describes the data sources for the information shown on the final report maps in detail.

Map: FR_057a

Version:24Aug11

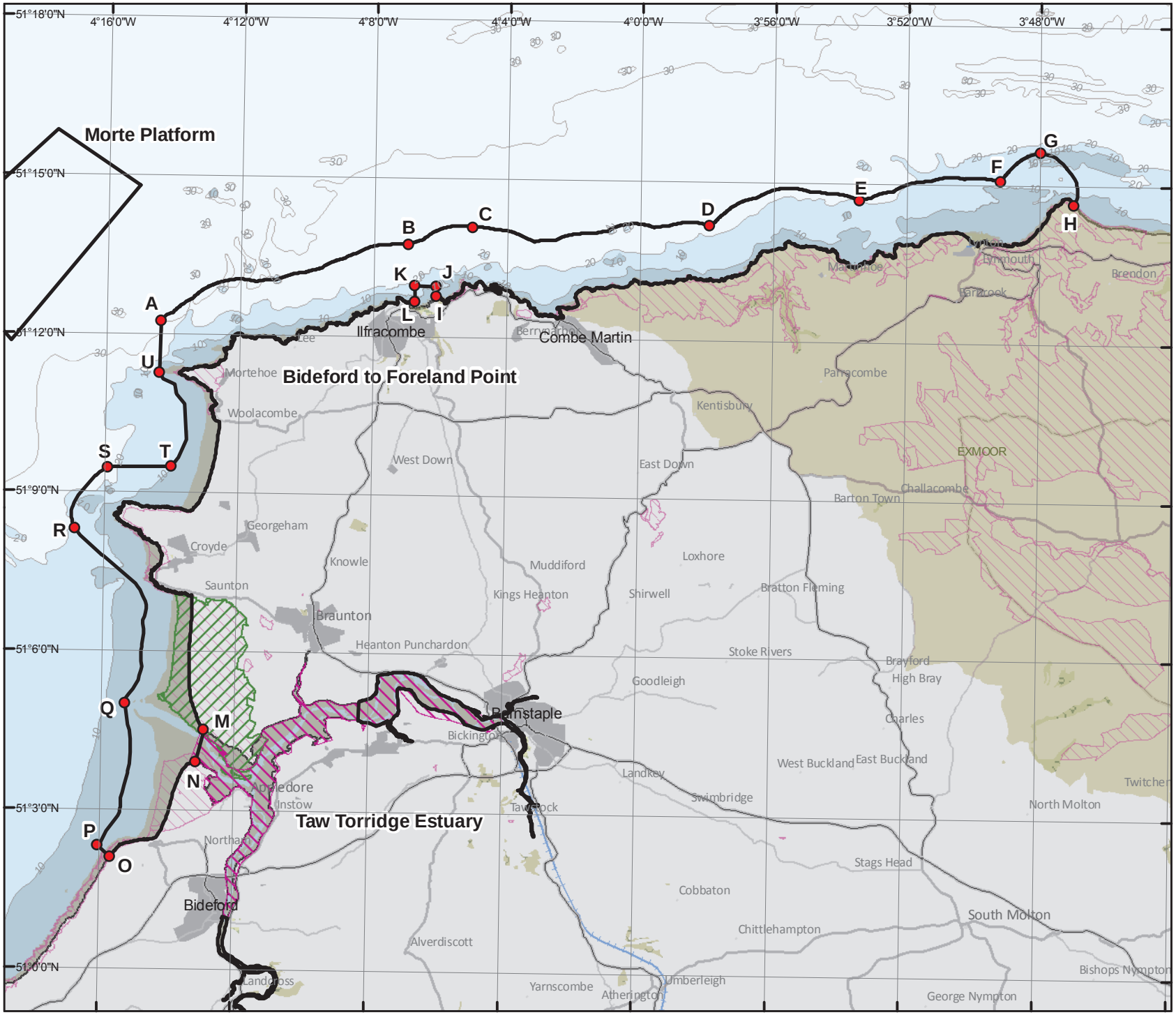
Bideford to Foreland Point rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 2 4 8 km

N

FINDING SANCTUARY



Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	51.2042	-4.2397	51° 12' 15" N	4° 14' 23" W
B	51.2293	-4.1165	51° 13' 45" N	4° 6' 59" W
C	51.2351	-4.0842	51° 14' 6" N	4° 5' 3" W
D	51.2367	-3.9653	51° 14' 11" N	3° 57' 55" W
E	51.2450	-3.8904	51° 14' 41" N	3° 53' 25" W
F	51.2514	-3.8196	51° 15' 5" N	3° 49' 10" W
G	51.2605	-3.7996	51° 15' 37" N	3° 47' 58" W
H	51.2442	-3.7828	51° 14' 39" N	3° 46' 58" W
I	51.2132	-4.1021	51° 12' 47" N	4° 6' 7" W
J	51.2163	-4.1021	51° 12' 58" N	4° 6' 7" W
K	51.2164	-4.1129	51° 12' 58" N	4° 6' 46" W
L	51.2114	-4.1129	51° 12' 41" N	4° 6' 46" W
M	51.0754	-4.2154	51° 4' 31" N	4° 12' 55" W
N	51.0652	-4.2191	51° 3' 54" N	4° 13' 8" W
O	51.0350	-4.2615	51° 2' 6" N	4° 15' 41" W
P	51.0385	-4.2675	51° 2' 18" N	4° 16' 3" W
Q	51.0836	-4.2550	51° 5' 1" N	4° 15' 18" W
R	51.1383	-4.2814	51° 8' 18" N	4° 16' 53" W
S	51.1576	-4.2653	51° 9' 27" N	4° 15' 55" W
T	51.1583	-4.2336	51° 9' 29" N	4° 14' 0" W
U	51.1879	-4.2404	51° 11' 16" N	4° 14' 25" W

Map Legend

Recommended MCZ (rMCZ)

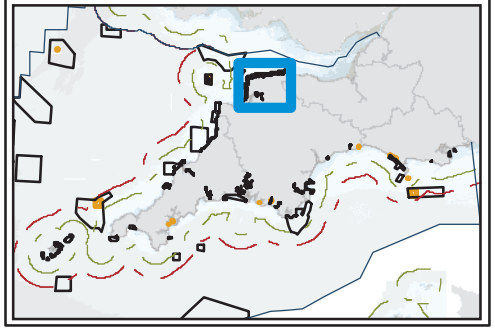
Existing MPAs

SAC

SSSI (part of MPA network)

SSSI (not part of MPA network)

A comprehensive legend is provided in the appendices of the Finding Sanctuary final report.



Map: FR_057b

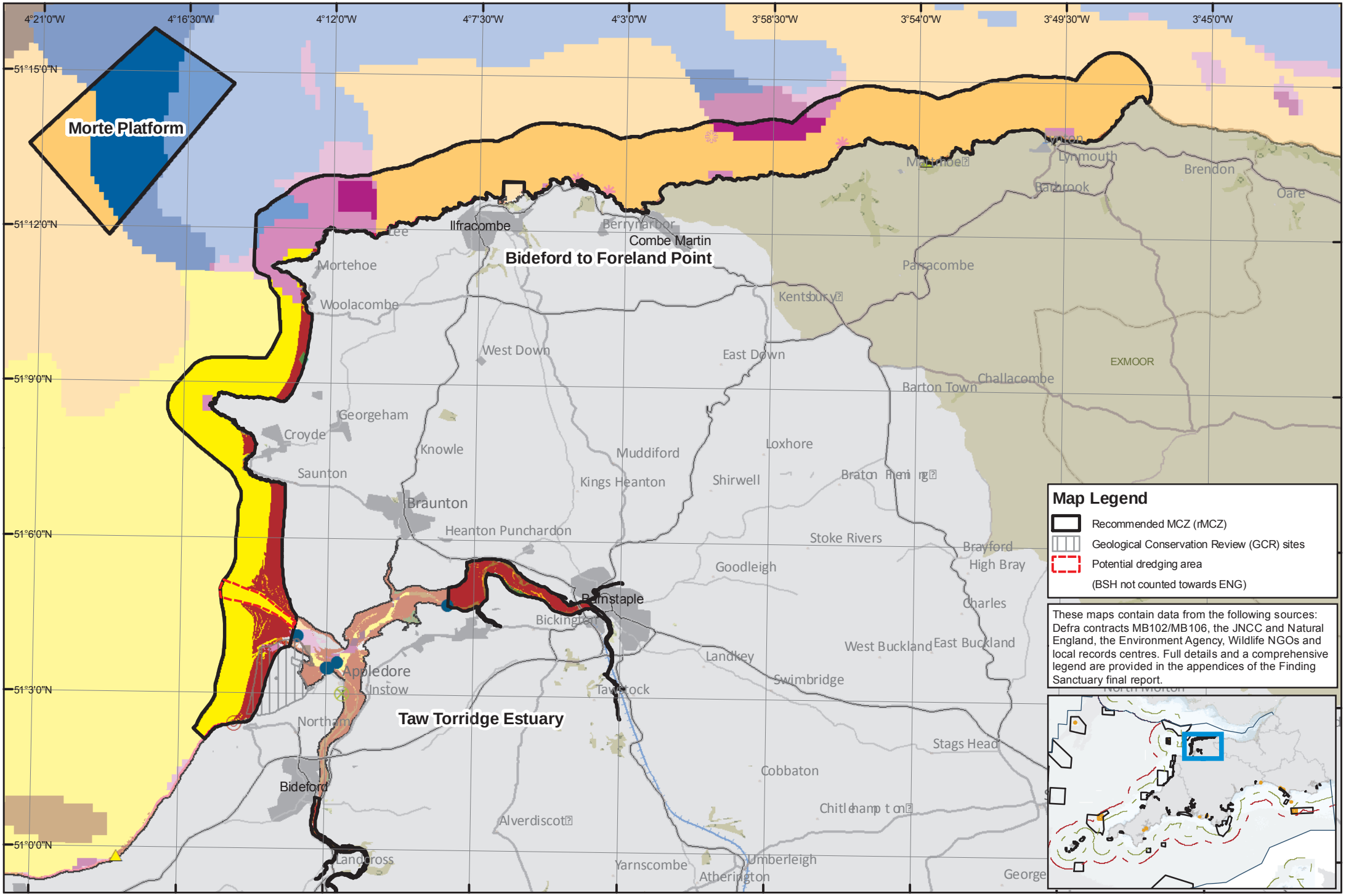
Version:31Aug11

Bideford to Foreland Point rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with biophysical information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 4.5 9 km N

FINDING SANCTUARY



Map: FR_057c

Version:5Sep11

Bideford to Foreland Point rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with socio-economic information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 2 4 8 km

N

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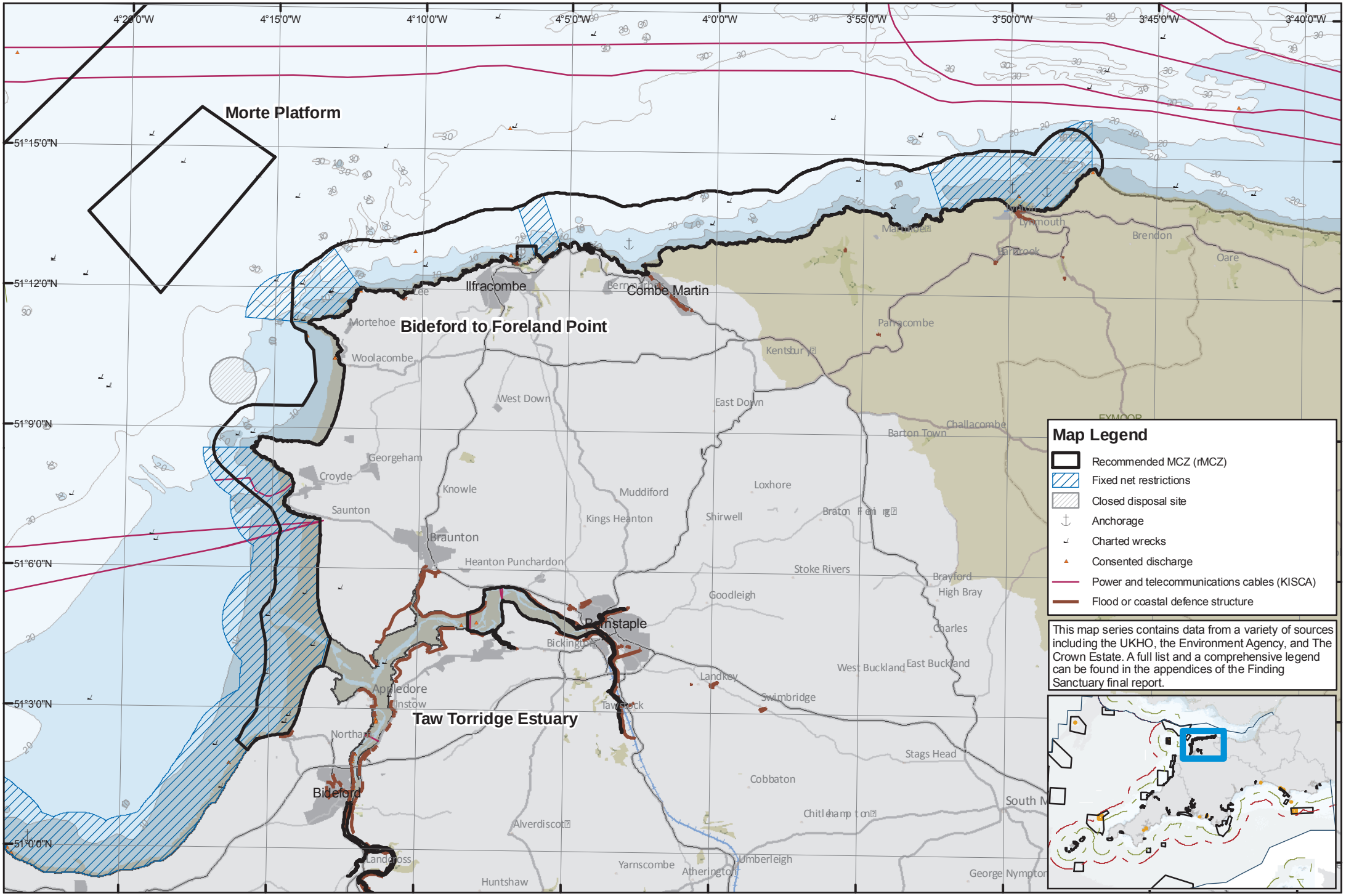

Map Legend

- Recommended MCZ (rMCZ)
- Fixed net restrictions
- Closed disposal site
- Anchorage
- Charted wrecks
- Consented discharge
- Power and telecommunications cables (KISCA)
- Flood or coastal defence structure

This map series contains data from a variety of sources including the UKHO, the Environment Agency, and The Crown Estate. A full list and a comprehensive legend can be found in the appendices of the Finding Sanctuary final report.

II.3.44 Morte Platform rMCZ

Basic site information

***Site centre location (datum used: ETRS89)*:**

Decimal Degrees		Degrees Minutes Seconds	
Lat	**Long**	**Lat**	**Long**
51.2326	-4.3046	51° 13' 57'' N	4° 18' 16'' W

***Site surface area*:** 25.45 km^2 (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea
OSPAR region: Region III: Celtic Waters

Site boundary: The site is a trapezoid shape located on the Morte Platform, approximately 5km off Baggy Point on the North Devon Coast.

Sites to which the site is related: The site falls within the region of the North Devon Biosphere Reserve.

Maps of the site are included at the end of this site report. The main site map shows points with coordinates along the site boundary (in WGS84 UTM30N).

Features proposed for designation within the Morte Platform rMCZ

Table II.3.44a Draft conservation objectives for Morte Platform rMCZ. M = maintain in favourable condition, R = recover to favourable condition. This is an extract of the conservation objective summary tables in section II.2.6. ***The full text of the draft conservation objectives can be found in appendix 15****.*

Broad-scale habitats	High energy circalittoral rock		**M**
	Moderate energy circalittoral rock		**M**
	Subtidal coarse sediment		**M**

Table II.3.44b ***Subtidal broad-scale habitats*** *recorded in this rMCZ, based on an analysis of Finding Sanctuary's EUNIS level 3 broad-scale habitat GIS data (see appendix 8). Data sources: 1 - UKSeaMap, 2 - MESH, 3 - Environment Agency.*

Habitat	Area covered within rMCZ (km^2)	% of total in study area	Source(s)
High energy circalittoral rock	4.86	0.4%	1
Moderate energy circalittoral rock	14.50	<0.1%	1
Subtidal coarse sediment	6.11	<0.1%	1

*Table II.3.44c **FOCI habitats** recorded in this rMCZ, based on an analysis of Finding Sanctuary's amalgamated GIS FOCI datasets (see appendix 8). Data sources: 1 - MB102; 2 - JNCC/ MESH Canyons survey data; 3 - ERCCIS/Isles of Scilly Wildlife Trust; 4 - DORIS.*

Habitat	Area covered (km^2)	Number of point records (total)	Number of point records (pre-1980)	Source(s)
Subtidal sands and gravels[1]	19.29			1

[1] Conservation objectives have not been included for subtidal sands and gravels as we have considered any conservation requirements met by listed broad-scale habitats.

For additional understanding on how this site is located in relation to environmental data layers, including areas of high benthic biodiversity, offshore bird aggregation areas, or areas of seasonal sea surface temperature fronts, please refer to the interactive PDF maps presented alongside this report.

Site summary

The Morte Platform is an area of rocky outcrops with patches of sediment, approximately 5km off Baggy Point. The depth of the area ranges between 35 and 40 metres below chart datum. The rMCZ intersects with an area of higher than average benthic species diversity (within the south-west context). The area was initially put forward by the North Devon Biosphere Reserve Marine Working Group through the Devon Local Group, who highlighted the biodiversity of the seabed and the presence of a range of features, such as *Sabellaria spinulosa* reefs, sublittoral biogenic reef, polychaete rich communities and tide swept channels in this area. The Local Group input highlighted the rugose and varied nature of the seabed as a reason for the high benthic species and biotope diversity in the area: The seabed consists of an assemblage of coarse sediments, stones, sand ridges and mud troughs. The mix of biotopes represented here is rarely represented anywhere else in the UK according to the National Biodiversity Network database. The Local Group also noted the presence of sand and mud mix/matrix and FluHyd, PoVen and SspiMx biotopes (as defined in Connor *et al.,* 2004), which are not well represented in the UK.

Detailed site description

The Outer Bristol Channel Marine Habitat study ran five research cruises between 2003 and 2005, and the area studied overlaps with this rMCZ. Eleven 30–40 km x 1 km wide corridors, covering 15% of the outer Bristol Channel, were examined by Mackie *et al.* (2006a; 2006b) using multibeam, sidescan and sub-bottom profiling. These were ground-truthed with the analysis of macrofauna from 137 grab and 13 trawl locations, sediments from 141 stations, and images from 20 video and camera tows. Sea bed samples were collected using a modified Van Veen grab. Three samples were taken from each site, two sieved for macrofauna with the third used for particle size analysis. The macrofaunal assemblages corresponded to eight infaunal and three epifaunal biotopes, with the latter occurring as overlays on the former. They produced a two-volume scientific research report detailing the sea bed habitats and associated animal life (Mackie *et al*. 2006b). Warwick & Davies (1977) surveyed sublittoral sediments and macrofauna in the Bristol Channel, describing the macrofaunal communities, which included the Morte Platform area.

Mackie *et al*. (2006a; 2006b) found coarse sediment; gravelly sand, sandy gravel and gravel with some sand patches, ribbons and waves. Well-bedded extensive Devonian rocks were exposed at the sea bed on the Morte Platform (Mackie *et al*. 2006b).

The Morte Platform is dominated by well-bedded rock outcrop exposed at the sea bed in water depths of 20 to less than 40 m in the centre of the Channel (Mackie *et al*. 2006b). The rock outcrops have formed a very frequent, dense series of small scarps and troughs up to a metre or two high; the majority are <0.5 m high. The rocks have been subject to ancient tectonic movement and the bedding exposed on the sea bed can be linear and sinuous, and disrupted by faults and folds. Sediment is commonly restricted to the troughs and can include gravel and sand (Mackie *et al*. 2006b). There are a few small isolated sand waves as well as occasional sand ribbons and sand patches. Horseshoe Rocks (Figure 2.3) is a dolerite intrusion > 1 km long, which forms a prominent shoal rising over 15 m above the surrounding sea bed to the north of Morte Point (Mackie *et al*. 2006b).

Stakeholder narrative: Assumptions and Implications

As explained in part I, the stakeholder narrative is a vital underpinning of the site recommendations. Working assumptions and implications are presented here, and additional comments are presented in the following section.

The following fundamental assumption was recorded to apply to all activities in all sites: **The fundamental assumption about human activities within MCZs is that activities can continue (under current licensing regimes where applicable), as long as they do not prevent the conservation objectives from being achieved.** This assumption applies to all activities. Table II.3.44d shows more specific working assumptions and implications that were recorded for this site over the course of the planning process.

Following that, table II.3.44e shows the vulnerability assessment (VA) snapshot for this site. The VA meetings took place at the end of the project, and they did not involve the Steering Group. They started to discuss site management, but did not reach any firm conclusions. The VA snapshot table reflects the point that the VA discussions had reached at the time of the last Joint Working Group meeting in May 2011. Many Steering Group members expressed concerns about the VA process and its outcomes (see section II.2.1 for full details).

Table II.3.44d Specific assumptions and implications relating to Morte Platform rMCZ. Black text reflects the working assumptions and implications recorded throughout the planning discussions. The development of the narrative recorded in black can be traced back through the Working Group and Steering Group meeting reports from 2009 to 2011. Red and green text in the first column comments on how the snapshot of the vulnerability assessment (VA) relates to each of the working assumptions that had been made as planning took place (refer to part I for a full explanation of the VA snapshot).

Activities assumed to not be allowed within the site	
Assumptions	**Implications**
Aggregate extraction will not be allowed Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o Aggregate dredging can only occur where the mineral resources are geologically located – in highly localised and discrete areas. If aggregate operations are not allowed in MCZs (subject to appropriate monitoring, mitigation and management), and MCZs coincide with aggregate resource, then this will have significant impact on national construction aggregate supply and coast defence. **Given this assumption, there are still the following concerns:**

	o If aggregate operations (subject to appropriate monitoring, mitigation and management) are restricted in areas adjacent to an MCZ, then this will have significant impact on national construction aggregate supply and coast defence.
Bottom-towed fishing gear will not be allowed (includes benthic trawling and hydraulic dredging) This activity was discussed in the VA meetings for this site, and it was determined that there would need to be a prohibition of benthic mobile fishing gears over specific FOCI in the rMCZ (see right hand column), not necessarily over the whole site.	**Direct implications:** o Loss of ground for bottom-towed gear fishermen, both UK and non-UK o Displacement of bottom-towed gear o Increased competition for fishing grounds o Reduced diversity and flexibility of fishing o Cumulative impact on bottom-towed gear fleet where protected areas are close together o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers. (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) o Potential environmental implications derived from concentrating effort in alternative grounds or due to new fishing ground searching activity.
Anchoring of large vessels will not be allowed (except in emergencies) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o General comment from SNCBs: a set distance is likely to be required from the edge of MCZ area where this activity is likely to impact on the MCZ features.

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	**Implications**
Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.	**Direct implications:** o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers (This comment was recorded during one of the early planning meetings.

Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	Several stakeholder representatives have since stated that the comment is unrealistic.) **Given this assumption, there are still the following concerns:** o Static gear fishermen might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed o Local Group feedback states that this is a major potting area and restriction to potting activity would be financially restricting to a large part of the fishing population in the North Devon area.
The installation, operation and maintenance of renewable energy devices will be permitted *Based on SAP feedback the assumption cannot apply to all sites in the network, although it can apply to any given site on its own.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** **Given this assumption, there are still the following concerns:** o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: - additional costs to the renewables industry, e.g. for licensing mitigation and monitoring - delays to renewables development - delays, lost revenue and additional costs associated with cable repair activity restrictions o Attracting the funding (for development) may be harder in the first place as sites with MPA designations within them will be less attractive to potential investors. o Costs and delays associated with co-location of renewables in MCZs, could result in long term implications in terms of renewables deployment which could have serious implications for industry and Government in terms of loss of operational revenue and missing EU climate change targets. o Enforced co-location with MCZs would dramatically restrict deployment. **If the assumption turns out to be wrong:** o If co-location assumptions are not correct the impacts would/could be: site locations that can't be developed, increased costs (the implications could be re-routing of cables around a feature could cost an additional £600,000 - £1.3m/km depending on cable type, size and seabed geology), construction delays, failure to meet renewables targets, impacts on acidification, additional monitoring requirements, increased uncertainty and declining investor confidence in renewables activities. o Increased competition for sea space with other sea users. o Long term Tidal Resource present on the eastern side of the rMCZ

Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Aquaculture of fin fish and shell fish will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Crab tiling / bait digging will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Beach replenishment will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Activities assumed to be allowed to continue / occur within the site	
Assumptions	**Implications**
Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed **Benefits:** o Potential for increased and enhanced leisure and recreational activity

The installation and maintenance of cables will be permitted and will not be made prohibitively expensive within the site. This applies to power cables (including cables for renewable energy devices), and telecommunications cables. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption there are still the following concerns:** o Cable installation cost increases and delay o Cable repair cost, delays and lost revenue could increase due to activity restrictions on cable repair. o There is no definition of what 'prohibitively expensive' means; the cables representative would like assurance that no additional cost will result from MCZ designation (beyond costs associated with existing management and mitigation requirements). o Possible impact on Atlantic Array cables. **If the assumption turns out to be wrong:** o For renewables/power cables, re-routing of cables around a feature or site might mean longer cable routes, at a cost of £600,000 - £1.3 million/km depending on cable type, size and seabed geology. o There may be other costs, e.g. costs associated with licensing, mitigation measures and monitoring requirements. o Increased licensing requirements and costs of cabling may have serious implications for industry and Government in terms of loss of operational revenue, missing EU climate change targets etc. o Possible cable route to renewables resources - wind and tidal stream. Round 3 Atlantic Array cable route through this site.
The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o The renewables industry has concerns about this site, as they fear that the presence of biogenic reef may prevent cabling to occur. The site lies in the path of the cable route for the planned Atlantic Array wind farm. They suggest the following explicit assumption to be included for this site: 'The installation and maintenance of cables for renewable energy devices will be permitted and will not carry additional consenting and costs burden.'
Tourism and recreational activities will be permitted. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Maintenance dredging in ports (to enable access to ports) will be permitted *The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o (No heritage wrecks currently present in the site)
Anchoring of small vessels will be permitted *There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o No clear working group definition exists of what counts as a 'small' vessel. 24m was proposed some time ago by the RYA, but no decision was reached as to whether we would adopt that size in MCZ planning.
Passage of ships will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Seaweed harvesting will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Table II.3.44e VA Snapshot table: This table records the point which the vulnerability assessment discussions had reached regarding site management, at the time of the final Joint Working Group meeting in May 2011. The outcome is not definitive, and the VA did not carry out an exhaustive review of all the working assumptions recorded in the longer table above. The Steering Group were not directly involved in the VA discussions, and at their final meeting, expressed considerable reservations about the VA outcome (see section II.2.1). The reason this VA snapshot table is included here is so that readers have a record of what the VA snapshot was showing at the time the final stakeholder comments were recorded for this site. For a full explanation of the VA snapshot, please refer to part I. The maps in appendix 13 show a visual representation of the information in all the VA snapshot tables in the rMCZ site reports.

Sector	Potential Management
Commercial Fishing – all mobile bottom gears	Management: - Prohibition of fishing over specific BSH/FOCIs in the rMCZ. These are: high energy circalittoral rock, moderate energy circalittoral rock. Measure: - Option 1: voluntary - Option 2: byelaw

Stakeholder narrative: Uncertainties and Additional Comments

Uncertainties

The most significant uncertainty faced by the project was the lack of knowledge on management of MCZs, and this uncertainty still applies to all rMCZs in the network. There was uncertainty over what activities will be affected by MCZ designations: what activities will be permitted to continue within (or near) MCZs, what activities will not be permitted, and what activities will require mitigation or some form of restriction other than a complete ban. There was also uncertainty over what measures will be taken to ensure any activity restrictions are put in place (e.g. byelaws, voluntary measures).

Additional comments

The following is a set of additional comments made by stakeholder representatives over the course of the planning work. Some of these comments were made specifically about this site; others were more generic comments which the project team consider to be relevant to this site.

- *Mobile bottom gear*
    - Seasonal closures are an inappropriate measure for benthic conservation.
    - It is important that whatever is agreed outside the 6nm limit is ratified by Europe so that there are no unfair penalties on English vessels.
    - The area that was originally suggested for protection was moved slightly, towards an area of relatively lower towed fishing gear use intensity.

- *Renewables*
    - Until the cabling routes for the Atlantic Array are made public, the caveat remains that renewables stakeholders will not be able to support this site if cabling is restricted.

- The planned route for power cables from the Atlantic Array windfarm intersects this rMCZ. RWE npower (the developers of the Atlantic Array wind farm) contacted the North Devon Biosphere Reserve Marine Working Group (a subgroup of the Devon Local Group), to highlight their concern that this area might impact on the laying, operation and maintenance of power cables from the Atlantic Array. Based on the working assumption that cabling would not be impacted by the rMCZ, they are not entirely supportive of this rMCZ being included in the recommendations, because they do not have sufficient confidence that the assumption will hold true. They suggested excluding a 500m wide channel through the rMCZ to allow for the cable route, which would cut the site in two parts. More recently (Feb 2011) they indicated that they have to take into account certain species (including *Sabellaria spinulosa*) when planning cabling routes. This could mean that cable routes may not be further affected by an MCZ designation.
- RWE npower, the developers of the Atlantic Array windfarm, have made the following statement with respect to this site and the North of Lundy (Atlantic Array area) rMCZ [note that iQ6 and iR1 refer to MCZ building block codes used early in the process for the pre-cursors to the rMCZs referred to]: 'RWE is developing the Atlantic Array offshore wind farm within the outer Bristol Channel under an Agreement for Lease with The Crown Estate. Both the Atlantic Array project area (IR1) and the Morte Platform (IQ6), which lies across an export cable route from the wind farm, have been put forward by Finding Sanctuary as potential Marine Conservation Zones. The purpose of this statement is to provide our assessment of the compatibility of an MCZ in these areas with an offshore wind farm. We have been engaged with Natural England since September 2010 in addressing the inherent uncertainties presented by co-located MCZs. We were concerned that co-location would present higher consenting and monitoring hurdles than would otherwise be the case and that engineering solutions would potentially be constrained. This was undesirable in a site that is technically very challenging with a combination of deep water and significant tidal range. We have also engaged with the North Devon Biosphere Group, which has promoted MCZs within the Bristol Channel including the Morte Platform. RWE supports the view that the MCZ network should be developed efficiently to secure the maximum ecological gain at the least socio-economic cost. We understand that co-location of an MCZ with the proposed Atlantic Array will reduce the area which will be closed to other sea users, particularly fishermen. The non-co-location networks included within the 3rd Progress report submitted to the SAP on 28 February 2011, included additions to areas in the Western Deeps, we note that the Finding Sanctuary project team has since put forward an alternative MCZ to the west of the Atlantic Array in a non-co-location scenario, to be considered by the Joint Working Group on the 6 April 2011. We understand that this new proposal, and/or areas within Western Deep will only be present in a non-co-location network, and that fishing activity in these areas is likely to be restricted through management measures. Co-location in our view will therefore minimise areas that will be closed to other human users of the sea – particularly fishermen, provided that the network is adjusted to correspond to remove those areas which are only proposed within a no co-location scenario. Should the outcome of the Joint Working Group (060411) put forward a non co-location network significantly different to those described we may wish to review the decision we have reached today. For these reasons we support a co-located MCZ at the Atlantic Array and at the Morte Platform. In due course we would very much

welcome the opportunity of providing input to the choice of management measures for the relevant MCZ.'

- *General benefits of MCZs*
  - Some stakeholder representatives would like the following recorded and for these to be considered during the impact assessment:
    - Fisheries spill-over.
    - Improvements for the local economy.
    - Education opportunities.
    - Benefits to science.
    - Focus for voluntary groups.
    - Potential increase in the amount and quality of recreational activities (diving, sea angling, environmental tourism, etc).
    - The designation as an MCZ will be a selling point and will undoubtedly be used as an identifier to the area to highlight it as somewhere to visit.

- *Monitoring*
  - There are two main types of monitoring which will need to take place within rMCZs:
    - Monitoring the activities within a site and the various levels at which they are occurring.
    - Monitoring the ENG features for changes in condition.

- *Reaction to the vulnerability assessment process and outcomes*
  - At the sixth Joint Working Group meeting in June 2011, the results from the regional vulnerability assessment (VA) discussions were presented to the group, as shown in table II.3.44e (the VA process is described in part I). This generated concern within the JWG, for two reasons. Firstly, several members of the group had serious misgivings over the outcome of the management discussions, especially with respect to those inshore rMCZs for which no management of bottom-towed mobile fishing gear was highlighted as necessary. Secondly, the group had serious misgivings about the process itself, from which they felt disenfranchised.
  - The Steering Group made a statement at their final meeting, articulating those concerns in more detail. They recommended that there should be a process that allows them to review potential management measures for MCZs, before public consultation. The full statement made by the Steering Group is in section II.2.1.

Levels of support

The network report (section II.2) includes a project team reflection on levels of support for the network recommendations as a whole, and the site specific reflection presented here should be read within the wider network context.

The site was originally suggested by the North Devon Biosphere Reserve Marine Working Group (www.northdevonbiosphere.org.uk) who worked on sites in North Devon on behalf of the Devon Local Group. This site was agreed in their cross-sector stakeholder meeting, which included renewable industry representatives and fishing representatives amongst many others. The Devon Local Group supports the site on the basis that it will have no negative impact on the Atlantic Array construction and operation as a result of an MCZ designation.

Supporting documentation

GIS data used for reporting the quantitative habitat and species figures in the tables above includes the following sources: UKSeaMap modelled broad-scale habitat data and MB102. Refer to appendix 8 for details, and to the tables above for data sources for specific features in this site.

Further evidence underpinning the site can be found in the publications and datasets referred to in the detailed site description. Data also exists from a multibeam trial conducted by the Maritime & Coastguard Agency (MCA) in 2002 over an area of 50 km^2 between Lundy and Morte Point.

The North Devon Biosphere Reserve Marine Working Group has supplied additional information that is relevant to this site. This information includes a detailed description of the site, details of the species and habitats present, and recommendations for the management of the site if designated as an MCZ. These recommendations have been included in their entirety in the additional materials supplied with this final report.

Site map series

On the following pages there are two maps of this site.

- The first map (FR_058a) is the main site map showing the rMCZ boundary and includes points with coordinates (in WGS84 UTM30N). The map also shows charted depth and existing Marine Protected Areas for reference. Please note: the lat/long coordinates of the vertices in the following maps have been calculated in decimal degrees, and in degrees, minutes and seconds. For plotting on a standard Admiralty (UKHO) chart, the seconds of each coordinate need to be converted to decimal. An MS Excel table showing all coordinates in degrees, minutes and decimal seconds has been provided in the additional materials section (see Appendix 14) for plotting purposes.
- The second map (FR_058b) shows the rMCZ boundary over broad-scale habitats, and records of habitat and species FOCI. The data shown on this map corresponds with the information in table II.44b, data sources are indicated in the table.
- Most rMCZ site reports contain a map showing socio-economic datasets. This one does not, as there is limited human activity mapped in the site (we do not have GIS data for the planned Atlantic Array cable route referred to above, but are aware that it runs through the centre of the site). For spatial data showing the distribution of fishing effort, please refer to the interactive PDF maps supplied with the additional materials (see appendix 14).
- Because of the large number of features shown on the site maps (especially inshore biophysical maps), it has not been possible to embed comprehensive legends within the site maps themselves. A comprehensive map legend is therefore provided in appendix 7, which explains the symbology used on all the maps within this final report.
- Appendix 8 describes the data sources for the information shown on the final report maps in detail.

Map: FR_058a

Version:26Aug11

Morte Platform rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 0.5 1 2 km

N

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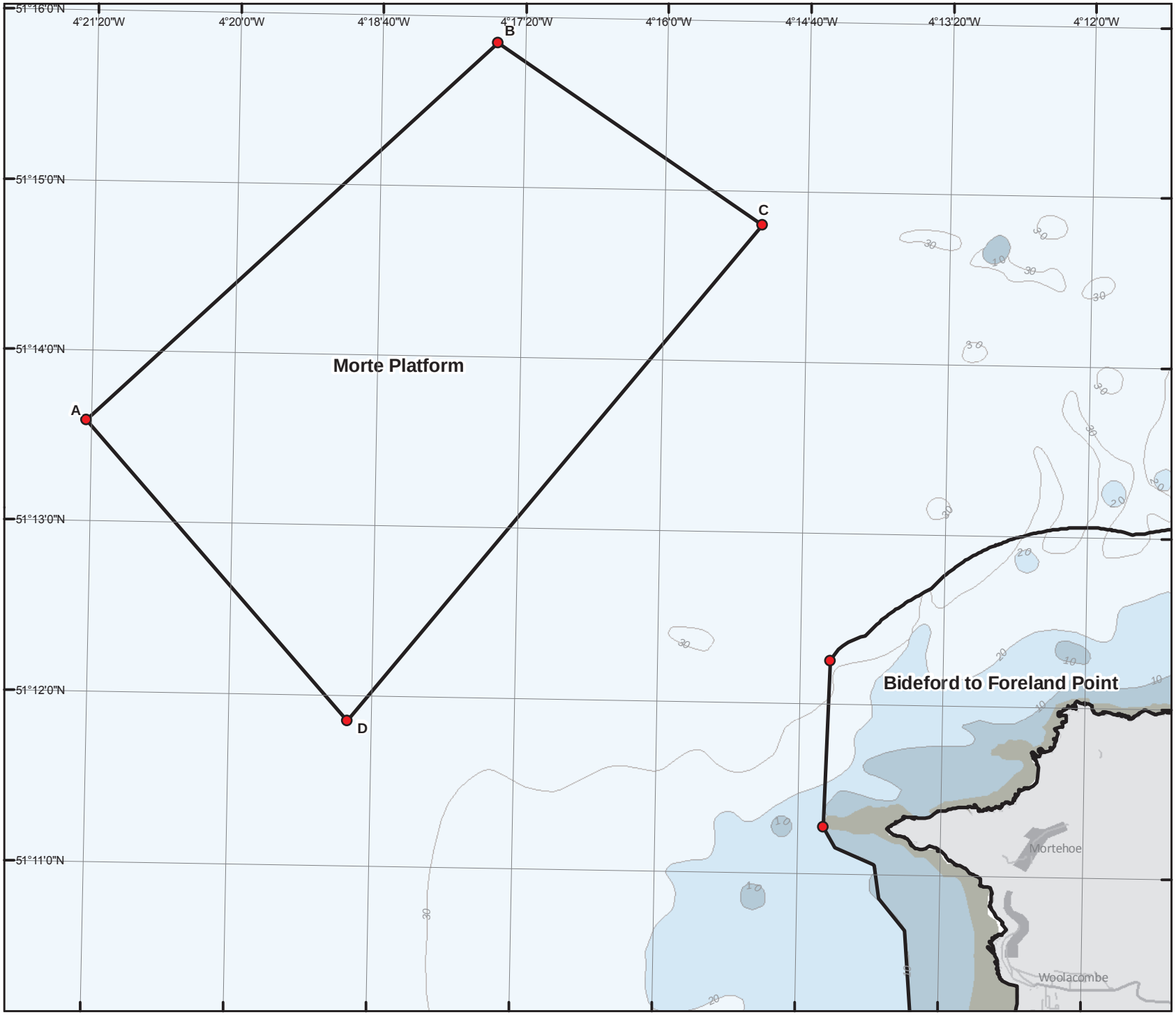


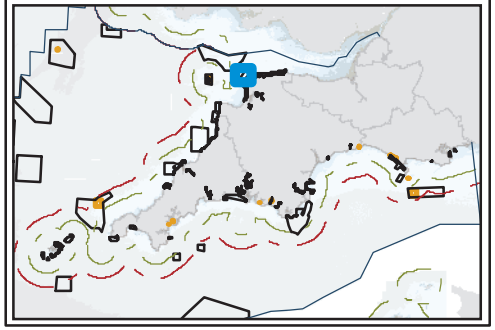
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	51.2265	-4.3564	51° 13' 35" N	4° 21' 23" W
B	51.2642	-4.2932	51° 15' 51" N	4° 17' 35" W
C	51.2467	-4.2515	51° 14' 48" N	4° 15' 5" W
D	51.1975	-4.3149	51° 11' 51" N	4° 18' 53" W

Map Legend

Recommended MCZ (rMCZ)

A comprehensive legend is provided in the appendices of the Finding Sanctuary final report.



Map: FR_058b

Version:31Aug11

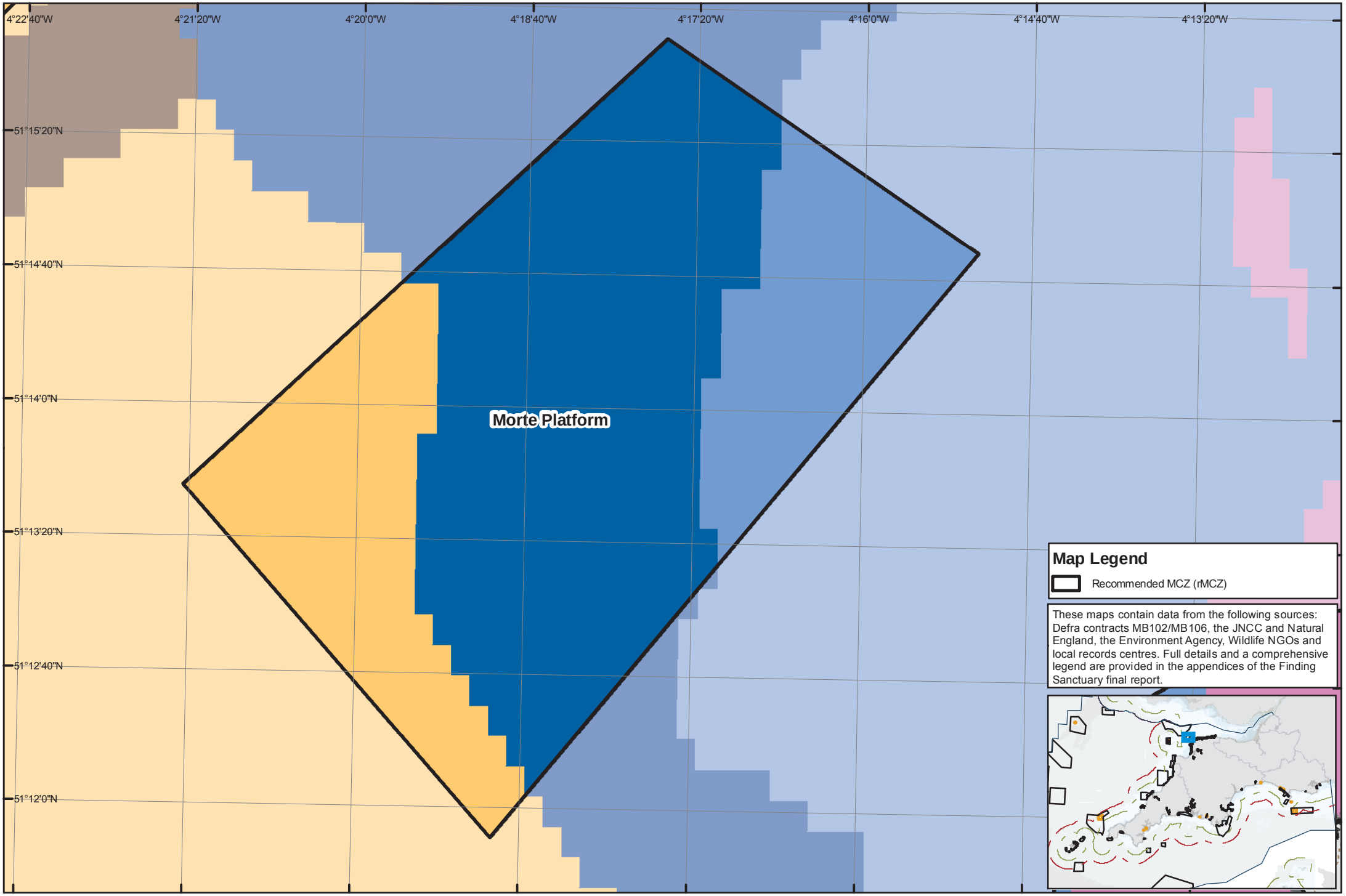
Morte Platform rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with biophysical information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 0.5 1 2 km

N

FINDING SANCTUARY



II.3.45 North of Lundy (Atlantic Array area) rMCZ

Basic site information

***Site centre location (datum used: ETRS89)*:**

Decimal Degrees		Degrees Minutes Seconds	
Lat	**Long**	**Lat**	**Long**
51.3386	-4.5225	51° 20' 18'' N	4° 31' 21'' W

***Site surface area*:** 348.24 km^2 (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea
OSPAR region: Region III: Celtic Waters

***Site boundary**:* The site boundary follows the RWE npower Atlantic Array windfarm planned development area, except for the portion that lies north of the median line with Wales and therefore falls outside our study region.

Sites to which the site is related: The site does not intersect or sit alongside any existing protected areas.

Maps of the site are included at the end of this site report. The main site map shows points with coordinates along the site boundary (in WGS84 UTM30N).

Features proposed for designation with the North of Lundy rMCZ

Table II.3.45a Draft conservation objectives for the North of Lundy rMCZ. M = maintain in favourable condition, R = recover to favourable condition. This is an extract of the conservation objective summary tables in section II.2.6. ***The full text of the draft conservation objectives can be found in appendix 15****.*

Broad-scale habitats	Moderate energy circalittoral rock[1]		**M**
	Subtidal coarse sediment		**M**
	Subtidal mixed sediments		**M**
	Subtidal sand		**M**

[1]In the north-west portion of the site, this is probably coarse sediment and cobbles, not bedrock.

The following tables show ENG-related statistics for this site, reported from spatial data available in Finding Sanctuary's GIS datasets. Greyed out rows indicate features for which GIS data exists within the site boundary, but which have not been included on the list of draft conservation objectives (the reasons are stated in table footnotes).

Table II.3.45b ***Subtidal broad-scale habitats*** *recorded in this rMCZ, based on an analysis of Finding Sanctuary's EUNIS level 3 broad-scale habitat GIS data (see appendix 8). Data sources: 1 - UKSeaMap, 2 - MESH, 3 - Environment Agency.*

Habitat	Area covered within rMCZ (km^2)	% of total in study area	Source(s)
Moderate energy circalittoral rock	27.93	0.1%	1
Subtidal coarse sediment	294.06	1.0%	1
Subtidal sand	24.86	<0.1%	1, 2
Subtidal mixed sediments	0.64	<0.1%	1

Table II.3.45c ***FOCI habitats*** *recorded in this rMCZ, based on an analysis of Finding Sanctuary's amalgamated GIS FOCI datasets (see appendix 8). Data sources: 1 - MB102; 2 - JNCC/ MESH Canyons survey data; 3 - ERCCIS/Isles of Scilly Wildlife Trust; 4 - DORIS.*

Habitat	Area covered (km^2)	Number of point records (total)	Number of point records (pre-1980)	Source(s)
Subtidal sands and gravels[1]	203.09			1

[1] Conservation objectives have not been included for subtidal sands and gravels as we have considered any conservation requirements met by listed broad-scale habitats.

For additional understanding on how this site is located in relation to environmental data layers, including areas of high benthic biodiversity, offshore bird aggregation areas, or areas of seasonal sea surface temperature fronts, please refer to the interactive PDF maps presented alongside this report.

Site summary

The seabed within this rMCZ consists of sand and coarse sediments, with some areas mapped as rock (although based on the findings of Mackie *et al.* 2006a; 2006b that might be areas of cobbles rather than solid bedrock). The area intersects with an area of higher than average benthic species diversity (within the south-west context). The depth of the site is between 55 and 35 metres below chart datum, and the nearest land is about 14km away (Morte Point in North Devon).

Detailed site description

The Outer Bristol Channel Marine Habitat study ran five research cruises between 2003 and 2005, and the area studied overlaps with this rMCZ. Eleven 30–40 km x 1 km wide corridors, covering 15% of the outer Bristol Channel, were examined by Mackie *et al.* (2006a; 2006b) using multibeam, sidescan and sub-bottom profiling. These were ground-truthed with the analysis of macrofauna from 137 grab and 13 trawl locations, sediments from 141 stations, and images from 20 video and camera tows. Sea bed samples were collected using a modified Van Veen grab. Three samples were taken from each site, two sieved for macrofauna with the third used for particle size analysis. The macrofaunal assemblages corresponded to eight infaunal and three epifaunal biotopes, with the latter occurring as overlays on the former. They produced a two-volume scientific research report detailing the sea bed habitats and associated animal life (Mackie *et al*. 2006b).

Mackie *et al*. (2006a; 2006b) found bifurcating, high frequency sand waves; sand patches; some muddy sand; coarse sediment - gravelly sand, sandy gravel and gravel. The area was characterised by numerous isolated sand waves on a dominantly coarse substrate of gravelly sands and gravels.

During April and May 1993, and in February and May 1994, samples of the benthic macrofauna were collected by Rees *et al.* (1999) from MAFF research vessels. At each location, five sediment samples for macrofauna analysis were collected using a 0.1 m^2 day grab from the central point of a 500 m grid of 9 stations, the latter being sampled for contaminant analyses only.

Rogers *et al.* (2008) investigated offshore mud sediments in the Celtic Deep and North-western Irish Sea. Two sites on sand sediments in the Bristol Channel and Outer Carmarthen Bay (North of Lundy) were studied during July 2004 and 2005, respectively. At the centre station of each site, replicate sampling was undertaken for benthic fauna and demersal fish. Warwick & Davies (1977) surveyed sublittoral sediments and macrofauna in the Bristol Channel which included the area of North of Lundy Atlantic Array Area.

Macro-epibenthic invertebrate and demersal fish assemblages are described by Ellis *et al*. (2000) from 101 beam trawl stations in the Irish Sea, St George's Channel and Bristol Channel including within the area of the North of Lundy Atlantic Array Area.

Stakeholder narrative: Assumptions and Implications

As explained in part I, the stakeholder narrative is a vital underpinning of the site recommendations. Working assumptions and implications are presented here, and additional comments are presented in the following section.

The following fundamental assumption was recorded to apply to all activities in all sites: **The fundamental assumption about human activities within MCZs is that activities can continue (under current licensing regimes where applicable), as long as they do not prevent the conservation objectives from being achieved.** This assumption applies to all activities. Table II.3.45d shows more specific working assumptions and implications that were recorded for this site over the course of the planning process.

Following that, table II.3.45e shows the vulnerability assessment (VA) snapshot for this site. The VA meetings took place at the end of the project, and they did not involve the Steering Group. They started to discuss site management, but did not reach any firm conclusions. The VA snapshot table reflects the point that the VA discussions had reached at the time of the last Joint Working Group meeting in May 2011. Many Steering Group members expressed concerns about the VA process and its outcomes (see section II.2.1 for full details).

Table II.3.45d Specific assumptions and implications relating to North of Lundy (Atlantic Array area) rMCZ. Black text reflects the working assumptions and implications recorded throughout the planning discussions. The development of the narrative recorded in black can be traced back through the Working Group and Steering Group meeting reports from 2009 to 2011. Red and green text in the first column comments on how the snapshot of the vulnerability assessment (VA) relates to each of the working assumptions that had been made as planning took place (refer to part I for a full explanation of the VA snapshot).

Activities assumed to not be allowed within the site	
Assumptions	**Implications**
Aggregate extraction will not be allowed Activity not taking place / not taking place at high enough levels to cause	**Direct implications:** o Aggregate dredging can only occur where the mineral resources are geologically located – in highly localised and discrete areas. If aggregate operations are not allowed in MCZs (subject to appropriate monitoring, mitigation and

a problem in this site, so this was not considered during the VA meetings	management), and MCZs coincide with aggregate resource, then this will have significant impact on national construction aggregate supply and coast defence. o This area overlaps an aggregate resource area with a value of £13million per km2. Project team comment: this resource would presumably not be exploitable in any case, once a windfarm is built – in which case any MCZ designation would not lead to added loss to the aggregate industry **Given this assumption, there are still the following concerns:** o If aggregate operations (subject to appropriate monitoring, mitigation and management) are restricted in areas adjacent to an MCZ, then this will have significant impact on national construction aggregate supply and coast defence. o Crown Estate comment - High value aggregates interest worth £13,025,000. The rMCZ is 1.6 km south of Western Bristol Channel dredging option area. Tenants Tarmac Marine Dredging Ltd, Hanson Aggregates Marine Ltd, CEMEX UK Marine Ltd
Bottom-towed fishing gear will not be allowed (includes benthic trawling and hydraulic dredging) This activity was discussed during the VA meeting, and the assumption was made that there would need to be a prohibition of benthic mobile fishing gear over the parts of the site containing moderate energy circalittoral rock (but not over the whole site, given current levels of activity and gears used).	**Direct implications:** o Loss of ground for bottom-towed gear fishermen, both UK and non-UK o Displacement of bottom-towed gear o Increased competition for fishing grounds o Reduced diversity and flexibility of fishing o Cumulative impact on bottom-towed gear fleet where protected areas are close together o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers. (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) o Area is an important fishing ground for the North Devon fishing industry for ray and Dover sole. o Potential environmental implications derived from concentrating effort in alternative grounds or due to new fishing ground searching activity.
Anchoring of large vessels will not be allowed (except in emergencies) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.

Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	**Implications**
Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o No tow zones will be inundated with pots and static gear and cause difficulties for sea anglers (This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic.) **Given this assumption, there are still the following concerns:** o Local Group feedback indicates that this is an important potting ground for North Devon fishermen. o Static gear fishermen might face possible additional costs for mitigation measures and costs due to monitoring needed
The installation, operation and maintenance of renewable energy devices will be permitted Specifically, the Atlantic Array windfarm can be co-located with this rMCZ *Please also refer to the statement made by the Atlantic Array developers (rwe-npower) with respect to this site, included in the final report.* Activity not taking place / not taking / not planned to take place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: - additional costs to the renewables industry, e.g. for licensing mitigation and monitoring - delays to renewables development - delays, lost revenue and additional costs associated with cable repair activity restrictions. o Attracting the funding (for development) may be harder in the first place as sites with MPA designations within them will be less attractive to potential investors. o Costs and delays associated with co-location of renewables in MCZs, could result in long term implications in terms of renewables deployment which could have serious implications for industry and Government in terms of loss of operational revenue and missing EU climate change targets.

	o Enforced co-location with MCZs would dramatically restrict deployment. **If the assumption turns out to be wrong:** o If co-location assumptions are not correct the impacts would/could be: site locations that can't be developed, increased costs (the implications could be re-routing of cables around a feature could cost an additional £600,000 - £1.3m/km depending on cable type, size and seabed geology), construction delays, failure to meet renewables targets, impacts on acidification, additional monitoring requirements, increased uncertainty and declining investor confidence in renewables activities. o Increased competition for sea space with other sea users. o Atlantic Array (zone 8) windfarm site. This site would not be supported by several stakeholder representatives if the assumption turned out to be wrong, and the windfarm plans were affected by designation - however, this is unlikely, given work carried out between Natural England and the developers with respect to the possible implications of co-location (please refer to the statement made by RWE npower with respect to this site, included in the additional comments below).
Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Aquaculture of fin fish and shell fish will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Crab tiling / bait digging will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Beach replenishment will be permitted with mitigation / management Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Activities assumed to be allowed to continue / occur within the site	
Assumptions	**Implications**
Handlining (recreational angling and commercial handlining) will be permitted Handlining includes sea angling and trolling. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Handliners might face possible additional costs for mitigation measures and costs due to monitoring needed **Benefits:** o Potential for increased and enhanced leisure and recreational activity
The installation and maintenance of cables will be permitted and will not be made prohibitively expensive within the site. This applies to power cables (including cables for renewable energy devices), and telecommunications cables. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Cable installation cost increases and delay o Cable repair cost, delays and lost revenue could increase due to activity. o There is no definition of what 'prohibitively expensive' means; the cables representative would like assurance that no additional cost will result from MCZ designation (beyond costs associated with existing management and mitigation requirements). o Within the Local Group, particular concern was voiced over possible impacts on cabling across Bideford Bay to the landfall at Westward Ho! **If the assumption turns out to be wrong:** o For renewables/power cables, re-routing of cables around a feature or site might mean longer cable routes, at a cost of £600,000 - £1.3 million/km depending on cable type, size and seabed geology. o There may be other costs, e.g. costs associated with licensing, mitigation measures and monitoring requirements.

	o Increased licensing requirements and costs of cabling may have serious implications for industry and Government in terms of loss of operational revenue, missing EU climate change targets etc. o Possible cable route to renewables resources. o One proposed power cable.
The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational) Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **If the assumption turns out to be wrong:** o There are two active and six inactive telecoms cables within this site.
Tourism and recreational activities will be permitted. Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Maintenance dredging in ports (to enable access to ports) will be permitted *The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o
Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o (No heritage wrecks currently present in the site)

Anchoring of small vessels will be permitted *There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.* Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o No clear working group definition exists of what counts as a 'small' vessel. 24m was proposed some time ago by the RYA, but no decision was reached as to whether we would adopt that size in MCZ planning.
Passage of ships will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o **Given this assumption, there are still the following concerns:** o Local Group feedback indicates that there are concerns locally about whether any MCZ designation would impact on commercial shipping routes or recreational boat access, as agreed / appropriate with the Atlantic Array proposals.
Seaweed harvesting will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	**Direct implications:** o

Table II.3.45e VA Snapshot table: This table records the point which the vulnerability assessment discussions had reached regarding site management, at the time of the final Joint Working Group meeting in May 2011. The outcome is not definitive, and the VA did not carry out an exhaustive review of all the working assumptions recorded in the longer table above. The Steering Group were not directly involved in the VA discussions, and at their final meeting, expressed considerable reservations about the VA outcome (see section II.2.1). The reason this VA snapshot table is included here is so that readers have a record of what the VA snapshot was showing at the time the final stakeholder comments were recorded for this site. For a full explanation of the VA snapshot, please refer to part I. The maps in appendix 13 show a visual representation of the information in all the VA snapshot tables in the rMCZ site reports.

Sector	**Potential Management**
Commercial Fishing – all mobile bottom gears	Management: - Prohibition of fishing over specific BSH/FOCIs in the rMCZ. These are: moderate energy circalittoral rock. Measure: - Common Fisheries Policy

Stakeholder narrative: Uncertainties and Additional Comments

Uncertainties

The most significant uncertainty faced by the project was the lack of knowledge on management of MCZs, and this uncertainty still applies to all rMCZs in the network. There was uncertainty over what activities will be affected by MCZ designations: what activities will be permitted to continue within (or near) MCZs, what activities will not be permitted, and what activities will require mitigation or some form of restriction other than a complete ban. There was also uncertainty over what measures will be taken to ensure any activity restrictions are put in place (e.g. byelaws, voluntary measures).

Additional comments

The following is a set of additional comments made by stakeholder representatives over the course of the planning work. Some of these comments were made specifically about this site; others were more generic comments which the project team consider to be relevant to this site.

- *Mobile bottom gear*
    - Seasonal closures are an inappropriate measure for benthic conservation.
    - It is important that whatever is agreed outside the 6nm limit is ratified by Europe so that there are no unfair penalties on English vessels.

- *Renewables*
    - Co- location support for site following discussion with SNCBs. SNCBs and specific advice paper to be used in recommendations
    - There is an uncertainty about how the density of shipping lanes will change once the Atlantic Array windfarm is in place.
    - In response to the VA - The representative for regional development and economy stated that co-location was agreed to ease pressures elsewhere for the fishing industry and if the suggested management stays as it is (i.e. that fishing with mobile gears can continue in many of the rMCZs) then co-location may not have been agreed to by the windfarm developers.
    - RWE npower, the developers of the Atlantic Array windfarm, have made the following statement with respect to this site and the Morte Platform rMCZ [note that iQ6 and iR1 refer to MCZ building block codes used early in the process for the pre-cursors to the rMCZs referred to]: 'RWE is developing the Atlantic Array offshore wind farm within the outer Bristol Channel under an Agreement for Lease with The Crown Estate. Both the Atlantic Array project area (IR1) and the Morte Platform (IQ6), which lies across an export cable route from the wind farm, have been put forward by Finding Sanctuary as potential Marine Conservation Zones. The purpose of this statement is to provide our assessment of the compatibility of an MCZ in these areas with an offshore wind farm. We have been engaged with Natural England since September 2010 in addressing the inherent uncertainties presented by co-located MCZs. We were concerned that co-location would present higher consenting and monitoring hurdles than would otherwise be the case and that engineering solutions would potentially be constrained. This was undesirable in a site that is technically very challenging with a combination of deep water and significant tidal range. We have also engaged with the North Devon Biosphere Group, which has promoted MCZs within the Bristol Channel including the Morte

Platform. RWE supports the view that the MCZ network should be developed efficiently to secure the maximum ecological gain at the least socio-economic cost. We understand that co-location of an MCZ with the proposed Atlantic Array will reduce the area which will be closed to other sea users, particularly fishermen. The non-co-location networks included within the 3rd Progress report submitted to the SAP on 28 February 2011, included additions to areas in the Western Deeps, we note that the Finding Sanctuary project team has since put forward an alternative MCZ to the west of the Atlantic Array in a non-co-location scenario, to be considered by the Joint Working Group on the 6 April 2011. We understand that this new proposal, and/or areas within Western Deep will only be present in a non-co-location network, and that fishing activity in these areas is likely to be restricted through management measures. Co-location in our view will therefore minimise areas that will be closed to other human users of the sea – particularly fishermen, provided that the network is adjusted to correspond to remove those areas which are only proposed within a no co-location scenario. Should the outcome of the Joint Working Group (060411) put forward a non co-location network significantly different to those described we may wish to review the decision we have reached today. For these reasons we support a co-located MCZ at the Atlantic Array and at the Morte Platform. In due course we would very much welcome the opportunity of providing input to the choice of management measures for the relevant MCZ.'

- *Seabirds*
  - Codes of practice may be a better way to achieve management of leisure boats (if necessary) than byelaws.
  - The conservation sector has proposed for the protection of summer foraging birds that monitoring of disturbance and any by-catch issues and annual productivity monitoring would be necessary to determine that no deterioration in/loss of conservation status of the species making up the assemblage using the site (Manx Shearwater, Razorbill, Guillemot, Puffin, Gannet, Lesser Black-backed Gull) due to death, injury or disturbance. Mitigation measures would be required if there was a decline in species numbers due to activities within the rMCZ (e.g. disturbance from recreational disturbance, bycatch from fishing activity, built developments, pollution). Healthy populations of these species would suggest a healthy ecosystem within the site and would be an attraction for the general public and ecotourism.

- *General benefits of MCZs*
  - Some stakeholder representatives would like the following recorded and for these to be considered during the impact assessment:
    - Fisheries spill-over.
    - Improvements for the local economy.
    - Education opportunities.
    - Benefits to science.
    - Focus for voluntary groups.
    - Potential increase in the amount and quality of recreational activities (diving, sea angling, environmental tourism, etc).
    - The designation as an MCZ will be a selling point and will undoubtedly be used as an identifier to the area to highlight it as somewhere to visit.

- *Monitoring*
  - There are two main types of monitoring which will need to take place within rMCZs:

- Monitoring the activities within a site and the various levels at which they are occurring.
- Monitoring the ENG features for changes in condition.

Management measures

- This rMCZ lies beyond the 6 nautical mile limit, and partly outside the 12nm limit. There may be non-UK vessels with historical fishing rights in the area. For sites beyond 6nm, stakeholder representatives repeatedly voiced concern over how the activity of non-UK fishing vessels might be managed, and stated opposition to any unilateral measures that would apply to UK vessels only. At the time of the third progress report, we had received the following statement from the SNCBs and Defra: 'When considering the impacts of fishing restrictions on non UK vessels, it is the Government's intention that fishing restrictions will not be imposed unilaterally on UK vessels before they can be applied to equivalent EU vessels operating within the relevant areas. In the case of those EU fishing vessels with historic fishing rights in UK waters between 6 and 12 nm, Defra will negotiate with the relevant Member States and the European Commission before introducing byelaws, or orders that are applicable to all EU vessels, or seeking Common Fisheries Policy (CFP) regulation measures. Once introduced, these would apply to all EU vessels (including UK vessels) equally and at the same time.'

- *Reaction to the vulnerability assessment process and outcomes*
  - At the sixth Joint Working Group meeting in June 2011, the results from the regional vulnerability assessment (VA) discussions were presented to the group, as shown in table II.3.45e (the VA process is described in part I). This generated concern within the JWG, for two reasons. Firstly, several members of the group had serious misgivings over the outcome of the management discussions, especially with respect to those inshore rMCZs for which no management of bottom-towed mobile fishing gear was highlighted as necessary. Secondly, the group had serious misgivings about the process itself, from which they felt disenfranchised.
  - The Steering Group made a statement at their final meeting, articulating those concerns in more detail. They recommended that there should be a process that allows them to review potential management measures for MCZs, before public consultation. The full statement made by the Steering Group is in section II.2.1.

Levels of support

The network report (section II.2) includes a project team reflection on levels of support for the network recommendations as a whole, and the site specific reflection presented here should be read within the wider network context.

This site has been highlighted as a possible 'win-win', on the basis that the safety restrictions within a windfarm would in themselves protect seafloor habitat. The developers of the Atlantic Array windfarm, RWE, have made a statement to say that they are supportive of this site, on the basis of their discussions with Natural England that it would not pose obstacles or added costs for the development of the windfarm.

Local Group feedback indicates that they would expect a windfarm to act as a good nursery and breeding ground. However, some Local Group members voiced a fear that the reasons for selecting

the site were based on 'convenience', rather than for ecological reasons. Some were concerned about the construction of the windfarm altering the habitat present.

Although the commercial fishing industry supports co-location with renewable energy developments in principle, north Devon fishermen are not supportive of this rMCZ, due to ongoing negotiations with the developers around displacement compensation. It is currently the north Devon fishermen's representative's understanding that if the area was designated an MCZ, and that MCZ would lead to restrictions on fishing, the developers would not be required to pay fishermen compensation for lost grounds due to safety restrictions on fishing within the windfarm.

Supporting documentation

GIS data used for reporting the quantitative habitat and species figures in the tables above includes the following sources: UKSeaMap modelled broad-scale habitat data, MESH, and MB102. Refer to appendix 8 for details, and to the tables above for data sources for specific features in this site.

Further evidence underpinning the site can be found in the publications and datasets referred to in the detailed site description. There may be additional information relevant to this rMCZ in Mortimer *et al.* (2007).

Although this site does not fall within the boundary of the North Devon Biosphere Reserve, the North Devon Biosphere Reserve Marine Working Group has supplied additional information that is relevant to this site. This information includes a detailed description of the site and details of the species and habitats present. These recommendations have been included in their entirety in the additional materials supplied with this final report.

Site map series

On the following pages there are three maps of this site.

- The first map (FR_059a) is the main site map showing the rMCZ boundary and includes points with coordinates (in WGS84 UTM30N). The map also shows charted depth and existing Marine Protected Areas for reference. Please note: the lat/long coordinates of the vertices in the following maps have been calculated in decimal degrees, and in degrees, minutes and seconds. For plotting on a standard Admiralty (UKHO) chart, the seconds of each coordinate need to be converted to decimal. An MS Excel table showing all coordinates in degrees, minutes and decimal seconds has been provided in the additional materials section (see Appendix 14) for plotting purposes.
- The second map (FR_059b) shows the rMCZ boundary over broad-scale habitats, and records of habitat and species FOCI. The data shown on this map corresponds with the information in table II.3.45b, data sources are indicated in the table.
- The third map (FR_059c) shows socio-economic datasets. For spatial data showing the distribution of fishing effort, please refer to the interactive PDF maps supplied with the additional materials (see appendix 14).
- Because of the large number of features shown on the site maps (especially inshore biophysical maps), it has not been possible to embed comprehensive legends within the site maps themselves. A comprehensive map legend is therefore provided in appendix 7, which explains the symbology used on all the maps within this final report.
- Appendix 8 describes the data sources for the information shown on the final report maps in detail.

Map: FR_059a

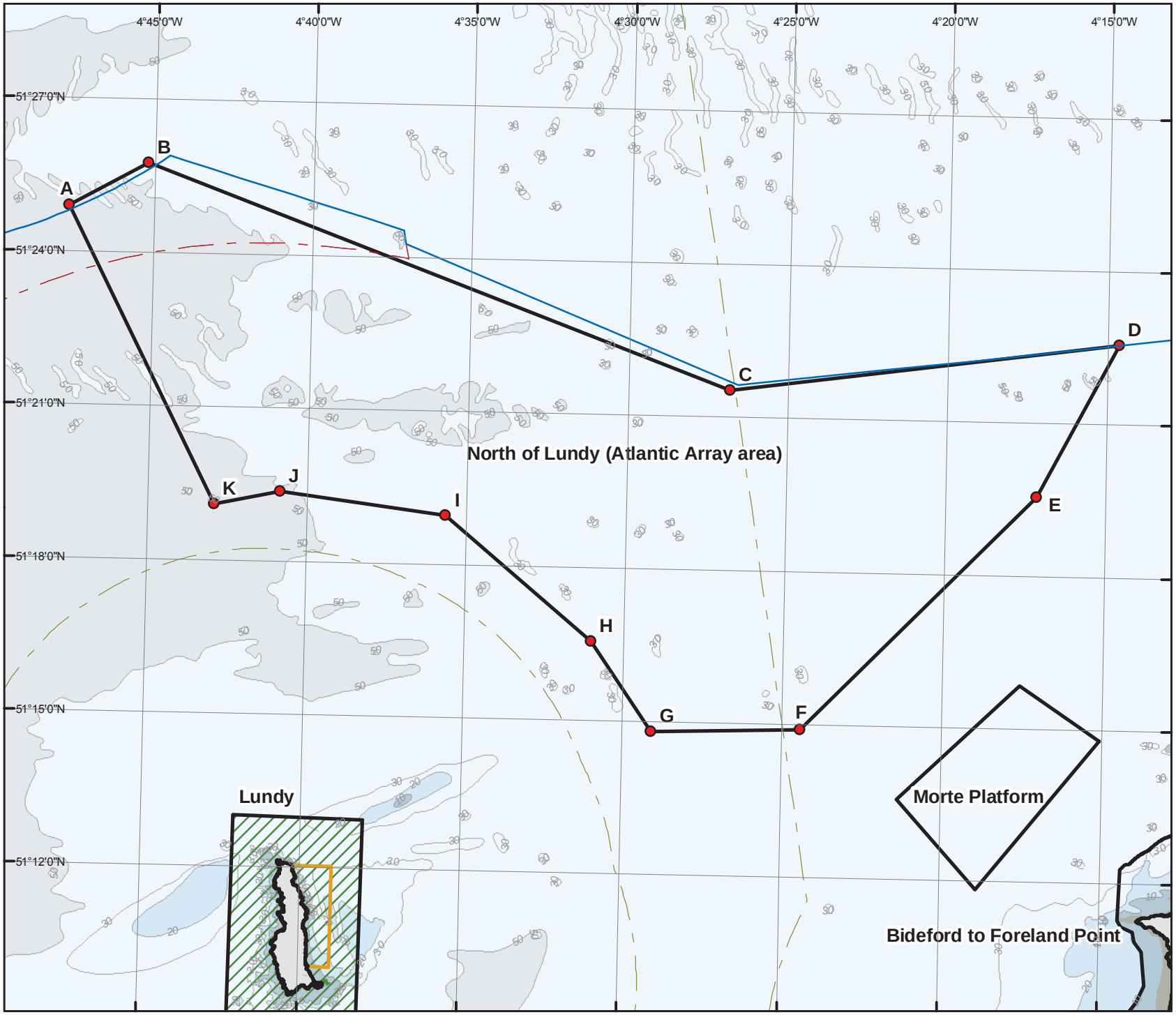
Version:26Aug11

North of Lundy (Atlantic Array area) rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 2.5 5 10 km N

FINDING SANCTUARY



Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	51.4152	-4.7946	51° 24' 54" N	4° 47' 40" W
B	51.4293	-4.7537	51° 25' 45" N	4° 45' 13" W
C	51.3592	-4.4469	51° 21' 33" N	4° 26' 48" W
D	51.3762	-4.2441	51° 22' 34" N	4° 14' 38" W
E	51.3261	-4.2860	51° 19' 34" N	4° 17' 9" W
F	51.2487	-4.4072	51° 14' 55" N	4° 24' 25" W
G	51.2471	-4.4849	51° 14' 49" N	4° 29' 5" W
H	51.2761	-4.5170	51° 16' 33" N	4° 31' 1" W
I	51.3162	-4.5943	51° 18' 58" N	4° 35' 39" W
J	51.3230	-4.6809	51° 19' 22" N	4° 40' 51" W
K	51.3184	-4.7153	51° 19' 6" N	4° 42' 55" W

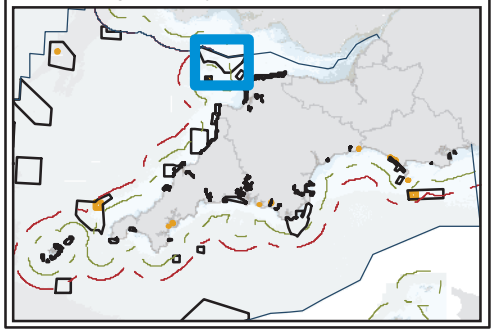
Map Legend

- Project boundary
- 6 nautical mile limit
- 12 nautical mile limit
- Recommended MCZ (rMCZ)
- Recommended reference area

Existing MPAs

- SAC

A comprehensive legend is provided in the appendices of the Finding Sanctuary final report.



Map: FR_059b

Version:31Aug11

North of Lundy (Atlantic Array area) rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with biophysical information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 5 10 km N

FINDING SANCTUARY

4°50'0"W 4°45'0"W 4°40'0"W 4°35'0"W 4°30'0"W 4°25'0"W 4°20'0"W 4°15'0"W 4°10'0"W

51°27'0"N 51°24'0"N 51°21'0"N 51°18'0"N 51°15'0"N 51°12'0"N 51°9'0"N

North of Lundy (Atlantic Array area)

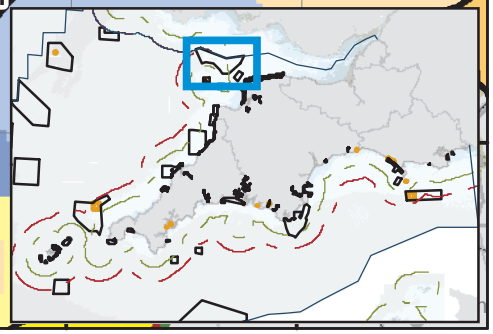
Lundy

Morte Platform

Map Legend

- Project boundary
- 6 nautical mile limit
- 12 nautical mile limit
- Recommended MCZ (rMCZ)
- Recommended reference area

These maps contain data from the following sources: Defra contracts MB102/MB106, the JNCC and Natural England, the Environment Agency, Wildlife NGOs and local records centres. Full details and a comprehensive legend are provided in the appendices of the Finding Sanctuary final report.



Map: FR_059c

Version:5Sep11

North of Lundy (Atlantic Array area) rMCZ

This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with socio-economic information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

0 3.5 7 14 km

N

FINDING SANCTUARY

4°56'0"W 4°48'0"W 4°40'0"W 4°32'0"W 4°24'0"W 4°16'0"W 4°8'0"W 4°0'0"W 3°52'0"W

51°30'0"N 51°25'0"N 51°20'0"N 51°15'0"N 51°10'0"N 51°5'0"N

Ilfracombe

Barnstaple

Bideford

Map Legend

- Project boundary
- 6 nautical mile limit
- 12 nautical mile limit
- Recommended MCZ (rMCZ)
- Recommended reference area
- NDFA Ray Box
- Round 3 windfarm licence area
- Planned extent of Atlantic Array
- Aggregate applications
- Aggregate prospecting or option areas
- Anchorages, berths & docks
- Charted wrecks
- Power and telecommunications cables (KISCA)

This map series contains data from a variety of sources including the UKHO, the Environment Agency, and The Crown Estate. A full list and a comprehensive legend can be found in the appendices of the Finding Sanctuary final report.